



Federal Accounting Standards Advisory Board

December 6, 2018

Memorandum

To: Members of the Board

Robin M. Gilliam

From: Robin M. Gilliam, Assistant Director

Wendy M. Payne

Through: Wendy M. Payne, Executive Director

Subject: **Risk Reporting¹ – Tab G**

MEMBER ACTION REQUESTED

**Please provide comments by
December 12, 2018**

MEETING OBJECTIVES

To determine if agencies report forward-looking information adequately (as envisioned by SFFAS 15, par. 3) and, whether, risk and uncertainty are appropriately discussed.

BRIEFING MATERIAL

The briefing material includes this memorandum and the following:

Attachment 1: 2017 MD&A Forward Looking Sections

Appendix A: Risk Assumed – Phase II: Project History and Milestones

Appendix B: Institute of Chartered Accountants in England and Wales [ICAEW]
Reporting Business Risks: Meeting Expectations, 2011

Appendix C: Task Force on Climate Related Financial Disclosures [TCFD] *Final Report: Recommendations of the Task Force on Climate-related Financial Disclosures, June 2017*

¹ The staff prepares Board meeting materials to facilitate discussion of issues at the Board meeting. This material is presented for discussion purposes only; it is not intended to reflect authoritative views of FASAB or its staff. Official positions of FASAB are determined only after extensive due process and deliberations.

BACKGROUND

The Risk Reporting project was last presented to the Board at the August 2018 meeting.

To better reflect the objectives, the risk assumed - phase II project was **renamed to the risk reporting project**.

The Board reviewed the measurement uncertainty framework it had requested at the October 2017 meeting. Because measurement uncertainty affects a number of estimates throughout the financial statements, the Board revisited the status of the risk assumed project. Members noted that the focus on risk assumed improved decisions in a number of projects despite the challenge of identifying specific risk measures as implied by the term “risk assumed.”

Members agreed that the risk assumed project should continue but is not likely to result in a specific measure of “risk assumed.” To avoid this expectation, the Board decided to change the project name to “risk reporting.” Members directed staff to work with the project leads of the reporting model phase I: MD&A and stewardship investments improvements project and the note disclosures project. Through this collaboration, the risk reporting project could address the principles needed for reporting financial and non-financial risks as well as the principles needed to reveal measurement uncertainty.

Overview

This memo will review reporting under the current Statement of Federal Financial Accounting Standards (SFFAS) 15, *Management's Discussions and Analysis* (MD&A) par. 3. This review will help the Board determine if agencies are reporting forward-looking MD&A information as envisioned by SFFAS15, par. 3; and whether risk and uncertainty are being appropriately discussed.

To facilitate this discussion, staff A) presents SFFAS 15, par. 3, B) reviews the 24 CFO Act agencies' 2017 forward-looking information (Attachment 1), and C) reviews other risk reporting models.

A. SFFAS 15, par. 3 states:

MD&A should include forward-looking information regarding the **possible future effects** of the most important existing, currently-known demands, risks, uncertainties, events, conditions and trends.

MD&A may also include forward-looking information about the **possible effects of anticipated future demands**, events, conditions, and trends.^{Footnote3} Forward-looking information may comprise a separate section of MD&A or may be incorporated with the sections listed above.²

^{Footnote 3}The word “anticipated” is used in a broad, generic sense in this document. In this context the term may encompass both “probable” losses arising from events that have occurred, which should be recognized on the face of the basic or “principal” financial statements, as well as “reasonably possible” losses arising from events that have occurred, which should be disclosed in notes to those statements.

“Anticipated” may include the effects of future events that are deemed probable, for which a financial forecast would be appropriate. The term may also encompass hypothetical future trends or events that are not necessarily deemed probable, for which financial projections may be appropriate.

Such information about the possible effects of anticipated future demands, events, conditions and trends, if presented, should include the term or label “projected” or “projection,” and the key hypothetical underlying assumptions should be explained. As with other information presented in MD&A, no examination of this information by the auditor is now routinely included within the scope of an audit of a federal entity’s financial statements; however, preparers and auditors may find useful background information in the AICPA’s Statements on Standards for Attestation Engagements Nos. 1 and 4, codified as section 200, “Financial Forecasts and Projections,” of the AICPA’s Codification of Statements on Standards for Attestation Engagements.

STAFF NOTE: the highlighted areas are to point out that SFFAS 15, par. 3 does not explicitly state financial effects, only “possible future effects.”

² SFFAS 15, Par. 2 states: MD&A should contain sections that address the entity’s: mission and organizational structure; performance goals, objectives, and results; financial statements; and systems, controls, and legal compliance.

B. REVIEW 24 CFO ACT AGENCIES' 2017 FORWARD-LOOKING INFORMATION

Staff reviewed the 24 CFO Act agencies' 2017 MD&As by searching specifically for forward-looking information.

Because the risk assumed project is now the risk reporting project, staff looked for forward-looking information about currently known risks and uncertainties and discussions about possible future effects on operations believing that is what is envisioned for SFFAS 15, par. 3.

Below are examples from four agencies that staff believes most closely aligned with the intent of SFFAS 15, par. 3. These agencies focused on possible future effects from known and anticipated risks and uncertainties.

USDA

EXTERNAL FACTORS THAT CHALLENGE USDA'S ABILITY TO ACHIEVE ITS GOALS INCLUDE THE FOLLOWING:

- Weather-related hardships, including disasters related to the increasing intensity and duration of extreme weather and climate change, both domestically and internationally;
- The risk of catastrophic fire, depending on weather, drought conditions, and the expanding number of communities in the wildland-urban interface;
- Non weather-related hardships and other uncontrollable events, both domestically and internationally;
- Domestic and international macroeconomic factors, including consumer purchasing power, the strength of the U.S. dollar, and political changes abroad that could impact domestic and global markets greatly at any time;
- Sharp fluctuations in farm prices, interest rates, and unemployment that could impact the ability of farmers, other rural residents, communities, and businesses to qualify for credit and manage debt;
- The impact of future economic conditions and actions by a variety of Federal, State, and local Governments that could influence the sustainability of rural infrastructure;

EDUCATION

Macroeconomic Risk

The ultimate amount, timing and value of future borrower repayments under the Direct Loan program are heavily affected by certain economic factors, especially since the introduction of income-based repayment plans. Some examples include the following:

Interest Rates: Direct Loan subsidy estimates are very sensitive to changes in interest rates. Recent interest rate history has been atypical, as interest rates have continued to remain lower than their historical averages. Under the current program terms, the fixed borrower rates for direct loans are established in advance of the upcoming school year, while the Treasury fixed interest rate on borrowings to fund those loans is not set until after those awards are fully disbursed, which can be as much as 18 months later. Unexpected changes in interest rates during this time can significantly impact the subsidy cost of these loans.

Unemployment: The financial crisis of 2008 and ensuing spike in unemployment rates had a dramatic effect on both student loan volume and student loan performance. Student loan volume peaked along with unemployment, as many displaced workers sought higher education opportunities. Student loan performance suffered as many borrowers repaying their loans were left with much less disposable income with which to make their loan payments. For example, the default rate for students was at a high of 14.7 percent for loans entering repayment in 2010, while the most recent rate is 11.5 percent for loans entering repayment in 2014. While recessions and economic downturns are cyclical phenomena, their exact timing and impact on the cost estimates remain an area of uncertainty.

JUSTICE

Unpredictable

- Responses to unanticipated natural disasters and their aftermath, such as the three major hurricanes the United States endured in 2017, require the Department to divert resources to deter, investigate, and prosecute disaster-related federal crimes, such as charity fraud, insurance fraud and other crimes.
- Changes in federal laws may affect responsibilities and workload.
- Much of the litigation caseload is defensive. The Department has little control over the number, size, and complexity of the civil lawsuits it must defend.

NRC

Market Pressures on Operating Plants and License Applications

Market forces result in pressures to reduce operating costs. As a result, the NRC needs to be prepared to address potential shutdowns of facilities before license expiration and to continue to ensure that oversight programs identify degrading facility safety and security performance. Conversely, the lower capital costs of small modular reactors (under 300 megawatts) may offer industry a more attractive option to add new capacity. Several entities are seeking to submit license applications for small modular reactors in the next several years. The U.S. Department of Energy (DOE) is funding a program "to design, certify and help commercialize innovative small modular reactors in the United States." The NRC is developing a licensing framework for these as well as other advanced reactors.

Other agencies presented good discussions that combined requirements from standards SFFAS 15, par. 3 and SFFAS 15, par. 4.

4. MD&A should discuss important problems that need to be addressed, and actions that have been taken or planned. Actions needed, taken, and planned may be discussed within the sections listed above or in a separate section of MD&A.

Below are examples of these discussions.

HHS

The Message from the Acting Secretary addresses one of the most pressing issues facing the American public—the ongoing opioid crisis. Acting Secretary Hargan took action on October 26, 2017, by declaring a nationwide public health emergency. According to the CDC, more than 175 Americans die every day from drug overdoses, with 91 of those deaths occurring specifically from opioids. HHS developed a five-point strategy to combat opioids, which includes the following steps:

- Improve access to prevention, treatment, and recovery support services;
- Target the availability and distribution of overdose-reversing drugs;
- Strengthen public health data and reporting;
- Support cutting-edge research on addiction and pain; and
- Advance the practice of pain management.

HUD

Forward Looking Information

Numerous external factors shape HUD's operating environment. Understanding their influence is essential for mitigating risk and achieving performance objectives. These external factors include funding levels, economic conditions, unemployment rates, financial markets, tax codes, and other federal, state and local conditions. HUD's new *2018–2022 Strategic Plan* responds to these factors by reimagining the way HUD works. The plan's reforms include careful use of evidence, employee empowerment, clear communication, and enhanced controls that are all crucial to more efficient and effective mission delivery.

Constrained federal funding levels affected most HUD programs during FY 2017 and are likely to continue in the foreseeable future. Financial constraints increase demand by Public Housing Authorities (PHAs) for administrative and operational flexibility. HUD is implementing such flexibilities through the Rental Assistance Demonstration, which gives PHAs access to private capital, and by working toward an evidence-based expansion of housing agencies participating in the Moving to Work program.

LABOR

Occupational Safety and Health Administration (OSHA)

Looking Forward: In FY 2018, OSHA's effort to promote Safety and Health Programs (SHP) and move employers along the path to safety excellence will unite the various programmatic components of the agency in a common, proactive, and positive message addressing the agency's core mission. Companies that adopt a SHP improve both their safety culture and safety performance. In addition, OSHA cooperative program participants often reach stakeholders that OSHA may not otherwise interact with through dissemination of safety and health information locally, within their company, or industry. OSHA will also refine current enforcement strategies and implement new programs to target inspection resources to the most egregious employers and serious hazards.

Mine Safety and Health Administration (MSHA)

Looking Forward: MSHA will use the following strategies in pursuit of achieving this target: increasing inspection and enforcement effectiveness, strengthening and modernizing training and education, strengthening health and safety regulations, and increasing efforts to protect miners from discrimination.

Wage and Hour Division (WHD)

Looking Forward: To protect fair and vigorous competition, WHD addresses compliance issues systemically and prevents violations through compliance assistance to reach a broader audience. The combination of compliance assistance and enforcement increases compliance with the laws. Moving forward, WHD is focused on the challenge of advancing effective enforcement while identifying areas for increased efficiency. To ensure a level playing field for all employers, WHD will conduct its business smarter and more effectively by assessing existing evidence and generating new knowledge to achieve agency goals. Compliance assistance to the employer community is a central component of WHD's efforts to meet its mission and the demand for accessible information about the laws WHD enforces remains high. WHD will expand on efforts to modernize compliance assistance information and reach and inform a broader audience.

The 2018 agency financial reports (AFR) became available after staff began research for this meeting.

While we did not add them to Attachment 1, we have included a comparison for the Veterans Administration (VA) between 2017 and 2018 to show members how forward-looking information is evolving.

ANALYSIS OF ENTITY'S SYSTEMS, CONTROLS, AND LEGAL COMPLIANCE

MANAGEMENT ASSURANCES

THE SECRETARY OF VETERANS AFFAIRS
WASHINGTON

November 15, 2017

Department of Veterans Affairs (VA) management is responsible for managing risks and maintaining effective internal control to meet the objectives of Sections 2 and 4 of the Federal Managers' Financial Integrity Act (FMFIA). VA conducted its assessment of risks and internal control in accordance with Office of Management and Budget (OMB) Circular No. A-123, *Management's Responsibility for Enterprise Risk Management and Internal Control*. Based on the results of the assessment, the Department can provide reasonable assurance that internal controls over operations, reporting, and compliance were operating effectively as of September 30, 2017, except for the following reported material weaknesses:

- (1) Government Accountability Office (GAO) High-Risk List Areas: Every 2 years, at the start of a new Congress, GAO calls attention to agencies and program areas that are high risk due to their vulnerabilities to fraud, waste, abuse, and mismanagement, or are most in need of transformation. GAO's 2015 High-Risk List added "Managing Risks and Improving VA Health Care." GAO highlighted five primary risk issues: (1) ambiguous policies and inconsistent processes; (2) inadequate oversight and accountability; (3) information technology (IT) challenges; (4) inadequate training of VA staff, and (5) unclear resources and allocation priorities. VA submitted its management strategy to GAO to address the five high-risk issues. VA senior leadership is overseeing implementation of the strategy.
- (2) Access to Care: Veterans experiencing long wait times for care challenged the Veterans Health Administration (VHA) to develop open scheduling access. Open access means having space in "today's" schedule for patients to be seen, which means transitioning from a fully booked appointment schedule to a schedule with immediate appointment availability. To improve access to care, VA removed wait times from performance plans, retrained schedulers on a simplified scheduling process, established simplified wait time methods, and increased the volume of appointments completed. VHA implemented Same Day Service (SDS) in Primary Care and Mental Health as of December 2016, and is currently implementing SDS in Community-Based Outpatient Clinics, with an anticipated completion of December 2017. In addition, scheduling software enhancements are currently in progress.

SECTION I: MANAGEMENT’S DISCUSSION AND ANALYSIS

FORWARD-LOOKING INFORMATION

As VA looks to the future, there are circumstances both inside and outside the organization that will affect our operations and our service to Veterans. Some of these circumstances are risks or weaknesses that hinder our ability to deliver the kind of service we would like to provide.

Others are new approaches that challenge the organization to re-think its processes and ways of engaging the Veteran. Still others are aspirations VA leadership has set before the organization to operate at a level of excellence like the best of private sector entities.

RISKS

Like every organization, VA faces risks to its ability to function at its most effective and efficient levels. As VA develops its enterprise risk management (ERM) processes and begins formally and systematically surveying its environment, several risks have come to the fore. These are not the only risks that we have identified, but they are among those that stand out:

- VA’s financial management system is 30 years old and continued reliance on it presents a risk to VA operations. The technical and functional ability to support legacy applications is more difficult with each passing year. In FY 2019, VA will focus on completing

critical business process reengineering projects as part of the FMBT initiative.

- VA’s antiquated and unintegrated IT systems present a risk to VA operations. VA must modernize its IT systems to improve delivery of services and benefits to Veterans. Many of the 130 legacy IT systems that VA relies on to administer and deliver Veteran benefits are no longer supportable and do not meet security compliance standards or support new, more efficient business processes. Over the next 1 to 2 years, VA will assess its technology gaps and develop and implement strategies to close those gaps.

While agencies are meeting the requirements of the current SFFAS 15, par 3, most agencies, as illustrated above, only provide a discussion of strategic and operating performance goals and the short-term actions taken to address them. There is little discussion of possible future **financial** effects as they relate to risks and uncertainties.

Staff believes this is because SFFAS 15, par. 3 only implies a discussion on a financial impact in the footnote 3 about *the possible effects of “anticipated” future demands*. This lack of clarity does not provide adequate requirements to prompt agencies to report on risks and uncertainties that have possible **financial** effects in the future.

Staff wants to remind the Board that at the April and August 2018 MD&A Board discussions members emphasized that MD&A should focus more on financial effects and less on strategic and performance goals. As a result, staff researched other reporting models to understand how they were reporting the financial effects of financial and non-financial risks and uncertainties.

C. REVIEW of OTHER RISK REPORTING MODELS

Risk reporting has been a big concern since the financial crisis of 2007/2008.

As a result, organizations like the Institute of Chartered Accountants in England & Wales (ICAEW) and the Task Force on Climate-related Financial Disclosures (TCFD) have conducted studies and provided reports on risk reporting. [See Appendix A and B]

Appendix 1, *Requirements for Risk Disclosures* of the ICAEW report reviews risk reporting requirements for different countries. Page 47 identifies the **SEC risk requirements for the US**.

A1.1 US

A1.1.1 Risk factors

The US Securities and Exchange Commission (SEC) requires publicly traded companies to disclose ‘risk factors’ in their annual (Form 10-K) reports and to update them in their quarterly 10-Q reports if they change. The factors to be disclosed, defined in the SEC’s prospectus requirements (Regulation S-K, Item 503, paragraph (c)), are ‘the most significant factors that make the offering speculative or risky’.

SEC guidance suggests that firms should ‘generally avoid mitigating language’ in their risk disclosures – eg, ‘clauses that begin with “while,” “although” or “however”.’ In practice, companies disclose how they manage risks in their MD&A disclosures (see below).

Staff supports a requirement such as the SEC 10-K Risk Factors section. As noted in the following two examples, both the Tennessee Valley Authority (TVA) and Apple explain specific risk factors that could, directly or indirectly, cause actual financial condition and operating results to vary materially from the past, or from anticipated future, financial condition and operating causes.

In addition to the Risk Factor section, SEC also requires the following forward looking information in MD&A,

A1.1.2 Management discussion and analysis

The US SEC's requirements for publicly traded companies include an annual management discussion and analysis (MD&A). The requirements in their current form go back to 1980, although they have been amended on a number of occasions since then. The MD&A is to some extent about risks that the company faces. For example, there are requirements to:

'Identify any known trends or any known demands, commitments, events or uncertainties that will result in or that are reasonably likely to result in the registrant's liquidity increasing or decreasing in any material way' (Regulation S-K, Item 303, paragraph (a) (1))

'Describe any known material trends, favorable or unfavorable, in the registrant's capital resources. Indicate any material changes in the mix and relative cost of such resources' (paragraph (a) (2) (ii)).

'Describe any known trends or uncertainties that have had or that the registrant reasonably expects will have a material favourable or unfavourable impact on net sales or revenues or income from continuing operations' (paragraph (a) (3) (ii)).

The motivation for the requirements is the risk that users of the company's financial statements will draw unwarranted conclusions about the future from the historical information in these statements. The SEC's instructions to preparers state:

'The discussion and analysis shall focus specifically on material events and uncertainties known to management that would cause reported financial information not to be necessarily indicative of future operating results or of future financial condition... This would include descriptions and amounts of (A) matters that would have an impact on future operations and have not had an impact in the past, and (B) matters that have had an impact on reported operations and are not expected to have an impact upon future operations' (Instruction 3 to Paragraph 303(a)).

The following are excellent risk reporting examples that follow SEC risk requirements. Staff chose TVA as one example because it is a government entity that must file SEC reports. We also chose Apple, since most are familiar with their products.

The Tennessee Valley Authority is a corporate agency of the United States that provides electricity for business customers and local power companies serving 9 million people in parts of seven southeastern states. TVA receives no taxpayer funding, deriving virtually all of its revenues from sales of electricity. In addition to operating and investing its revenues in its electric system, TVA provides flood control, navigation and land management for the Tennessee River system and assists local power companies and state and local governments with economic development and job creation.

Section 1: 10-K (10-K)



Commission file number 000-52313

TENNESSEE VALLEY AUTHORITY

(Exact name of registrant as specified in its charter)

ITEM 1A. RISK FACTORS

The risk factors described below, as well as the other information included in this Annual Report, should be carefully considered. Risks and uncertainties described in these risk factors could cause future results to differ materially from historical results as well as from the results anticipated in forward-looking statements. Although the risk factors described below are the ones that TVA considers significant, additional risk factors that are not presently known to TVA or that TVA presently does not consider significant may also impact TVA's business operations. See *Forward Looking Information* above for a description of some matters that could affect the below risks or generate new risks. Although the TVA Board has the authority to set TVA's own rates and may mitigate some risks by increasing rates, there may be instances in which TVA would be unable to partially or completely eliminate one or more of these risks through rate increases over a reasonable period of time or at all. Accordingly, the occurrence of any of the following could have a material adverse effect on TVA's cash flows, results of operations, and financial condition.

For ease of reference, the risk factors are presented in four categories: (1) regulatory, legislative, and legal risks, (2) operational risks, (3) financial, economic, and market risks, and (4) general business risks.

REGULATORY, LEGISLATIVE, AND LEGAL RISKS

New laws, regulations, or administrative orders, or congressional action or inaction, may negatively affect TVA's cash flows, results of operations, and financial condition, as well as the way TVA conducts its business.

Because TVA is a corporate agency and instrumentality established by federal law, it may be affected by a variety of laws, regulations, and administrative orders that do not affect other electric utilities. For example, federal legislation may expand or reduce TVA's activities, change its governance structure, require TVA to sell some or all of the assets that it operates, require TVA to take certain other operational or regulatory actions, reduce or eliminate the U.S.'s ownership of TVA, or even liquidate TVA. Additionally, Congress could act, or fail to take action, on various issues that may result in impacts to TVA, including but not limited to action or inaction related to the national debt ceiling or automatic spending cuts in government programs.

Although it is difficult to predict exactly how new laws, regulations, or administrative orders or congressional action or inaction may impact TVA, some of the possible effects are described below.

TVA may become subject to additional environmental regulation.

New environmental laws, regulations, or orders may become applicable to TVA or the facilities it operates, and existing environmental laws or regulations may be revised or reinterpreted in a way that adversely affects TVA, including substantially increasing TVA's cost of operations or requiring significant capital expenditures. Possible areas of future laws or regulations include, but are not limited to, GHGs, CCRs, water quality, renewable energy portfolio standards, and natural gas production and transmission.

Operating nuclear units subjects TVA to nuclear risks and may result in significant costs that adversely affect its cash flows, results of operations, and financial condition.

TVA has seven operating nuclear units. Risks associated with these units include the following:

Nuclear Risks. A nuclear incident at one of TVA's facilities could have significant consequences including loss of life, damage to the environment, damage to or loss of the facility, and damage to non-TVA property. Although TVA carries certain types of nuclear insurance, the amount that TVA is required to pay in connection with a nuclear incident could significantly exceed the amount of coverage provided by insurance. Any nuclear incident in the U.S., even at a facility that is not operated by or licensed to TVA, has the potential to impact TVA adversely by obligating TVA to pay up to \$133 million per year and a total of \$891 million per nuclear incident under the Price-Anderson Act. Any such nuclear incident could also negatively affect TVA by, among other things, obligating TVA to pay retrospective insurance premiums, reducing the availability and affordability of insurance, increasing the costs of operating nuclear units, or leading to increased regulation or restriction on the construction, operation, and

decommissioning of nuclear facilities. Moreover, federal legislation could impose revenue-raising measures on the nuclear industry to pay claims exceeding the limit for a single incident under the Price-Anderson Act. Further, the availability or price of insurance may be impacted by TVA's acts or omissions, such as a failure to properly maintain a facility, or events outside of TVA's control, such as an equipment manufacturer's inability to meet a guideline, specification, or requirement.

Decommissioning Costs. TVA maintains a Nuclear Decommissioning Trust ("NDT") for the purpose of providing funds to decommission its nuclear facilities. The NDT is invested in securities generally designed to achieve a return in line with overall equity and debt market performance. TVA might have to make unplanned contributions to the NDT if, among other things:

- The value of the investments in the NDT declines significantly or the investments fail to achieve the assumed real rate of return;
- The decommissioning funding requirements are changed by law or regulation;
- The assumed real rate of return on plan assets, which is currently five percent, is lowered by the TVA Board or is overly optimistic;
- The actual costs of decommissioning are more than planned;
- Changes in technology and experience related to decommissioning cause decommissioning cost estimates to increase significantly;
- TVA is required to decommission a nuclear plant sooner than it anticipates; or
- The NRC guidelines for calculating the minimum amount of funds necessary for decommissioning activities are significantly changed.

Weather conditions may influence TVA's ability to supply power and its customers' demands for power.

Extreme temperatures may increase the demand for power and require TVA to purchase power at high prices to meet the demand from customers, while unusually mild weather may result in decreased demand for power and lead to reduced electricity sales. Also, in periods of below normal rainfall or drought, TVA's low-cost hydroelectric generation may be reduced, requiring TVA to purchase power or use more costly means of producing power. Additionally, periods of either high or low levels of rainfall may impede river traffic, impacting barge deliveries of critical items such as coal and equipment for power facilities. Furthermore, high river water temperatures in the summer may limit TVA's ability to use water from the Tennessee or Cumberland River systems for cooling at certain of TVA's generating facilities, thereby limiting its ability to operate these generating facilities. This situation would be aggravated during periods of reduced rainfall or drought. If changes in the climate make such shifts in weather more common or extreme, TVA may be required to, among other things, change its generation mix or change how it conducts its operations, which could have a material adverse effect on TVA's cash flows, results of operations, and financial condition.

Catastrophic events may negatively affect TVA's cash flows, results of operations, and financial condition.

TVA's cash flows, results of operations, and financial condition may be adversely affected, either directly or indirectly, by catastrophic events such as fires, earthquakes, explosions, solar events, electromagnetic pulses ("EMP"), droughts, floods, tornadoes, wars or other casualty events or national emergencies, terrorist activities, pandemics, or other similar destructive or disruptive events. These events, the frequency and severity of which are unpredictable, may, among other things, lead to legislative or regulatory changes that affect the construction, operation, and decommissioning of nuclear units and the storage of spent fuel; limit or disrupt TVA's ability to generate and transmit power; limit or disrupt TVA's ability to provide flood control and river management; reduce the demand for power; disrupt fuel or other supplies; require TVA to produce additional tritium; lead to an economic downturn; require TVA to make substantial capital investments for repairs, improvements, or modifications; and create instability in the financial markets. If public opposition to nuclear power makes operating nuclear plants less feasible as a result of any of these events, TVA may be forced to shut down its nuclear plants. This would make it substantially more difficult for TVA to obtain greater amounts of its power supply from low or zero carbon emitting resources and to replace its generation capacity when faced with retiring or idling certain coal-fired units. Additionally, some studies have predicted that climate change may cause catastrophic events, such as droughts and floods, to occur more frequently in the Tennessee Valley region, which could adversely impact TVA.

ITEM 7. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

(Dollars in millions except where noted)

The following Management's Discussion and Analysis of Financial Condition and Results of Operations ("MD&A") is intended to help the reader understand Tennessee Valley Authority ("TVA"), its operations, and its present business environment. The MD&A is provided as a supplement to, and should be read in conjunction with, TVA's consolidated financial statements and the accompanying notes thereto contained in Item 8, Financial Statements and Supplementary Data of this Annual Report on Form 10-K for the fiscal year ended September 30, 2018 (the "Annual Report"). The MD&A includes the following sections:

- Business and Mission - a general description of TVA's business, objectives, strategic priorities, and core capabilities;
- Executive Overview - a general overview of TVA's activities and results of operations for 2018;
- Results of Operations - an analysis of TVA's consolidated results of operations for the three years presented in its consolidated financial statements;
- Liquidity and Capital Resources - an analysis of cash flows, a description of aggregate contractual obligations, and an overview of financial position;
- Key Initiatives and Challenges - an overview of current and future initiatives and challenges facing TVA;
- Critical Accounting Policies and Estimates - a summary of accounting policies that require critical judgments and estimates;
- Fair Value Measurements - a description of TVA's investments and derivative instruments and valuation considerations;
- Legislative and Regulatory Matters - a summary of laws and regulations that may impact TVA; and
- Risk Management Activities - a description of TVA's risk governance and exposure to various market risks.

Consistent with national trends, energy demand in the areas served by TVA and the LPCs has been essentially flat over the past five years. TVA anticipates this trend to continue as technological advances, consumer demand for generation, energy management technologies, and distributed energy increase. To accommodate this trend, TVA began working with its LPCs on its long-term pricing and product development strategies in the fall of 2013. Since that time, TVA has collaborated with its LPCs to

refine some of these details. At its May 10, 2018 meeting, the TVA Board approved a change to the structure of its wholesale electric power rates through pricing that better aligns wholesale rates with the underlying cost to serve customers. TVA is continuing to work with LPCs to implement these changes, which became effective on October 1, 2018. With this proactive rate structure change, TVA expects to provide a stable foundation that gives the flexibility to embrace new trends and to continue delivering more innovative energy options.

Additionally, TVA remains committed to planning its system in a way that ensures evolving resource portfolios remain reliable and provide the most value to all customers. TVA utilizes an Integrated Resource Plan ("IRP") to provide direction on how to best meet future electricity demand. TVA has begun working on an updated IRP that will consider many views of the future to determine how TVA can continue to provide low-cost, reliable electricity, support environmental stewardship, and spur economic development in the Tennessee Valley over the next 20 years.

Fuel

Fuel expense decreased \$120 million for the year ended September 30, 2018, as compared to the prior year. The impact of lower effective fuel rates, driven by lower market prices for natural gas and changes in the mix of generation resources, including more nuclear, natural gas, and hydroelectric generation and less coal-fired generation, contributed \$234 million to the decrease. As an indication of the general market direction, the average Henry Hub natural gas spot price for the year ended September 30, 2018, was approximately three percent lower than the price for the prior year. Partially offsetting this decrease was a \$114 million increase in fuel expense driven by a five percent increase in generation from TVA-operated resources to meet increased sales during the period.

Apple

 Share

Multinational Technology Company



Apple Inc. is an American multinational technology company headquartered in Cupertino, California, that designs, develops, and sells consumer electronics, computer software, and online services. The company's hardware products include the iPhone... +

FORM 10-K

Annual report pursuant to section 13 and 15(d)

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Item 1A. Risk Factors

-i-

The following discussion of risk factors contains forward-looking statements. These risk factors may be important to understanding other statements in this Form 10-K. The following information should be read in conjunction with Part II, Item 7, "Management's Discussion and Analysis of Financial Condition and Results of Operations" and the consolidated financial statements and related notes in Part II, Item 8, "Financial Statements and Supplementary Data" of this Form 10-K.

The business, financial condition and operating results of the Company can be affected by a number of factors, whether currently known or unknown, including but not limited to those described below, any one or more of which could, directly or indirectly, cause the Company's actual financial condition and operating results to vary materially from past, or from anticipated future, financial condition and operating results. Any of these factors, in whole or in part, could materially and adversely affect the Company's business, financial condition, operating results and stock price.

Because of the following factors, as well as other factors affecting the Company's financial condition and operating results, past financial performance should not be considered to be a reliable indicator of future performance, and investors should not use historical trends to anticipate results or trends in future periods.

Global and regional economic conditions could materially adversely affect the Company.

The Company's operations and performance depend significantly on global and regional economic conditions. Uncertainty about global and regional economic conditions poses a risk as consumers and businesses may postpone spending in response to tighter credit, higher unemployment, financial market volatility, government austerity programs, negative financial news, declines in income or asset values and/or other factors. These worldwide and regional economic conditions could have a material adverse effect on demand for the Company's products and services. Demand also could differ materially from the Company's expectations as a result of currency fluctuations because the Company generally raises prices on goods and services sold outside the U.S. to correspond with the effect of a strengthening of the U.S. dollar. Other factors that could influence worldwide or regional demand include changes in fuel and other energy costs, conditions in the real estate and mortgage markets, unemployment, labor and healthcare costs, access to credit, consumer confidence and other macroeconomic factors affecting consumer spending behavior. These and other economic factors could materially adversely affect demand for the Company's products and services.

To remain competitive and stimulate customer demand, the Company must successfully manage frequent product introductions and transitions.

Due to the highly volatile and competitive nature of the industries in which the Company competes, the Company must continually introduce new products, services and technologies, enhance existing products and services, effectively stimulate customer demand for new and upgraded products and successfully manage the transition to these new and upgraded products. The success of new product introductions depends on a number of factors including, but not limited to, timely and successful product development, market acceptance, the Company's ability to manage the risks associated with new product production ramp-up issues, the availability of application software for new products, the effective management of purchase commitments and inventory levels in line with anticipated product demand, the availability of products in appropriate quantities and at expected costs to meet anticipated demand and the risk that new products may have quality or other defects or deficiencies in the early stages of introduction. Accordingly, the Company cannot determine in advance the ultimate effect of new product introductions and transitions.

The Company's products and services may experience quality problems from time to time that can result in decreased sales and operating margin and harm to the Company's reputation.

The Company sells complex hardware and software products and services that can contain design and manufacturing defects. Sophisticated operating system software and applications, such as those sold by the Company, often contain "bugs" that can unexpectedly interfere with the software's intended operation. The Company's online services may from time to time experience outages, service slowdowns or errors. Defects may also occur in components and products the Company purchases from third parties. There can be no assurance the Company will be able to detect and fix all defects in the hardware, software and services it sells. Failure to do so could result in lost revenue, significant warranty and other expenses and harm to the Company's reputation.

The Company is subject to laws and regulations worldwide, changes to which could increase the Company's costs and individually or in the aggregate adversely affect the Company's business.

The Company is subject to laws and regulations affecting its domestic and international operations in a number of areas. These U.S. and foreign laws and regulations affect the Company's activities including, but not limited to, in areas of labor, advertising, digital content, consumer protection, real estate, billing, e-commerce, promotions, quality of services, telecommunications, mobile communications and media, television, intellectual property ownership and infringement, tax, import and export requirements, anti-corruption, foreign exchange controls and cash repatriation restrictions, data privacy requirements, anti-competition, environmental, health and safety.

Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations

This section and other parts of this Annual Report on Form 10-K ("Form 10-K") contain forward-looking statements, within the meaning of the Private Securities Litigation Reform Act of 1995, that involve risks and uncertainties. Forward-looking statements provide current expectations of future events based on certain assumptions and include any statement that does not directly relate to any historical or current fact. Forward-looking statements can also be identified by words such as "future," "anticipates," "believes," "estimates," "expects," "intends," "plans," "predicts," "will," "would," "could," "can," "may," and similar terms. Forward-looking statements are not guarantees of future performance and the Company's actual results may differ significantly from the results discussed in the forward-looking statements. Factors that might cause such differences include, but are not limited to, those discussed in Part I, Item 1A of this Form 10-K under the heading "Risk Factors," which are incorporated herein by reference. The following discussion should be read in conjunction with the consolidated financial statements and notes thereto included in Part II, Item 8 of this Form 10-K. All information presented herein is based on the Company's fiscal calendar. Unless otherwise stated, references to particular years, quarters, months or periods refer to the Company's fiscal years ended in September and the associated quarters, months and periods of those fiscal years. Each of the terms the "Company" and "Apple" as used herein refers collectively to Apple Inc. and its wholly-owned subsidiaries, unless otherwise stated. The Company assumes no obligation to revise or update any forward-looking statements for any reason, except as required by law.

Financial Instruments

In January 2016, the FASB issued ASU No. 2016-01, Financial Instruments – Overall (Subtopic 825-10): Recognition and Measurement of Financial Assets and Financial Liabilities ("ASU 2016-01"), which updates certain aspects of recognition, measurement, presentation and disclosure of financial instruments. The Company will adopt ASU 2016-01 in its first quarter of 2019 utilizing the modified retrospective transition method. Based on the composition of the Company's investment portfolio, the adoption of ASU 2016-01 is not expected to have a material impact on its consolidated financial statements.

In June 2016, the FASB issued ASU No. 2016-13, Financial Instruments – Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments ("ASU 2016-13"), which modifies the measurement of expected credit losses of certain financial instruments. The Company will adopt ASU 2016-13 in its first quarter of 2021 utilizing the modified retrospective transition method. Based on the composition of the Company's investment portfolio, current market conditions, and historical credit loss activity, the adoption of ASU 2016-13 is not expected to have a material impact on its consolidated financial statements.

In addition to the SEC risk reporting requirements, the Canadian Public Sector Accounting Board (PSAB) just finished collecting comments on their *Statement of Concepts: A Revised Conceptual Framework for the Canadian Public Sector* published in May 2018.

Reporting Risks and Uncertainties Associated with the Entity

Objective 6

Financial statements should provide information to describe the risks and uncertainties that could affect the entity's financial position or changes in financial position. Such information would be useful for evaluating the nature and extent of these risks and uncertainties and the entity's management of them.

- 6.45 Risks and uncertainties are externally driven and outside the entity's control. This is why the public and its elected or appointed representatives want to assess an entity's exposure to these risks and uncertainties and how its financial position and changes in financial position might be affected. To make this assessment, users want disclosures about risks and uncertainties that could affect what is reported in financial statements. They also want disclosure about the management of these risks and uncertainties. This information would help them assess the entity's ability to meet its objectives in the short and long term. Disclosure about how the entity manages the risks and uncertainties is important accountability information.

From the above examples, it is clear that SEC is explicit in requirements to present the financial effect of risks and uncertainties. PSAB is also explicit in expectations about how risks and uncertainties tie to financial position and results. While there are no specific financial projections, except for fines already identified for a Nuclear incident, both TVA and Apple explain what the risk is and whether or how the financial position and results of operations may be impacted.

STAFF RECOMMENDATIONS

Staff recommends that specific risk factors and uncertainties be identified that may have possible future financial effects on financial position and operating results outside of the realm of historical trends.

This may be achieved 1) by amending SFFAS 15, par 3; or by 2) an interpretation for the current SFFAS 15, par 3.

Staff prefers amending SFFAS 15 because an interpretation would need to elaborate on the word “effects” by defining it in relation to financial position and operation results. Amending the forward-looking MD&A requirements would allow the Board to write explicit guidance to prompt the preparers to provide appropriate risk reporting.

QUESTIONS FOR THE BOARD

1. How do members interpret the word “effects” as stated in the current SFFAS 15, par. 3? For example, should effects be non-financial, financial, or both types?
2. What does “forward-looking” mean to you?
 - a. Are challenges for the coming year and short-term actions to address such challenges sufficiently forward-looking? What time horizon would members expect agencies to consider in preparing MD&A?
 - b. Are members interested in distinguishing between short and long-term potential future effects? If so, should guidance on selecting an appropriate time horizon be considered? (For example, a social insurance program would likely have a longer time horizon than a regulatory program.)

NEXT STEPS

1. To be determined by Board decisions on forward-looking information in MD&A.
2. Present measurement uncertainty principles to be incorporated into Notes Disclosure principles.

MEMBER FEEDBACK

Please provide responses to the above questions to Ms. Gilliam by **Wednesday, December 12, 2018**, at gilliamr@fasab.gov with a cc to Ms. Payne at paynew@fasab.gov

If you have any questions, please contact Ms. Gilliam at 202-512-7356 or gilliamr@fasab.gov

Risk Reporting

Attachment 1

2017 MD&A

Forward Looking Sections

Tab G

December 2018

Contents

1.	USDA	3
2.	Commerce	5
3.	DOD	6
4.	DHS	9
5.	Education	9
6.	Energy	13
7.	HHS	20
8.	DHS	22
9.	HUD	30
10.	Interior	34
11.	Justice	37
12.	Labor	39
13.	State	43
14.	DOT	44
15.	Treasury	45
16.	VA	47
17.	EPA	50
18.	NASA	53
19.	USAID	54
20.	GSA	58
21.	NSF	60
22.	NRC	61
23.	OPM	64
24.	SBA	66
25.	SSA	69

1. USDA

pgs. 20; 23

Future Demands, Risks, Uncertainties, Events, Conditions, and Trends

Farmers and ranchers operate in highly competitive markets, both domestically and internationally. Rapid shifts in consumer demands associated with quality, convenience, taste, and nutrition dictate that farming, ranching, and marketing infrastructures become more fluid and responsive. National security is a significant, ongoing priority for the U.S. Department of Agriculture (USDA). USDA science research, education, and extension services will continue to be the foundation for understanding developments and making advances in solving agricultural and societal challenges. USDA is working with the U.S. Department of Homeland Security to help protect agriculture from intentional and accidental acts that might impact America's food supply or natural resources.

EXTERNAL FACTORS THAT CHALLENGE USDA'S ABILITY TO ACHIEVE ITS GOALS INCLUDE THE FOLLOWING:

- Weather-related hardships, including disasters related to the increasing intensity and duration of extreme weather and climate change, both domestically and internationally;
- The risk of catastrophic fire, depending on weather, drought conditions, and the expanding number of communities in the wildland-urban interface;
- Non weather-related hardships and other uncontrollable events, both domestically and internationally;
- Domestic and international macroeconomic factors, including consumer purchasing power, the strength of the U.S. dollar, and political changes abroad that could impact domestic and global markets greatly at any time;
- Sharp fluctuations in farm prices, interest rates, and unemployment that could impact the ability of farmers, other rural residents, communities, and businesses to qualify for credit and manage debt;
- The impact of future economic conditions and actions by a variety of Federal, State, and local Governments that could influence the sustainability of rural infrastructure;
- The increased movement of people and goods, which provides the opportunity for crop and animal pests and diseases to move quickly across domestic and international boundaries;
- Potential exposure to hazardous substances, which may threaten human health as well as the environment; and
- The ability of the public and private sectors to collaborate effectively on food safety, security, and related emergency preparedness efforts.

USDA assessed its financial management systems and internal controls over the effectiveness and efficiency of operations and compliance with applicable laws and regulations as of September 30, 2017, and financial reporting as of June 30, 2017. The assessment included the safeguarding of assets and compliance with applicable laws and regulations in accordance with the requirements of Office of Management and Budget (OMB) Circular No. A-123, Management's Responsibility for Enterprise Risk Management and Internal Control.

2. Commerce

pgs. 10-11

LOOKING FORWARD

The Department of Commerce is committed to creating the conditions for economic growth and opportunity. Much work has been completed and the Department remains committed to addressing continuing challenges, as well as new and emerging issues, as it strives to achieve the Department's strategic objectives.

Despite many gains and achievements, the Department recognizes areas of major potential impact on the effectiveness and efficiency of its programs and operations. The Department has undertaken and planned extensive actions to address these challenges, and is committed to making further progress.

As a new decade draws closer on the horizon, the Department will continue to work with businesses, universities, communities, and the Nation's workers to promote job creation, economic growth, and sustainable development. Departmental leadership is dedicated to making informed decisions when establishing program priorities as the Nation navigates familiar territories, and builds on core achievements; all while facing great uncertainty and emerging challenges. Balancing risk and opportunity in key programs, operations, and strategies will be a key contribution to the overall improved standards of living for Americans.

BALANCING RISK AND OPPORTUNITY

Departmental managers and leaders handle complex and risky mission and mission support activities, such as preparing for and responding to natural disasters, and managing safe information technology (IT) systems. While it is not possible to eliminate all uncertainties in these types of projects, there are strategies that can help plan and manage them.

One such strategy used at the Department is Enterprise Risk Management (ERM). Recognized and cited by the U.S. Government Accountability Office (GAO) as a good practice for managing risk, the Department's ERM effort provides ways to better anticipate and manage risk across the organization. Successful ERM programs find ways to develop an organizational culture that allows employees to openly discuss and identify risks, as well as potential opportunities to enhance organizational goals or value. For example, Departmental officials sought to embed a culture of risk awareness across the Department by defining cascading roles of leadership and responsibility for ERM across the Department and for its 12 bureaus. Additionally, the Department leveraged this forum to share bureau best practices; develop a common risk lexicon; and address cross-bureau risks, issues, and concerns regarding ERM practice and implementation. These roles should support the ERM program and promote a risk management culture. They also help promote transparency, oversight, and accountability for a successful ERM.

Consideration of the Department's changing priorities and emerging risks is particularly valuable in helping the Department to focus its oversight efforts. The Department's ERM Framework is designed to facilitate a risk-based approach to its day-to-day business. The Department annually utilizes several processes and sources to identify, manage, and mitigate fraud risks. These process and sources include, but are not limited to, the Agency Risk Profile, GAO High-Risk List, and Mission Critical Programs and Activities List.

EMERGING CHALLENGES

The underlying strength of the Department is the ability of its bureaus to work together and share expertise to drive economic growth. This same collaborative effort is leveraged to address the challenging areas that remain a priority for Department leadership. Securing Department systems and information, deploying a Nationwide Public Safety Broadband Network, and modernizing the Department's legacy IT systems and improving data quality are examples of areas for improvement that benefit from collaborative solutions. The Department is dedicated to developing processes to facilitate this need, which include conducting Milestone Review Boards (MRBs). The MRB is a Department-level multi-disciplinary meeting that reviews performance indicators and progress against milestones. The board meetings direct further data collection and/or course corrections to keep critical projects on track. A balance of oversight and proactive risk management will be an ongoing process to address these challenge areas.

3. DOD

pgs. 9; 37-38

U.S. Department of Defense Agency Financial Report for FY 2017

LOOKING FORWARD

The Department's first priority is continuing to improve military readiness as it builds a more lethal force. This will be accomplished through the execution of a multi-year plan to fill in the holes caused by trade-offs made during 16 years of war, nine years of continuing resolutions, and [Budget Control Act](#) caps as well as to prepare for sustained future investment. This effort prioritizes a safe and secure nuclear deterrent and the fielding of a decisive conventional force, while also retaining irregular warfare as a core competency. The Department is focused on strengthening the Military Forces to ensure that the American military edge remains and endures well into this century and beyond.

The Department's second priority is strengthening and attracting new partners. Alliances and multinational partnerships, such as the North Atlantic Treaty Organization and the Defeat-ISIS Coalition, provide avenues for peace and foster the conditions for economic growth with countries sharing the same vision. Strong alliances also serve to temper the plans of those who would attack other nations or try to impose their will over the less powerful. The Department must seek to engage and collaborate with nation states choosing to be strategic competitors, such as Russia and China, while also being prepared to confront inappropriate behavior should they choose to act contrary to American interests or threaten the security of U.S. allies.



A U.S. Air Force member cooks a snake during Cope North 17 survival training at Andersen Air Force Base, Guam, Feb. 17, 2017. Cope North is a long-standing Pacific Air Forces-led exercise designed to enhance multilateral air operations between the U.S. Air Force, U.S. Navy, Japan Air Self-Defense Force and Royal Australian Air Force.

Photo by Airman 1st Class Christopher Quail

The Department's third priority is bringing business reforms to the Department of Defense. This effort focuses on instilling budget discipline and effective resource management, developing a culture of rapid and meaningful innovation, streamlining requirements and acquisition processes, and promoting responsible risk-taking and personal initiative. Examples of current and upcoming business reform initiatives include the Department's preparations for its first full-scope financial statement audit in Fiscal Year 2018, the efforts to modernize the defense travel system, and the efforts to improve the efficiency of information technology business operations. With these and other efforts, the Department demonstrates its devotion to gaining full value from every taxpayer dollar spent on defense, thereby earning the trust of the Congress and the American people.

In the pursuit of these efforts, the Department recognizes that it is critical to preserve its most enduring and competitive advantage – the Department's people. The Department is fully committed to improving the recruitment and retention of the brightest and most committed young men and women to make the Department the most rewarding environment it can be for those who choose to serve.

Management's Discussion and Analysis

9

INTERNAL CONTROLS OVERVIEW

ENTERPRISE RISK MANAGEMENT AND INTERNAL CONTROL PROGRAM

The Office of the Under Secretary of Defense (Comptroller) (OUSDC) Office of the Deputy Chief Financial Officer and the Office of the Deputy Chief Management Officer, in compliance with the [Federal Managers' Financial Integrity Act of 1982](#), lead the Department's effort in fulfilling the Department's Enterprise Risk Management (ERM) and Internal Control Program (ICP) responsibilities. The Department of Defense (DoD) is committed to ensuring an effective system of internal controls for business processes to provide reasonable assurance that the Department's mission is met and to support the DoD Component objectives. The DoD ERM/ICP holds both operational and financial managers accountable to ensure they are effectively managing risks and internal controls in their areas of responsibility. In accordance with the Office of Management and Budget [\(OMB\) Circular No. A-123](#), "Management's Responsibility for Enterprise Risk Management and Internal Control," and the Government Accountability Office (GAO) Standards for Internal Control in the Federal Government ("[Green Book](#)"), the Department continuously strives to integrate risk management and effective internal control into existing business activities. All Components are required to conduct a robust programmatic approach to establish and assess internal controls for the conduct of all financial and non-financial mission-essential operations. DoD Components that produce stand alone financial statements are also required to provide financial reporting assurance.



The goal of the ICP is to support the DoD's mission by implementing appropriate operational controls to identify, prioritize, and mitigate operational and financial risk before it negatively impacts the mission. The Department advocates a "tone-at-the-top" approach, with emphasis on the importance of the internal control program, which permeates the entire DoD culture. Per DoD Instruction ([DoDI 5010.40](#)), each DoD Component uses its leadership's mission requirements as a baseline for executing assessments of key functional, operational and financial areas. DoD Components rely upon appointed assessable unit managers for each key operational and financial area to identify and report internal control opportunities for improvement as well as deficiencies for review and comment by leadership. Another goal of ICP is to integrate the audit and remediation teams to improve the Department's ability to effectively respond and mitigate risks.

The Department's ICP works to ensure that Department-wide deficiencies are reported timely and monitors the corrective action plan efforts through the DoD Components. The status of deficiencies are aggregated and reported in the DoD Statement of Assurance. This process leverages OMB Circular No. A-123 and ensures that the Department has the appropriate oversight to prioritize and mitigate the Department's systemic, operational, and financial risks.

Types of Material Weaknesses

The Department's management uses the following criteria to classify conditions as material weaknesses:

- Merits the attention of the Executive Office of the President and the relevant Congressional oversight committees;
- Hinders management's ability to prevent or detect a material misstatement of the financial statements;
- Impairs fulfillment of essential operations or mission;
- Identified as a "high risk" by GAO or as a "management and performance challenge" by the DoD Inspector General;
- High impact of occurrence in terms of loss of dollars and/or loss of life;
- Significantly weakens established safeguards against waste, loss, unauthorized use or appropriation of funds, property, other assets, or conflicts of interest;
- Constitutes noncompliance with laws and regulations;
- Nonconformance with government-wide, financial management system requirements; or
- Identified by independent public accountants as material weaknesses.

4. DHS

pg. 24

Financial Stewardship: DHS is expending resources to raise the baseline of our security posture, necessitating the continued evolution of the business processes and systems supporting mission delivery. With the magnitude and scope of threats continuing to grow and change every day, DHS is further maturing our resource agility and efficiency. **Enterprise risk management** (ERM) is foundational to delivering on the DHS mission and objectives, and integrated into each phase of the planning to execution processes. A critical aspect of the Department's integrated ERM approach is the continued maturation of a robust internal control program, ensuring taxpayer funds are expended as efficiently and effectively as possible while preventing and detecting fraud, waste and abuse. Using a risk based approach and the U.S. Government Accountability Office (GAO) criteria for standards for internal control, DHS assessed its internal control maturity by Component and key deficiency category. This Internal Control Maturity Model baseline served as the Department's starting point to measure substantial progress in addressing weaknesses and sustaining a strong control environment. The Department's comprehensive enterprise approach to remediation are driving and sustaining continuous progress, as evidenced by the ability to downgrade the Property material weakness this fiscal year. DHS will continue demonstrating strong financial stewardship, executing the multi-year strategy to remediate our two remaining material weaknesses in Financial Reporting and Information Technology controls and achieve a clean Internal Control over Financial Reporting opinion.

- 24 -

FY 2017 Agency Financial Report

5. Education

pgs. 6; 7; 8-10

Looking to the future, the Department plans to focus in the key areas of: (1) supporting state and local efforts to improve learning outcomes for all P-12 students in every community; (2) expanding postsecondary education options and improving outcomes to foster economic opportunity and informed, thoughtful, and productive citizens; (3) strengthening the quality, accessibility, and use of education data through better management, increased privacy protections, and transparency; and (4) reforming the effectiveness, efficiency, and accountability of the Department.

Looking Ahead: Every student—regardless of background or circumstance—deserves an opportunity to fulfill his or her potential. High-quality educational opportunities are critical when it comes to achieving that goal, especially for the most vulnerable students and communities. The **President's FY 2018 Budget** is an indication of the commitment to support the most vulnerable. Level funding of the **Title I Grants program** totaling \$14.9 billion would be allocated to local educational agencies' programs to support state and local efforts to ensure that more than 25 million students in high-poverty schools have access to rigorous coursework and teaching. Additionally, the federal investment in the **Individuals with Disabilities Education Act** formula grant programs at \$12.7 billion would support services to 6.8 million children with disabilities and to states to design and implement special education program improvement efforts under the Department's **Results Driven Accountability** framework. The **English Language Acquisition program** would receive \$736 million to implement effective language instruction programs designed to help English learners attain English language proficiency.

FORWARD-LOOKING INFORMATION

This section summarizes information pertinent to the Department's future progress and success.

DIRECT LOAN PROGRAM

The Department's largest program, the William D. Ford Federal Direct Loan (Direct Loan) program, provides students and their families with funds to help pay for their postsecondary education costs. Easing the burden of student loan debt is a significant priority for the Department. The following is a discussion of (1) the steps the Department has taken to ensure that student debt is manageable and (2) the risks inherent in estimating the cost of the program.

Managing Student Loan Debt

Each year, federal student loans help millions of Americans obtain a college education—an investment that, on average, has high returns. While the average return to a college degree remains high, substantial inequities in outcomes exist, and some students leave school poorly equipped to manage their debt, whether

due to limited labor market opportunities or high debt.

Traditionally, federal loans of this type have had flat 10-year repayment schedules, making it difficult for borrowers to pay at the start of their career when their salaries are lower. The recent expansion of income-driven repayment plans grants students the opportunity for greater financial flexibility as it pertains to their monthly payment. For more details on these plans, visit FSA's [How to Repay Your Loans Portal](#).

As the labor market declined during the financial crisis of 2008, serious challenges in student debt repayment came to the forefront of conversations. The availability of income-driven repayment plans like Pay As You Earn (PAYE) and an improving labor market has led to substantial improvement, signifying Departmental progress in the focus area of higher education, namely, its efforts to innovate loan program guidelines in order to make student loan debt more manageable for borrowers across the board. Recent trends in student loan repayment data show that:

- More than 80 percent of Direct Loan recipients with loans in repayment are current on their loans.

- Growing numbers of borrowers are taking action and responsibility with regard to their student loans when they are in need of modifications and support. As of June 2017, nearly 6.3 million Direct Loan recipients were enrolled in income-driven repayment plans, representing a 19 percent increase from June 2016 and a 62 percent increase from June 2015.

The Department has made progress in this area and continues to work relentlessly to make student debt more manageable. Looking to the future, the Department will build on its recent successes by:

- Conducting significant outreach efforts to inform student loan borrowers of their repayment options, including the protections provided by income-driven repayment plans.
- Ensuring that borrowers have access to an affordable repayment plan, high-quality customer service, reliable information, and fair treatment.
- Continuing to support additional tools like the College Scorecard and Financial Aid Shopping Sheet to increase transparency around higher education costs and outcomes, in an effort to help students and families make informed decisions before college enrollment.

Managing Risks and Uncertainty Facing the Direct Loan Program's Cost Estimates

Direct Loan program costs are estimated consistent with the requirements of the *Federal Credit Reform Act of 1990*. Under the Act, the future costs and revenues associated with a loan are estimated for the entire life of the loan, up to 40 years in this case. The actual performance of a loan cohort tends to deviate from the estimated performance during that time, which is not unexpected given the inherent uncertainty involved in developing estimates. There are four types of risk that make estimating lifetime program costs a difficult task.

Legislative, Regulatory, and Policy Risk

There are inherent risks from the possibility that the cost structure of the Direct Loan program may be altered through legislative, regulatory, or administrative action. In addition, recent legislative, regulatory, and policy

action may be difficult to interpret with regard to effects on financial modeling and estimation, given the lack of actual trend data availability. Some examples of current risks include the following:

Income-Driven Repayment Plans: Several new income-driven repayment plans have been introduced in recent years, including Income-Based Repayment, PAYE, and Revised Pay As You Earn. In general, the proliferation of plans has made income-driven repayment terms more generous (and more costly to the government) and made the plans available to a greater number of borrowers. Having more plans complicates repayment plan selection, since the tradeoffs between available plans vary by borrower and may not always be entirely clear. Selected comparisons between projected originations and borrower repayments under the different income-driven repayment plans are available on the **Department's website**. The Department has also engaged in outreach campaigns to broaden borrower awareness of these plans. However, future commitment to market and increased participation in these plans are areas of uncertainty.

Public Service Loan Forgiveness: Enacted in 2007, the Public Service Loan Forgiveness (PSLF) program allows a Direct student loan borrower to have the balance of their Direct student loans forgiven after having made 120 qualifying monthly payments under a qualifying repayment plan, while working full time for a qualifying public service employer (such as government or certain types of nonprofit organizations). In general, forgiveness provided via PSLF raises the cost of the Direct Loan program; however, there is still uncertainty as to how many borrowers will take advantage of the program. Much of this uncertainty arises because borrowers do not need to apply for the program until after having made the 120 qualifying monthly payments. While data on current applications is helpful to gauge potential forgiveness, it may not be representative of final participation figures. In addition, since the first date by which a borrower could receive forgiveness under this program is October 1, 2017, the Department does not yet have a robust set of actual forgiveness data. The available data on borrowers who have already certified their employment, nearly 740,000 borrowers as of September 2017, is less valuable than it appears since it does not track breaks in their repayment or qualifying employment. The Department continues to remain informed on, and manage the risk that may arise in relation to, the uncertainty about the effect of further borrower outreach on boosting participation in the PSLF program.

Borrower Defense: In May 2015, Corinthian Colleges, Inc. (Corinthian), a publicly traded company operating numerous postsecondary schools that enrolled over 70,000 students at more than 100 campuses nationwide, filed for bankruptcy under deteriorating financial conditions and while subject to multiple state and federal investigations. The Department received thousands of claims for student loan relief from Corinthian students under a provision in the *Higher Education Act of 1965* (HEA) referred to as "borrower defense." Valid borrower defense claims would lead to the discharge of borrower debt, thus increasing the cost of the Direct Loan program to taxpayers. However, it is unknown how many of the claims are valid. Since Corinthian, several other postsecondary schools have closed under similar circumstances, including ITT Technical Institute.

In August 2015, the Department initiated a rulemaking process to establish a more accessible and consistent borrower defense standard to clarify and streamline the borrower defense process to protect borrowers. The legality of this rule has since been challenged in court (*California Association of Private Postsecondary Schools v. DeVos*) and certain provisions of the rule have been subsequently delayed. In addition, the Department has initiated a new rulemaking process to consider potential changes to the original rule. The overall level of activity that could lead to valid borrower defense claims, particularly in the for-profit postsecondary sector, coupled with the uncertainty as to the framework of the final rule, make projections as to the financial impact exceedingly difficult. The Department continues to monitor instances of this risk factor to its programs.

Estimation Risk

Actual student loan outcomes may deviate from estimated student loan outcomes, which is not unexpected given the long projection window of up to 40 years. The Direct Loan program is subject to a large number of future borrower level events and economic factors that heavily impact the ultimate cost of issued loans. For example, estimates that need to be made for loans originating in FY 2017 include how long students will remain in school; what repayment plan will be chosen; whether the loan will be consolidated; whether the borrower will die, become disabled, bankrupt, or have another claim for discharge or forgiveness (closed school, borrower defense, etc.); if the loan will go into deferment or forbearance; if the loan will go into default and, if so, what collections will be received on the defaulted loan; and, if the loan is in income-driven repayment, what the borrower's employment (public sector or not) and income and family status will be over

the next 25 years. These types of projections are not only extremely difficult to make but also are subject to change if future student behaviors deviate from past experience. Changes in private student loan markets, such as the recent increase in refinancing of federal student loans into private student loans, also add a layer of uncertainty to student loan estimates. Lastly, the Direct student loan portfolio has grown from around \$380 billion in FY 2011 to around \$1.06 trillion as of the end of FY 2017. This growth naturally results in increased re-estimates, since a re-estimate worth 1 percent of the portfolio today would be more than twice as large as a similar re-estimate in FY 2011 (\$10.6 billion vs. \$3.8 billion).

Macroeconomic Risk

The ultimate amount, timing and value of future borrower repayments under the Direct Loan program are heavily affected by certain economic factors, especially since the introduction of income-based repayment plans. Some examples include the following:

Interest Rates: Direct Loan subsidy estimates are very sensitive to changes in interest rates. Recent interest rate history has been atypical, as interest rates have continued to remain lower than their historical averages. Under the current program terms, the fixed borrower rates for direct loans are established in advance of the upcoming school year, while the Treasury fixed interest rate on borrowings to fund those loans is not set until after those awards are fully disbursed, which can be as much as 18 months later. Unexpected changes in interest rates during this time can significantly impact the subsidy cost of these loans.

Unemployment: The financial crisis of 2008 and ensuing spike in unemployment rates had a dramatic effect on both student loan volume and student loan performance. Student loan volume peaked along with unemployment, as many displaced workers sought higher education opportunities. Student loan performance suffered as many borrowers repaying their loans were left with much less disposable income with which to make their loan payments. For example, the default rate for students was at a high of 14.7 percent for loans entering repayment in 2010, while the most recent rate is 11.5 percent for loans entering repayment in 2014. While recessions and economic downturns are cyclical phenomena, their exact timing and impact on the cost estimates remain an area of uncertainty.

Wage Growth: The estimated costs of income-driven repayment plans are largely dependent on trends in observed wage growth. To the extent that future wage growth deviates significantly from prior wage growth,

actual costs of income-driven repayment plans may deviate from projected estimated costs. The Department continues to manage risks in this area by continuing to learn about its borrower base and remain informed on such labor market statistics.

Operational Risk

Unforeseen issues in administering and servicing student loans may impact the cost estimates. For example, in March 2017, a tool used to automatically transfer a family's tax information to both student aid applications and income-driven repayment (IDR) plan applications was taken down due to security concerns. Although usage of the tool for IDR recertification has since been brought back up, it is yet uncertain what, if any, impact this outage may have had on student loan cost estimates. However, this example highlights that there is an inherent risk that future, unpredictable disruptions in the administrative status quo may impact student loan cost estimates.

CONTINUOUS IMPROVEMENT

Improving critical infrastructure, systems, and overall capacity, and ensuring sound strategic decision making regarding allocation of resources are essential to the Department's future progress and success. Exploring the expanded use of shared services and incorporating enterprise risk management into Department decision making are two of the Department's key initiatives.

Shared Services

The Department of Education uses shared services where feasible and practical, including payroll and travel. The Department will explore other options to further leverage shared services for other mission support areas in the coming years.

Enterprise Risk Management

The Department plans to implement Enterprise Risk Management (ERM) practices by integrating its existing risk management processes and governance bodies into a suitable ERM framework and including risk as a central element in all critical day-to-day and strategic decision-making activities. The Department will also develop a more risk-aware culture that facilitates increased focus on the wide range of risks the Department faces and fosters more open discussions about how those risks might impact the accomplishment of the Department's mission and whether allocation of resources is aligned to best mitigate risks to an acceptable level. The Senior Management Council will oversee the implementation of ERM in accordance with OMB Circular A-123, *Management's Responsibility for Enterprise Risk Management and Internal Control*.

6. Energy

Pgs. 30-39

The Reports Consolidation Act of 2000 requires the Inspector General (IG) to prepare an annual statement summarizing what they consider to be the most serious management and performance challenges facing the Department. These challenges are included in the Other Information section of this report. Similarly, in FY 2017 the GAO issued its biennial “High Risk Series” update which included DOE management of major contracts and programs with costs of \$750 million or greater and the U.S. Government’s environmental liability for which DOE shares responsibility with other federal agencies.

The Department, after considering all critical activities within the agency and those areas identified by the IG and GAO, has identified eight management priorities that represent the most important strategic management issues facing the Department now and in the coming years. The IG-identified challenges, GAO-identified high-risk issues, and DOE management priorities are presented in the table at the end of this section. In accordance with the

DOE MANAGEMENT PRIORITIES	IG CHALLENGE AREAS FY 2018	GAO HIGH RISK LIST - GAO-17-317 (as of February 2017, updated every two years)
Contract and Major Project Management	Contract Oversight a. Contractor Management b. Subcontract Management	Contract Management for the NNSA and EM Management of major (\$750M+) projects and programs
Security	Safeguards and Security	
Environmental Cleanup	Environmental Cleanup	U.S. Government’s Environmental Liability
Nuclear Waste Disposal	Nuclear Waste Disposal	
Cybersecurity	Cybersecurity	
Infrastructure	Infrastructure Modernization	
Human Capital Management		
Safety		
	Stockpile Stewardship	

Staff presents two of Energy’s eight management priorities:

CONTRACT AND MAJOR PROJECT MANAGEMENT

Key Challenges: The Department is the largest civilian contracting agency in the Federal Government and spends approximately 90% of its annual budget on contracts to operate its scientific laboratories, engineering and production facilities, and environmental restoration sites and to acquire capital assets. Contractors at DOE sites and laboratories perform critical missions that include maintaining the nuclear weapons stockpile, cleaning up radioactive and hazardous waste resulting from the legacy of the Manhattan Project, and conducting some of the world's most sophisticated basic and applied energy and scientific research activities. To conduct these missions, the Department must manage some of the largest, most complex capital asset projects in either the public or private sector.

In 1990, GAO designated DOE's Contract Management—which has included both contract administration and project management—as a high-risk area because of historical challenges with project execution at DOE. Since that time, DOE has made significant improvements in contract and project management. For example, from 2015 through 2017, DOE completed 88% of its construction projects successfully, with no more than a 10% increase over the original cost baseline.

On February 15, 2017, the GAO published its latest High-Risk List Update. GAO continued its focus on major contracts and projects—those with an estimated cost of \$750 million or greater—executed by the National Nuclear Security Administration (NNSA) and the Office of Environmental Management (EM), which have presented significant management challenges. GAO acknowledged DOE's progress in monitoring the effectiveness and sustainability of corrective actions, while noting the challenges that EM and NNSA face in ensuring they have the capacity (both people and resources) to mitigate risks.

Departmental Initiatives: In FY 2017, the Department continued to make significant progress in addressing this management priority. In particular, DOE is addressing the GAO February 2017 High-Risk Series report to Congress that identified five criteria that DOE must focus on to improve contract and major project management, including:

- Sustain the leadership commitment to address its contract and project management challenges;
- Commit sufficient people and resources to resolve its contract and project management problems;
- Ensure its corrective action plan and the initiatives needed to address underlying causes of contract and project management problems are up-to-date and address root causes;
- Demonstrate progress in implementing corrective measures, especially measures intended to improve the performance of major projects; and
- Monitor and independently validate the effectiveness and sustainability of its corrective measures, particularly for major projects.

To address these criteria, DOE senior leadership launched a comprehensive effort to identify reforms to improve contract and project management. As a result, DOE is adopting a more risk-based approach to project management which will enable the Department to maintain its high level of performance in managing projects while focusing greater resources and senior-level attention on complex, high-cost projects, which are the current focus of GAO's High-Risk List. Similarly, DOE is building upon existing efforts to enhance the

effectiveness of our Management and Operating (M&O) contractors, many of which execute DOE's projects. DOE will use a risk-based approach to identify reforms that are appropriate for individual contractors and sites with consideration to the mission, as well as worker and public safety.

Over the next two years, DOE will continue its efforts to address the GAO criteria to improve contract and major project management, including the following:

- Improving acquisition planning for our M&O and other major contracts to ensure that DOE has a firm understanding of contract requirements, which will enable DOE to more effectively hold contractors accountable and help ensure that contract objectives are met;
- Completing reforms of National Laboratory Policies consistent with recommendations from the DOE Regulatory Reform Task Force;
- Issuing guidance to strengthening cost estimating and the analysis of alternatives to better meet mission needs;
- Improving the quality of enterprise-wide cost information available to DOE managers and key stakeholders;
- Applying DOE's enhanced contract and project management practices to the Department's major legacy projects; and
- Implementing the requirements of the new Program (Project) Management Improvement Accountability Act (PMIAA), to include new DOE program management policy.

ENVIRONMENTAL CLEANUP

Key Challenges: For over 25 years, EM has worked to clean up the environmental legacy of five decades of nuclear weapons production and government-sponsored energy research. While significant progress has been made, some of the highest risk and most technically complex work still remains.

Technical and programmatic risks and uncertainties are an inherent part of complex cleanup projects. Characterization of legacy waste sites is performed in conjunction with planning and executing cleanup activities, such as deactivating and decommissioning facilities, removing hazardous materials, stabilizing waste streams to prevent additional environmental damage, and restoring the sites to conditions required by legal agreements. Cleanup activities can last for decades and often require first-of-a-kind solutions. Furthermore, the legacy of the Manhattan Project, Cold War, and other nuclear fuels programs includes thousands of remaining excess contaminated facilities currently within the EM Program, and many more facilities identified in other DOE programs.

EM's cleanup work at most sites is governed by one or more regulatory agreements or court orders that establish the scope of work to be performed and the dates by which specific milestones must be accomplished. As a result, the duration and diversity of past research development, testing, and production, creates a level of uncertainty about the amount and composition of waste and the nature and extent of environmental contamination. Initial regulatory milestones were developed based on the best available information about a site's condition, with the understanding that further characterization would be needed. As the scope of the potential cleanup work is better defined, EM shares updated characterization data to negotiate or revise milestones and remedy decisions with the U.S. Environmental Protection Agency (EPA) and state regulators, with stakeholder involvement.

Departmental Initiatives: EM is pursuing numerous initiatives to improve its performance. Specifically, the EM Program:

- Continues to seek opportunities to increase efficiency and performance to ensure maximum cleanup value for every dollar invested in the EM Program ;
- In accordance with applicable statutes and implementing regulations, evaluates federal facility agreement cleanup milestones, permits, and decisions with regulators to ensure they protect human health and the environment while appropriately balancing cost;
- Continues to develop and deploy new and innovative technologies, approaches, and modeling capabilities resulting in significant improvements in safety and cost and schedule savings;
- Strives to identify opportunities to make strategic investments to reduce life-cycle costs while minimizing project and program schedules. Specific goals include:
 - Completing the Technology Development Program Plan and continuing with its implementation;
 - Integrating HQ and site assessment plans to allow field offices to better prepare for and support oversight activities and to maximize benefit for assessments for HQ and the field;
 - Shifting up to 10% of existing Headquarters (HQ) full-time equivalents (FTEs) to the field over the next five years, using attrition and incentivizing transitions to the field as appropriate;
 - Implementing the Direct Feed Low-Activity Waste strategy at the Office of River Protection and continue those activities necessary to resolve technical issues associated with the Pretreatment and High-Level Waste facilities;
 - Continuing to focus on risk reduction ensuring cleanup activities are safe, environmentally

- responsible, cost effective, efficient, and prioritized;
- Partnering with national laboratories, industry, academia, and the U.S. Army Corps of Engineers to ensure the best scientific and engineering resources are integrated into decision-making and the selected technologies, design, and construction approaches help reduce risk, and accelerate project completion for new projects;
 - Improving acquisition planning practices by focusing on achieving early consensus among key stakeholders about the acquisition strategy; and
 - Strengthening the integration of acquisition, budget, and project management processes so that contract statements of work and deliverables are based on clear project requirements and robust front-end planning and risk analysis. EM is also ensuring nuclear safety requirements are addressed early and modifications to the contract and project baseline are managed through strict change-control processes.
- Furthermore, EM sites at Richland, Office of River Protection, Savannah River, Portsmouth, Paducah, Oak Ridge, West Valley, Carlsbad, Idaho, and Moab have signed partnering agreements with their major contractors. Partnering agreements create win-win scenarios where both the federal and contractor staff understand and respect the rules of engagement and build better business relationships. EM is working to build stronger relationships with oversight organizations to improve communications and demonstrate transparency and accountability in EM contract and project management;
 - DOE published its Report to Congress, "*Plan for Deactivation and Decommissioning of Nonoperational Defense Nuclear Facilities*," in December 2016 that provided a qualitative assessment of risks posed by excess facilities and defined the scope of the challenge. In response to this risk assessment effort, DOE developed a plan to inspect and evaluate the higher risk process-contaminated excess facilities to determine if conditions had changed since the prior inspection in FY 2008, to update disposition estimates, and to recommend next steps in preparing facilities for disposition; and
 - DOE completed facility inspections at Lawrence Livermore National Laboratory (LLNL) in Livermore, California, and the Y-12 National Security Complex (Y-12) in Oak Ridge, Tennessee, in FY 2016 and at the Los Alamos National Laboratory (LANL) and at the Savannah River Site, in FY 2017. In addition, NNSA and EM received funding in FY 2017 to begin characterization and stabilization activities for facilities at LLNL and Y-12.

7. HHS

pg. 19; 28

LOOKING AHEAD TO 2018

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HHS accomplishes its mission through programs and initiatives that cover a wide spectrum of activities. Eleven OpDivs, including eight agencies in the U.S. Public Health Service and three human services agencies, administer HHS's programs. While HHS is a domestic agency working to protect and promote the health and well-being of the American people, the interconnectedness of our world requires that HHS engage globally to fulfill its mission. In addition, StaffDivs provide leadership, direction, and policy guidance to the Department.

As described in the Performance Goals, Objectives and Results section, concurrent with the *FY 2019 President's Budget* submission, HHS will update its Strategic Plan to align with the priorities of this Administration. The Strategic Plan's goals and related objectives will drive HHS's service to the American people. Along with a new Strategic Plan, the next *President's Budget* submission will also include a new set of APGs. These goals are a set of ambitious but realistic performance objectives that the Department will strive to achieve within a 24-month period. These new APGs will use the knowledge gained through collaboration and data-driven reviews of past processes to deliver results to the public.

While the *Patient Protection and Affordable Care Act* (PPACA) is established law, health care reform to better serve the American people is expected. HHS remains committed to fostering a high-quality health care system that effectively and efficiently serves our citizens. We aim to facilitate a patient-centered approach that offers ample consumer choice and lower overall costs to stakeholders. Patients, families, and doctors should be in charge of the medical decisions impacting them. HHS will continue to work with states to advance their health-related programs, and to improve the accessibility and affordability of health care.

The Message from the Acting Secretary addresses one of the most pressing issues facing the American public—the ongoing opioid crisis. Acting Secretary Hargan took action on October 26, 2017, by declaring a nationwide public health emergency. According to the CDC, more than 175 Americans die every day from drug overdoses, with 91 of those deaths occurring specifically from opioids. HHS developed a five-point strategy to combat opioids, which includes the following steps:

- Improve access to prevention, treatment, and recovery support services;
- Target the availability and distribution of overdose-reversing drugs;
- Strengthen public health data and reporting;
- Support cutting-edge research on addiction and pain; and
- Advance the practice of pain management.



Acting Secretary Hargan signs public health emergency declaration in response to the opioid crisis.

The Administration has made combating opioid abuse and fighting addiction an Administration-wide effort and priority, and the Budget submission reflects this commitment. HHS will continue to invest in activities to fight opioid abuse, provide funding for substance abuse treatment, and seek to improve prescribing practices and the use of medication-assisted treatment.

Department of Health and Human Services | 19

In addition to the OMB-led efforts to implement the FRDAA, HHS also has other activities underway to meet the intent of the new law. First, in accordance with the law and OMB Circular A-123, *Management's Responsibility for Enterprise Risk Management and Internal Control*, HHS's internal control assessments include the consideration of fraud and **financial management risks**, as well as the control activities designed to mitigate these risks. Second, HHS is reviewing and updating its financial policies, as needed, which will help to address the law's requirements. Third, HHS continues to take steps to implement leading practices in fraud risk management, per the Government Accountability Office's (GAO) *Fraud Risk Management Framework and Selected Leading Practices* published in July 2015. As recommended by GAO, HHS is assessing the federally facilitated exchange's fraud risk, leveraging GAO's fraud risk framework to identify and prioritize key areas of potential risk. When this assessment is complete, HHS will apply the lessons learned in assessing this program to fraud risk assessments of other programs.

8. DHS

pg. 4, 7, 8, 10, 11, 14, 15, 19, 21, 23

Mission 1: Prevent Terrorism and Enhance Security

Preventing a terrorist attack in the United States remains the cornerstone of homeland security. Our vision is a secure and resilient Nation that effectively prevents terrorism in ways that preserve our freedom and prosperity.

Looking Forward

The United States has made significant progress in securing the Nation from terrorism. Nevertheless, the evolving and continuing threat from terrorists remains, as witnessed by events around the globe. The Department and its many partners, which includes international and federal, state, local, tribal and territorial governments, public and private sectors, and communities across the country, have strengthened the homeland security enterprise to better mitigate and defend against these dynamic threats. Below are a few areas that advance our efforts to achieve the Department's mission of preventing terrorism and enhancing security.

TSA Enhancing Security to Mitigate Checkpoint Gaps: TSA continues to advance our ability to assess potential threats from aviation passengers both in the domestic and international domains. We will continue to improve the Threat Image Projection data quality to ensure the security of the traveling public. Ongoing testing and deployment of new technology to identify threats is underway. Based on the results of these tests, plans will be made to enhance our ability to identify and mitigate checkpoint gaps. In addition, specific improvements are being made to enhance airport perimeter and access security and identity vetting.

Chemical Facility Tiering: Tier 1 and 2 facilities are those chemical facilities that pose the highest risk with respect to vulnerability, consequence, and threat factors. The [CFATS program](#) identifies and regulates high-risk chemical facilities to ensure they have security measures in place to reduce the risks associated with certain chemicals of interest. The challenge is that the number and tier of existing chemical facilities changed in FY 2017 based on a revised methodology enacted at the beginning of FY 2017. These changes in tiering pose a challenge in that the backlog of facilities needing assessments changed dramatically and will have an impact to get all assessments up to date. Moving forward, the Department will look into scheduling and staffing approaches that will prioritize the assessment of all Tier 1 and 2 chemical facilities to achieve an acceptable level of oversight and understanding. DHS anticipates that the tiering for the highest risk chemical facilities will stabilize in FY 2018 as facilities continue to self-report chemicals of interest under the new methodology.

USSS Protecting Critical Infrastructure, Key Leaders, and Events: USSS has numerous efforts underway to meet increasing operational challenges including reducing time to hire, retention initiatives, and technology development. Challenges have been faced with the increased demands on the protective mission in terms of both scope and complexity. Thus the USSS is looking at new and unique methods to address a broad range of areas to include: modernization and support of mission-critical information technology (IT) systems; infrastructure for protective and investigative mission operations; improved staffing and career models to ensure proper work/life balance for agents; new staffing goals and retention initiatives to reduce attrition; and enhancing training infrastructure to meet future needs.

Mission 2: Secure and Manage Our Borders

DHS secures the Nation's air, land, and sea borders to prevent illegal activity while facilitating lawful travel and trade.

Border Patrol Staffing: EO 13767 also addresses increasing staff on the border by requiring that DHS hire an additional 5,000 Border Patrol Agents. In response to this directive, CBP's Human Resource Management (HRM) office has developed a multi-year hiring plan to meet the new staffing requirement for Border Patrol. Of the 5,000 planned agent increase, the first surge is planned for 500 agents in FY 2018 and is in addition to the normal attrition hiring conducted by CBP HRM. This initial hiring surge will lay the foundation in increasing operational control in certain key areas along the border. The goal is to increase and maintain a Border Patrol Agent workforce to attain full operational control of the border. This will be an ongoing challenge to find qualified candidates who can pass the protocols to become a Border Patrol Agent, including a polygraph exam, along with ensuring that those who are hired remain in the Border Patrol and do not move to another law enforcement position within the Federal Government or to the private sector.

Biometric Entry Exit: [EO 13769](#), *Protecting the Nation from Foreign Terrorist Entry into the United States*, addresses challenges in screening and vetting protocols and associated technology and procedures with the visa-issuance and management process. One of the efforts to support this Executive Order is the Biometric Entry-Exit System. The Department will utilize the cloud-based Traveler Verification Service system and supporting information technology infrastructure to analyze and verify travelers' identity using biometric data such as facial and fingerprint recognition. This will allow CBP Officers to assist airline partners and other government agencies to verify the identity of travelers entering and exiting the United States. The Department intends to adapt these innovative air environment technological solutions for land and sea environments.

Looking Forward

The protection of the Nation's borders—land, air, and sea—from the illegal entry of people, weapons, drugs, and other contraband while facilitating lawful travel and trade is vital to homeland security, as well as the Nation's economic prosperity. The global economy is increasingly a seamless economic environment connected by systems and networks that transcend national boundaries. The United States is deeply linked to other countries through the flow of goods and services, capital and labor, and information and technology across our borders. As much as these global systems and networks are critical to the United States and our prosperity, they are also targets for exploitation by our adversaries, terrorists, and criminals. Below are a few initiatives that advance our efforts to secure and manage our borders.

Increases in Border Infrastructure and Technology: [Executive Order \(EO\) 13767](#), *Border Security and Immigration Enforcement Improvements*, requires significant enhancement of border infrastructure and technology. Out year planning has begun to include border barrier system extensions and enhancements and additional assets to include: Integrated Fixed Towers to provide automated, persistent wide area surveillance for the detection, tracking, identification, and classification of illegal entries; Remote Video Surveillance Systems to monitor large spans of the international border; and Cross-Border Tunnel Threat technology to diminish the ability of transnational criminal organizations to gain unobtrusive access into the United States through cross-border tunnels and the illicit use of underground municipal infrastructure.

³ Final results for this measure will be published in the FY 2017-2019 Annual Performance Report in early February 2018 at <https://www.dhs.gov/performance-financial-reports>.

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Mission 4: Safeguard and Secure Cyberspace

Our economic vitality and national security depend on a vast array of interdependent and critical cybernetworks, systems, services, and resources. By statute and Presidential Directive: DHS is the lead for the Federal Government to secure civilian government computer systems; works with industry to defend privately owned and operated critical infrastructure; prevents, detects, and investigates cybercrime; and works with state, local, tribal, and territorial governments to secure their information systems.

Looking Forward

Cyberspace and its underlying infrastructure are vulnerable to a wide range of risk stemming from both physical and cyberthreat hazards. Sophisticated cyber-actors and nation-states exploit vulnerabilities to steal information and money and are developing capabilities to disrupt, destroy, or threaten the delivery of essential services. A range of traditional crimes are now being perpetrated through cyberspace, including banking and financial fraud, intellectual property violations, and other crimes, all of which have substantial human and economic consequences. As information technology becomes increasingly integrated with physical infrastructure operations, there is increased risk for wide-scale or high-consequence events that could cause harm or disrupt services upon which our economy and the daily lives of millions of Americans depend. In light of the risk and potential consequences of cyber-events, strengthening the security and resilience of cyberspace has become an important homeland security mission.

Looking Forward

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program FY 2017. The number of indicators shared through AIS increased from 100,394 in FY 2016 to over 1.2 million in FY 2017. Federal partners participation also grew from 7 agencies in FY 2016 to 25 in FY 2017 with all 23 non-defense CFO Act agencies and two additional agencies participating. Within DHS, all of the department's internal security operations centers were able to connect to AIS through the introduction of a web based platform to share indicators within the agency in real time to protect against known threats. Participation in the program was also extended to state governments, critical infrastructure sectors, and trusted allied nations. The number of non-federal participants increased dramatically from 45 in FY 2016 to 90 in FY 2017. The intent is to continue to grow the quantity of information shared by both DHS and participating entities and further expand the number of partners both domestically and internationally.

National Cybersecurity Protection System: The National Cybersecurity Protection System is an integrated system that delivers a range of capabilities to include intrusion detection and prevention, analytics, and information sharing of malicious activity on federal networks. The system currently detects and blocks threats that are already known by DHS from harming the federal network. While preventing known threats is important, the system currently lacks the capability to identify and block previously unknown threats from entering federal networks. To increase the effectiveness of the system, DHS is currently piloting a program to develop the capability to detect previously unknown malicious activity on a network. This capability would establish a baseline for normal network behavior and traffic and alert DHS to any deviations or abnormalities from that baseline. This pilot program has the potential to enable DHS to discover malicious activity and actors that were previously unknown to the information security community and share it with public and private partners in near real time. The impact would be improved situational awareness of cyberthreats and the ability to block our adversaries most sophisticated attack methods. Challenges with this approach are being able to accurately predict the nature of new threats and the impact they may cause. In addition, there is the challenge to respond in an appropriate fashion without directing limited staff resources unnecessarily to threats that would not have been impactful.

Strengthen National Preparedness and Resilience

Mission 5: Strengthen National Preparedness and Resilience

Despite ongoing vigilance and efforts to protect this country and its citizens, major accidents and disasters, as well as attacks, may occur. The challenge is to build the capacity of American communities to be resilient in the face of disasters and other threats. Our vision of a resilient Nation is one with the capabilities required across the whole community to prevent, protect against, mitigate, respond to, and recover from the threats and hazards that pose the greatest risk.

Looking Forward

The Department coordinates comprehensive federal efforts to prepare for, protect against, respond to, recover from, and mitigate a terrorist attack, natural disaster or other large-scale emergency, while working with individuals, communities, the private and nonprofit sectors, faith-based organizations, and federal, state, local, tribal, and territorial partners to ensure a swift and effective recovery effort. Hurricanes Harvey, Irma, and Maria remind us all of the importance of preparedness and resilience in the face of disaster. Below are a few initiatives that advance our efforts to achieve our preparedness and resilience goals.

National Flood Insurance Program: The Department administers the [National Flood Insurance Program](#) (NFIP) to reduce the impact of flooding on private and public structures. The NFIP takes a multi-faceted approach that includes providing affordable insurance to property owners while also encouraging communities to adopt floodplain management regulations and invest in mitigation efforts; however, challenges exist in maintaining the viability of this program. To address the financial stability of the NFIP, DHS plans to support long term reauthorization of the NFIP by promoting transparency around the NFIP's revenue, expenses, risk exposure, and available risk management tools as NFIP reauthorization-related discussions progress with DHS, the Administration, and Congress. FEMA is leveraging existing investments in analytic capacity and engagements with the reinsurance industry to better understand the NFIP's risk profile and appropriate risk management strategies.

Disaster Workforce Structure: In order to be prepared for all hazards, the Department has made numerous advancements in the past decade to the disaster response workforce. The establishment of the [Surge Capacity Force](#) allows the capacity for the Department to deploy its employees in support of FEMA's existing workforce for a large-scale disasters as seen this year with Hurricanes Harvey, Irma, and Maria. The Department continues to innovate and learn from other agencies, such as developing a centralized reception, staging, onward movement, and integration process and collaborating with the Corporation for National and Community Service. FEMA has made progress, but is still far from its desired workforce structure. Moving forward, FEMA is conducting research to understand the barriers that prevent it from reaching its disaster workforce structure. Additionally, it is continuing to learn from other agencies and

- 18 -

FY 2017 Agency Financial Report

will take lessons learned from Hurricanes Harvey, Irma, and Maria to address this critical need in times of crisis.

Enforce and Administer Our Immigration Laws***Mission 3: Enforce and Administer Our Immigration Laws***

A fair and effective immigration system enriches American society, unifies families, and promotes our security. Our Nation's immigration policy plays a critical role in advancing homeland security.

Looking Forward

The success of our Nation's immigration policy plays a critical role in advancing homeland security. The Department is focused on smart and effective enforcement of U.S. immigration laws while streamlining and facilitating the legal immigration process. Effective administration of the immigration system depends on ensuring that immigration decisions are impartial, lawful, and sound; that the immigration system is interactive and user friendly; that policy and procedural gaps are systematically identified and corrected; and that those vulnerabilities which would allow persons to exploit the system are eliminated. Below are a few initiatives that advance our efforts to achieve the Department's immigration enforcement and administration goals.

USCIS' Improvement Plans: USCIS secures America's promise as a Nation of immigrants by granting citizenship and immigration benefits, promoting awareness and understanding of citizenship, ensuring the integrity of the immigration system, and providing accurate and useful information to its customers. Over the past few years, the number of applications for benefits and benefit changes has ballooned to more than 8 million transactions per year creating a challenge to process applications in a timely fashion. The sheer volume of work has led USCIS to leverage a suite of technology tools that give customers faster and easier access to immigration information. The flagship of the newest suite of tools is [myUSCIS](#), an online one-stop shop for immigration information. The success of [myUSCIS](#) will be leveraged to expanded service to continue to provide value, relevance, and reach for customers and stakeholders.

Enhancing Public Safety in the Interior of the United States: [EO 13768](#), *Enhancing Public Safety in the Interior of the United States*, aims to effectively address those individuals who illegally enter the United States and those who overstay or otherwise violate the terms of their visas. Historically, surges of illegal immigration at the southern border with Mexico has placed a significant strain on federal resources and overwhelmed those agencies charged with border security and immigration enforcement. One of the provisions of the EO addresses this need by hiring 10,000 Immigration and Customs Enforcement Law Enforcement Officers (LEOs) and related support staff. The FY 2018 budget includes plans for the first 1,000 LEOs, and plans are in place to onboard the remaining staff over a multi-year horizon.

Mature and Strengthen Homeland Security

The objectives for maturing and strengthening the Department were designed to bolster key activities and functions that support the success of our strategic missions and goals. Ensuring a shared awareness and understanding of risks and threats, building partnerships, strengthening our international enterprise structure, enhancing the use of science and technology, with a strong service and management team underpin our broad efforts to ensure our front-line operators have the resources they need to fulfill the missions of the Department.

Looking Forward

Maturing and strengthening the Department and the entire homeland security enterprise—the collective efforts and shared responsibilities of federal, state, local, tribal and territorial, nongovernmental and private-sector partners, as well as individuals, families, and communities—is critical to the Department's success in carrying out its core missions and operational objectives.

U.S. Department of Homeland Security

- 23 -

Management's Discussion and Analysis

Formalizing the Requirements Process: DHS's maturation and challenge includes improving numerous business practices necessary for supporting front line operations that must combat evolving threats and ensuring efficient operations. An important advancement for the Department along this journey is formalizing the requirements process. Gains in this effort come from the Department wide Joint Requirements Council (JRC) and the Radiological/Nuclear Requirements Oversight Council (RNROC). The JRC provides oversight of the DHS requirements generation process by validating capability gaps, needs, and requirements based on capability analysis. The RNROC charter is to oversee the requirements process specific to radiological/nuclear detection and nuclear forensics, vetting Component requirements, and leading to the fielding of effective solutions prior to validation by the JRC. Both efforts are advancing requirements development in DHS and will ensure efficient and effective operations into the future.

Office of the Chief Human Capital Officer: DHS continues to implement a results-oriented annual planning process to support the strategic management of human capital resources. Several key department-wide initiatives will occur in the coming year to bring the human capital community together in a unity of effort. The Department will develop an enterprise approach for co-branding DHS and Components in all human capital outreach efforts including advertising, marketing, and social media. DHS will also develop a process to automate and streamline data collection to provide leadership with real-time information to evaluate the return on investment achieved related to hiring initiatives. Furthermore, the Department is creating career pathing with online resources, assessment tools, and skill-building opportunities for the 1800 job series occupations (Inspection, Investigation, Enforcement, and Compliance), Human Resources occupations (201 job series), and other select Management lines of business occupations. Lastly, DHS will leverage existing Component programs to develop a department-wide Resilience and Family Readiness Program to support families when front-line employees need to be deployed to other geographic locations.

Financial Stewardship: DHS is expending resources to raise the baseline of our security posture, necessitating the continued evolution of the business processes and systems supporting mission delivery. With the magnitude and scope of threats continuing to grow and change every day, DHS is further maturing our resource agility and efficiency. **Enterprise risk management** (ERM) is foundational to delivering on the DHS mission and objectives, and integrated into each phase of the planning to execution processes. A critical aspect of the Department's integrated ERM approach is the continued maturation of a robust internal control program, ensuring taxpayer funds are expended as efficiently and effectively as possible while preventing and detecting fraud, waste and abuse. Using a risk based approach and the U.S. Government Accountability Office (GAO) criteria for standards for internal control, DHS assessed its internal control maturity by Component and key deficiency category. This Internal Control Maturity Model baseline served as the Department's starting point to measure substantial progress in addressing weaknesses and sustaining a strong control environment. The Department's comprehensive enterprise approach to remediation are driving and sustaining continuous progress, as evidenced by the ability to downgrade the Property material weakness this fiscal year. DHS will continue demonstrating strong financial stewardship, executing the multi-year strategy to remediate our two remaining material weaknesses in Financial Reporting and Information Technology controls and achieve a clean Internal Control over Financial Reporting opinion.

9. HUD

pgs. 12-14

Forward Looking Information

Numerous external factors shape HUD's operating environment. Understanding their influence is essential for mitigating risk and achieving performance objectives. These external factors include funding levels, economic conditions, unemployment rates, financial markets, tax codes, and other federal, state and local conditions. HUD's new *2018–2022 Strategic Plan* responds to these factors by reimagining the way HUD works. The plan's reforms include careful use of evidence, employee empowerment, clear communication, and enhanced controls that are all crucial to more efficient and effective mission delivery.

Constrained federal funding levels affected most HUD programs during FY 2017 and are likely to continue in the foreseeable future. Financial constraints increase demand by Public Housing Authorities (PHAs) for administrative and operational flexibility. HUD is implementing such flexibilities through the Rental Assistance Demonstration, which gives PHAs access to private capital, and by working toward an evidence-based expansion of housing agencies participating in the Moving to Work program.

By the end of FY 2017, the unemployment rate had improved to 4.4 percent, down from 4.9 percent a year earlier, and the employment-to-population ratio increased slightly.¹ Such employment gains should facilitate further gains in household incomes, building on the 4.5 percent increase in 2015 median income to \$59,039 in 2016.² The improving employment and income situation is likely to strengthen the ability of first-time home buyers to enter the housing market in coming years.

In the second quarter of 2017, purchases of new single-family homes were up 9 percent and of existing homes were up 2 percent from a year earlier. With the increasing demand, prices of owner-occupied homes as measured by the Case-Shiller index had increased by 5.7 percent as of June 2017 compared with the previous year. The turmoil in the mortgage market has substantially ended. At the end of FY 2017, rates of mortgage delinquency, foreclosure starts, and foreclosure completions showed little change from previous year rates. Student loan debt poses a significant constraint on homebuying by younger adults. Other factors restraining sales include more stringent bank lending standards, a relatively low sales inventory, and weakening ownership affordability driven by the house price increases and slightly higher interest rates. For these reasons, sales to first-time buyers accounted for 33 percent of all sales transactions in the second quarter of 2017, remaining significantly below the historic norm of 40 percent.³

¹ Values as of August. Bureau of Labor Statistics. "Employment Situation Summary Table A. Household data, seasonally adjusted," August 2017. <http://www.bls.gov/news.release/emp/sit.a.htm>

² U.S. Census Bureau. 2017. Table HINC-01, "Selected Characteristics of Households by Total Money Income." <https://www.census.gov/data/tables/time-series/demo/income-poverty/cps-hinc/hinc-01.html>.

³ HUD PD&R. 2017. "National Housing Market Summary, 2nd Quarter, 2017." https://www.huduser.gov/portal/ushmc/quarterly_commentary.html.

Forward Looking Information

Housing construction in mid-2017 remained at the same annual pace of 1.2 million housing starts that was observed the previous year. Construction at this pace would be just sufficient to accommodate annual housing formation, were it not for expected demolition of several hundred thousand obsolete units. On balance, housing markets remain tight. The number of multifamily starts declined 16 percent, although the rental vacancy rate of 7.3 percent in June 2017 had eased only 0.6 points from the record low of the previous year.⁴ Multifamily housing starts represented 28 percent of total starts in June 2017, remaining above the long-run average of 24 percent of housing starts.⁵

HUD's rental affordability index shows that rent increases continue to outpace income growth, eroding the affordability of renting a home. The index relates median renter household income to the qualifying income for the median-priced rental unit. The rental affordability index worsened from 140.1 percent at the beginning of 2001 to 118.0 in the second quarter of 2016 and 112.6 in the second quarter of 2017. The latter value implies that the median renter has only 12.6 percent more income than the minimum necessary to qualify, at 30 percent of income, for the median-priced unit.

Very low-income renters are disproportionately burdened by a supply gap in affordable housing. In 2015, only 62.0 affordable rental units were available per 100 very low income renters, down from 65.2 in 2013.⁶ Such unmet demand for affordable housing puts pressure on waiting lists for public and assisted housing, fair market rents, and HUD's subsidy costs.

Shortages of affordable housing also contribute to doubling up and homelessness, especially for families. Homeless veterans for many years were overrepresented in the homeless population, especially among chronically homeless individuals.

Under the *National Disaster Recovery Framework* developed since Hurricane Katrina, HUD has a major role in helping implement disaster recovery. Over the longer term, new disasters and emerging national needs such as coastal development and insufficient flood insurance have potential to create new needs and require significant changes in the Department's program operations. Severe hurricanes such as Harvey, Irma, and Maria that made landfall late in FY 2017 cause damage that can significantly change housing and employment markets on a regional basis for months or years.

HUD is continuing to integrate evidence and research in operations and policy, consistent with multiple governmental initiatives, and as embodied in the *2018–2022 Strategic Plan*. Major components of this effort include the Office of Policy Development and Research's (PD&R's) demonstration and evaluation program, which is guided by a learning agenda, *HUD Research Roadmap: 2017 Update*; increased collaboration with external partners to address cross-cutting policy issues through research; the leveraging of HUD's data infrastructure by linking

⁴ Census Bureau. Historical Table 1. "Quarterly Rental Vacancy Rates: 1956 to Present."

⁵ HUD PD&R. 2017. "National Housing Market Summary, 2nd Quarter, 2017."

⁶ HUD PD&R. 2017. *Worst Case Housing Needs: 2017 Report to Congress*.

administrative data with surveys and other external data sources; and the continuing integration of evidence into business operations.

10. Interior

pgs. 30-32

WHAT'S AHEAD – A FORWARD LOOK

The Department of the Interior (DOI) conserves and manages the Nation's natural resources and cultural heritage for the benefit and enjoyment of the American people, provides scientific and other information about natural resources and natural hazards to address societal challenges and creates opportunities for the American people, and honors the Nation's trust responsibilities or special commitments to American Indians, Alaska Natives, and affiliated island communities to help them prosper. The DOI's diverse mission plays a crucial role in enriching the lives of all Americans and promoting economic growth across America. As the largest land management agency in the Federal Government, DOI is responsible for the oversight and management of America's public lands, national parks, mineral resources, grazing lands, and more. As stewards of this public trust, DOI meets the diverse needs of Americans by managing America's public lands for multiple uses, ensuring these lands are available for recreation, energy development, and for job growth and creation. By embracing a balanced stewardship approach, DOI is positioned as a leader in boosting job creation and spurring economic growth in the land, energy and recreation industries.

The DOI strives to fulfill the Secretary's vision to:

- ▶ ***Uphold trust and related responsibilities*** recognizing that Indian tribes, the U.S. territories, and certain Pacific islands with whom we have a special relationship are all sovereign governments, deserving of our respect, and who have a right to expect we will have their interest in mind as we carry out our mission.

Through a thoughtful stewardship approach, DOI will ensure that America's natural treasures – the lands and waters of the United States – are conserved for the benefit, use, and enjoyment of current and future generations. The bureaus within DOI use the best modern natural resource management techniques, science, technology and engineering, and efficient decisionmaking processes. The bureaus also focus on robust partnerships, improved land use planning to ensure balanced stewardship, and a wise use of the public lands to include wildlife and fish species.

In alignment with the President's Executive Order on Promoting Energy Independence and Economic Growth, which prioritizes our Nation's energy development, DOI is committed to achieving and maintaining American energy dominance, with an "all-of-the-above" energy strategy. Serving as a leader in energy development, DOI manages and provides

- ▶ **Promote energy and minerals independence** to create jobs for Americans, insulate our Nation from volatile political developments overseas, and generate revenue for all levels of government so they in turn have the resources to better serve the American people.
- ▶ **Increase access to outdoor recreation opportunities for all Americans** so that our people can be healthier, more fully enjoy the wonderful features of their Federal lands, and take advantage of hunting, fishing, and other wildlife oriented pursuits that are the roots of the conservation movement.
- ▶ **Enhance conservation stewardship** whereby all levels of government and private landowners work cooperatively together in an atmosphere of mutual respect to achieve shared natural resource management goals.
- ▶ **Improve management of species and their habitats** by focusing our financial and staff resources on improving the status of our Nation's fish and wildlife and the healthy habitats that support them, and by streamlining bureaucratic processes to help us spend relatively more of our funding productively on the ground, so we can more quickly and effectively respond to societal needs and our own natural resource management responsibilities.

... development, and manages and provides access to energy and other resources including oil, gas, coal, water, timber, grazing, and non-energy minerals on public lands and the Outer Continental Shelf. The use of these resources, and the further growth of these energy-based industries, enrich the lives of Americans and provide a source of economic growth at many local communities across the Nation. To achieve the responsible productivity of the public lands, DOI will balance conservation principles with multiple-use strategies, which will provide economic benefit to both present and future generations.

Outdoor recreation is integral to a healthy lifestyle for millions of Americans. As the largest Federal land management agency, DOI seeks to further promote use of public lands for outdoor recreational activities, by establishing recreation on public lands as a cornerstone of DOI's multiple-use land strategy. Through DOI's multiple-use policy, Americans have the opportunity within DOI managed public lands to hunt, fish, hike, camp, climb, sail on boats, view wildlife, and to pursue other outdoor activities. Visitors to DOI's public lands and waters experience the physical, mental, and social benefits that outdoor recreation provides and form an integral connection with America's great lands. The visitors to our lands today will be our conservation leaders of tomorrow. Outdoor activities on public lands enrich the lives of Americans, provide greater opportunities for

WHAT'S AHEAD – A FORWARD LOOK

future generations to connect with nature, and will help to shape future leaders in conservation.

The DOI upholds the Federal Government's unique trust responsibilities by fostering the government-to-government relationships between the Federal Government and federally recognized Tribes by providing services to individual American Indians and Alaskan Natives. The U.S. has important relationships with the insular areas including the Territories of American Samoa, Guam, the U.S. Virgin Islands, and the Commonwealth of the Northern Mariana Islands. The DOI also administers and oversees Federal assistance to the three Freely Associated States: the Federated States of Micronesia; the Republic of the Marshall Islands; and the Republic of Palau.

The DOI's activities are guided by a Strategic Plan and a set of Priority Performance Goals. The following initiatives exemplify how DOI will maintain and build the capacity to carry out these responsibilities on behalf of the American people in the future.

Ensuring Effective and Accountable Leadership - A critical role for DOI's senior executives is providing the necessary leadership to guide the efforts of DOI's offices, bureaus, and field locations in effectively achieving Presidential and Secretarial goals: ensuring cost effective operations and quality service to the public; facilitating cooperation and collaboration

Engaging the Nation in Cooperative Stewardship - In managing such a broad range of resources for the benefit of the public, DOI works closely with other Federal agencies, state, tribal, territorial, and local governments, and the public. The DOI is working to increase coordination across agency lines and levels of government to achieve common goals and resolve differences without litigation.

With a focus on cooperative stewardship, DOI will focus on leveraging taxpayer investment with public and private resources through wildlife conservation, historic preservation, and recreation grants. These programs encourage partnerships by providing matching funds that produce greater benefits to taxpayers for the Federal dollars invested. For example, the FY 2018 budget for NPS includes \$15 million in current funding for the Centennial Challenge matching program to leverage private donations for park projects. This and other bureau programs highlight the strong cooperative spirit that DOI fosters through partnerships with many Federal agencies, state, tribal, territorial, and local governments, and the public to build out the cooperative stewardship model of the future.

Improving Infrastructure - The DOI manages an infrastructure asset portfolio with a replacement value exceeding \$300 billion. Most well-known are DOI's iconic and unique national treasures, which

public; facilitating cooperation and collaboration across organizations within DOI and its Federal and non-Federal partners; providing a workplace environment that is safe, fair, and conducive to employee productivity; resolving conflicts as needed; and holding individuals accountable for their actions. The DOI embraces a zero tolerance policy for sexual harassment and expects all leadership to serve as role models in following and enforcing this policy.

Empowering the Field - Accomplishing the multi-faceted missions of DOI involves the skills of 9 bureaus and the Departmental offices spanning 2,400 locations across the U.S. These locations are often remote and present managers with unique challenges. Managers and experts in the field must exercise judgement and discretion, and must have a skilled workforce to address the issues in managing their operations. Decisions are frequently made at higher levels in the organization at a regional or headquarters level, which are far removed from the realities present in the field. To address this challenge, DOI plans to further empower the managers and employees in the field by shifting more of the decisionmaking out to the field from the headquarters level. This initiative will help to reengage the workforce and increase employee morale at the front lines.

DOI's iconic and unique national treasures, which have priceless historical significance. The DOI owns approximately 43,000 buildings, 100,000 miles of roads, and 80,000 structures; including dams, laboratories, employee housing, Indian schools, visitor facilities, historic structures and power infrastructure. The related deferred maintenance backlog has grown to over \$16 billion in FY 2017, of which over \$11 billion belongs to NPS.

Taking care of this significant asset portfolio is a persistent challenge. The DOI is committed to looking into ways to address this backlog and to maintaining its facilities for the safety and productivity of its workforce, and the enjoyment of the American public. Due to the magnitude of the infrastructure maintenance backlog, this will be a long term initiative that is vital for the preservation of DOI's assets for future generations.

The DOI's transportation assets, such as roads and bridges, account for about half of DOI's deferred maintenance backlog. The Federal Lands Transportation Program, funded by Congress via the Department of Transportation Highway Trust Fund, will provide more than \$300 million for Interior projects in FY 2018.

WHAT'S AHEAD – A FORWARD LOOK

A portion of these funds will help NPS conduct much needed repairs to the Arlington Memorial Bridge, linking Virginia to Washington, DC.

The DOI also is participating in a government-wide effort to improve agency management and streamline permitting for energy and other infrastructure projects. The DOI is one of 13 Federal agencies implementing Title 41 of the *Fixing America's Surface Transportation Act* – commonly referred to as FAST-41 – which was designed to improve the timeliness, predictability, and transparency of the Federal environmental review and authorization process for specific infrastructure projects. The DOI is the lead agency for eight projects, and either a coordinating or cooperating partner for 14 projects.

Striking a Regulatory Balance - In accordance with the Executive Order on Enforcing the Regulatory Reform Agenda, DOI will identify regulations for repeal, replacement, or modification that eliminate jobs, inhibit job creation, are outdated, unnecessary, ineffective, impose costs that exceed benefits, or rely on data or methods that are not publicly available or insufficiently transparent to meet the standard for reproducibility. When implementing any future regulatory actions, DOI plans to take a measured

advise him on the fair market value of and revenue collection from Federal and Indian mineral and energy leases, including renewable energy sources.

The DOI provides technical assistance and continues funding for the multi-bureau Indian Energy Service Center established to expedite the leasing, permitting, and reporting for conventional and renewable energy on Indian lands. Income from energy is one of the larger sources of revenue generated from trust lands, and these programs assist tribal landowners optimize sustainable stewardship and use of resources, providing benefits such as revenues and jobs.

Restoring Trust - As true stewards of the Nation's natural and cultural resources, it is critical that DOI can be trusted to operate in the best interest of the American public. Key to maintaining public trust and confidence in the integrity of government is the adherence to high ethical standards and ensuring that government business is conducted with impartiality and integrity. The DOI embodies this principle, follows the law, and holds people accountable. Decisions are based on the best interest of the public, with the goal of promoting and supporting transparency, accountability, and efficiency.

and thoughtful approach. This will ensure future DOI regulations seek to strike a stronger balance of regulation with the practicality of application.

Generating Revenue, Jobs, and Economic Activity -

The DOI grants access to public lands and offshore areas for conventional and renewable energy development—representing roughly a quarter of the Nation's domestic supplies of oil and natural gas—while ensuring safety, environmental protection, and revenue generation for the American public. It is important to the Nation's future that these natural resources are managed wisely and made accessible for public use to help generate revenues and grow the U.S. economy.

During FY 2017, Secretary Zinke started several efforts to put America on track to achieve the President's vision for energy dominance. The DOI lifted the 2016 moratorium on all new coal leases on Federal land, and will review areas closed off by the 2017-2022 program for oil and gas leasing without disrupting scheduled lease sales. To ensure American taxpayers continue to receive the full value of natural resources produced on Federal lands, in April 2017, Secretary Zinke signed a charter establishing a Royalty Policy Committee of 28 local, tribal, state, and other stakeholders, to

With a strong focus on maintaining trust, DOI is committed to effective financial operations and accountability including high quality and timely reporting, robust internal controls, clean audits, and effective follow-up on audit and internal control findings. The DOI utilizes FBMS for the integration of business functions including budget execution, finance, acquisition, improved internal controls, a secure information technology environment, and a community of business innovation, efficiency, and transparency.

The DOI has a deep commitment to strengthen America's economic and energy security, focus on the Nation's infrastructure, to be responsible stewards of this magnificent land, encourage public access for outdoor recreation, and strengthen and respect tribal sovereignty. At the same time, DOI is committed to fiscal responsibility and, through the President's budget for FY 2018, is proposing sensible and rational reductions and making hard choices to reach a balanced budget by FY 2027.

11. Justice

pgs. 15; 21-22

In FY 2017, the Department made significant strides in developing its **Enterprise Risk Management (ERM)** program with the goal of integrating ERM with strategic planning and internal control processes to foster better performance-based management and decision-making. The Department convened a Risk Management Committee to identify and prioritize enterprise-wide risks associated with mission and mission-support operations across the Department. The Committee included representatives from material reporting components, a litigating division, and the Justice Management Division (JMD). Discussions of existing and planned management controls associated with the risks led to the development of an initial ERM Risk Profile.⁴

Efforts will continue in FY 2018 to further develop the Department's ERM program, to include implementing a framework for integrating ERM practices with strategy setting and performance management initiatives, consistent with the framework provided in OMB Circular A-123, *Management's Responsibility for Enterprise Risk Management and Internal Control*. The governance structure will evolve to incorporate representatives from additional components, and Management Working Groups will be established to support detailed analyses of risks, risk responses, and internal control monitoring. Communication, training, and awareness building will be key areas of focus to leverage existing ERM practices and gain further integration between strategic planning, internal control monitoring, and performance assessment.

Possible Effects of Existing, Currently Known Demands, Risks, Uncertainties, Events, Conditions, and Trends

The Department's leadership is committed to ensuring its programs and activities will continue to be focused on meeting the dynamic demands of the changing legal, economic, and technological environments of the future.

National Security

- Going Dark: Criminals and terrorists are using encryption and other anonymous or hidden services to avoid detection, identification and capture. Conducting court-approved intercepts has become more challenging. Providers offer encryption as a selling point. Even when legal authority exists, technical ability is lacking, as are storage and data retention policies. A coordinated strategic response is urgently needed.
- Foreign Intelligence and Insider Threat: Both international and domestic terrorists threaten Americans at home and abroad. Foreign governments and state-sponsored actors threaten U.S. national security through foreign operations and espionage.

Law Enforcement

- Cyber Threat: Cyber issues straddle both national security and criminal areas, with the United States facing daily telecommunications network attacks from a range of nations, criminals and terrorists, all with potentially devastating consequences. The Department of Justice itself is under constant cyber-attack. The threat is pervasive and persistent and the methods of adversaries are always evolving.
- Opioid Epidemic: Drug overdoses are now the leading cause of injury-related deaths in the United States – more than which include prescriptions, heroin and fentanyl.
- Transnational Organized Crime: Transnational criminal organizations pose the greatest threat to national security and the safety of American citizens.

Immigration

- Increasing Workload: The Executive Office for Immigration Review's (EOIR) immigration court caseload continues to increase to record levels, growing by more than 125 percent since FY 2010 to 560,000 cases currently pending adjudication.
- Illegal Aliens: An increase in DHS apprehensions will result in more fugitive investigations for individuals with immigration warrants; more protective investigations and details for members of the judiciary; and more prisoners to receive, process, and detain.
- Immigration Enforcement Prosecutors: Federal prosecution of border crime is an essential part of the nation's defense and security and critical to public safety. U.S. Attorneys' Offices address the criminal and civil caseloads generated by law enforcement activities to ensure aggressive enforcement of all immigration statutes.

Hiring and Staffing

- Given an aging population in the federal workforce, the Department faces a series of difficulties in the coming years. Most components have experienced reduced staffing levels in the past several years. The hiring process can be lengthy and complex, especially the added time needed for background investigations.

Budget Constraints and Uncertainties

- From 2001 to 2010, the Department's discretionary budget rose steadily, from \$18 billion to \$28 billion. However, since then, the discretionary budget has been largely flat, with components absorbing inflationary costs.

Unpredictable

- Responses to unanticipated natural disasters and their aftermath, such as the three major hurricanes the United States endured in 2017, require the Department to divert resources to deter, investigate, and prosecute disaster-related federal crimes, such as charity fraud, insurance fraud and other crimes.
- Changes in federal laws may affect responsibilities and workload.
- Much of the litigation caseload is defensive. The Department has little control over the number, size, and complexity of the civil lawsuits it must defend.

12. Labor

[Multiple pages](#)

Employment and Training Administration (ETA)

Looking Forward: As of October 1, 2017, ETA has a total of 2,439 active grants with a total funding portfolio of \$21.9 billion; 2,085 grants are assigned to 233 regional FTE and 354 grants assigned to approximately 16 FTE in the national office. In light of workload demands, ETA will continue to work towards the FY 2018 grant monitoring target of 26% in FY 2018.

Veterans' Employment and Training Service (VETS)

Looking Forward: In FY 2018, VETS will continue to measure HVRP success by using the job placement metric in conjunction with average hourly wages of those job placements. One key to assisting this population is to provide quick job placement into a career path with sustainable wages. VETS will continue to work closely with the Office of the Solicitor to explore ways to engage with regional solicitors earlier in the USERRA investigation process to ensure

FY 2017 Agency Financial Report 11

Management's Discussion and Analysis
(Unaudited)

issues are being identified and investigated. The revised QAR has undergone a three-month field test in two regions, and following Solicitor review VETS anticipates that it will be implemented in early FY 2018.

Office of Disability Employment Policy (ODEP)

Looking Forward: In FY 2018, ODEP will research Stay-at Work/Return-to-Work (SAW/RTW) policies and practices and begin a project to build evidence for what works in retaining employees or bringing them back to work after a temporary absence due to occupational, as well as non-occupational illness and/or injury. ODEP plans to work with states that are interested in adopting systemic changes that facilitate retention and return-to-work rates after a temporary work disability.

Women's Bureau (WB)

Looking Forward: In FY 2018, WB plans to examine how the costs of child care affect women's labor force participation using county-level data. WB will also disseminate research findings on the effects of providing informal care on women's long-range financial security. WB will continue to work with the CEO on its five-year evaluation of the American Apprenticeship Initiative, which involves testing an intervention related to outreach to and recruitment of women into apprenticeship programs. Additionally, WB will collaborate with ETA and VETS to support ETA's grant work on state licensing and promote employment for military spouses.

Bureau of Labor Statistics (BLS)

Looking Forward: BLS will continue to report timeliness, accuracy, and relevance for its PFEIs, track dissemination of its website, and measure customer satisfaction with its website. BLS also will continue to evaluate its targets in the interest of continuous improvement.

Occupational Safety and Health Administration (OSHA)

Looking Forward: In FY 2018, OSHA's effort to promote Safety and Health Programs (SHP) and move employers along the path to safety excellence will unite the various programmatic components of the agency in a common, proactive, and positive message addressing the agency's core mission. Companies that adopt a SHP improve both their safety culture and safety performance. In addition, OSHA cooperative program participants often reach stakeholders that OSHA may not otherwise interact with through dissemination of safety and health information locally, within their company, or industry. OSHA will also refine current enforcement strategies and implement new programs to target inspection resources to the most egregious employers and serious hazards.

Mine Safety and Health Administration (MSHA)

Looking Forward: MSHA will use the following strategies in pursuit of achieving this target: increasing inspection and enforcement effectiveness, strengthening and modernizing training and education, strengthening health and safety regulations, and increasing efforts to protect miners from discrimination.

Wage and Hour Division (WHD)

Looking Forward: To protect fair and vigorous competition, WHD addresses compliance issues systemically and prevents violations through compliance assistance to reach a broader audience. The combination of compliance assistance and enforcement increases compliance with the laws. Moving forward, WHD is focused on the challenge of advancing effective enforcement while identifying areas for increased efficiency. To ensure a level playing field for all employers, WHD will conduct its business smarter and more effectively by assessing existing evidence and generating new knowledge to achieve agency goals. Compliance assistance to the employer community is a central component of WHD's efforts to meet its mission and the demand for accessible information about the laws WHD enforces remains high. WHD will expand on efforts to modernize compliance assistance information and reach and inform a broader audience.

Office of Federal Contract Compliance Programs (OFCCP)

Looking Forward: In FY 2018, OFCCP will rebalance the agency's mix of scheduling and conducting compliance evaluations, and delivering compliance assistance. This is essential to OFCCP's long-term success as a civil rights agency. OFCCP will explore new ways and launch new initiatives to encourage all contractors to voluntarily meet their mandatory compliance obligations. In addition, OFCCP will seek to implement a scheduling process for compliance evaluations that focuses on industries or sectors that have a greater likelihood of having compliance issues. And, when compliance evaluations are conducted, they will be efficient and thorough, and appropriately transparent.

Bureau of International Labor Affairs (ILAB)

Looking Forward: In FY 2018, ILAB will pursue a multifaceted strategy to promote workers' rights and strengthen cooperation and collaboration with key countries and international organizations. ILAB will also continue to ensure trade partners comply with their commitments and continue to strengthen labor law enforcement so that U.S.

FY 2017 Agency Financial Report 17

Management's Discussion and Analysis
(Unaudited)

workers are not placed at a competitive disadvantage. ILAB engages in a variety of negotiating, monitoring, enforcing, reporting and research activities with partners and stakeholders in key countries.

Office of Labor-Management Standards (OLMS)

Looking Forward: For the fallout measure, OLMS will continue to refine the targeting techniques to continue saving resources directed at audits and redirecting these saved resources to high priority programs. OLMS continues to enhance efforts to coordinate work between the National Office, SOL, and field staff by identifying new means of communications and extending existing channels to more efficiently process election cases. In the past, these efforts have expedited processing and OLMS believes the number of elapsed days can be further reduced. In FY 2016, OLMS published a regulation that will require filers of LM-3 and LM-4 reports to do so electronically. Once fully implemented in FY 2019, over 80 percent of reports will be required to be filed electronically and electronic filing will be available for 85 percent of the full volume of reports expected to be filed.

Office of Workers' Compensation Programs (OWCP)

Looking Forward: In FY 2018, OWCP will continue development of the OWCP Workers' Compensation System (OWCS), an integrated claims processing and management system for all four programs. OWCP expects the Longshore program to begin using OWCS by the end of 2018. OWCP will continue to use data analytics and process improvement strategies to manage the pending Black Lung claims, improve stakeholder partnerships and data sharing, and recruit and train credentialed physicians available for diagnostic examinations.

Federal-State Unemployment Insurance (UI) Program (administered by ETA)

Looking Forward: In FY 2018, ETA UI staff will work with "High Priority" states to develop comprehensive Corrective Action Plans (CAPs) designed to improve performance. Examples of ETA's customized technical assistance strategies to support performance improvement for the poor performing states include:

- Work collaboratively with the state(s) to conduct enhanced analysis of all relevant data (including performance data) to inform strategic approaches to performance improvement. The data analysis may also involve examining data in similarly situated states.
- Deploy a team of experts composed of ETA and state subject matter experts, to conduct a thorough review of each High Priority state's administrative and business processes relevant to the poor performance using business process analysis and process mapping tools, resulting in recommendations and an action plan the state will implement.
- Engage high-level state officials to bring focus to the egregious performance and promote prioritizing state resources to support performance improvement.
- Conduct enhanced monitoring and follow-up that may include additional reporting by the state in area of performance deficiency and on-site visits by ETA or partnering with state staff to assess process changes.

In FY 2018, ETA launches the new UI benefits operations state self-assessment process which will aid states in identifying and addressing operational issues impacting performance. The new process involves a comprehensive review of 15 functional and program areas within UI benefits operations.

ETA, in collaboration with the National Association of State Workforce Agencies' Information Technology Support Center (ITSC), continues to diligently work with individual states and state consortia to provide appropriate technical assistance in support of their information technology modernization efforts. Pending availability of funding in future years, ETA will continue to support the states' system modernization efforts.

Employee Benefits Security Administration (EBSA)

Looking Forward: In FY 2018, EBSA will continue to assist individuals in understanding their rights and responsibilities under ERISA. In particular, the agency's participant assistance and outreach and education programs will focus on disseminating information related to health and retirement benefit protections and retirement savings education. EBSA will also continue to implement performance measurement changes designed to increase the effectiveness of its enforcement program. The following overlapping and related attributes will be emphasized: effective targeting, prompt detection and pursuit of violations; the successful pursuit of monetary recoveries; non-monetary results that promote compliance with ERISA; and the aggressive and timely pursuit of participant tips and complaints.

13. State

pgs. 35-36

During FY 2017, the Department continued to take important steps to transform how the Department will implement an Enterprise Risk Management (ERM) System. A principal element will be to integrate better risk management into our everyday work across all of our operations. The Department's Office of Policy, Rightsizing, and Innovation (M/PRI) leads the Department's ERM implementation. M/PRI, in collaboration with the Office of Budget and Planning and the Office of the Comptroller,

ANNUAL REPORT ■ UNITED STATES DEPARTMENT OF STATE | 35

worked closely with offices throughout the Department to establish the Department's risk profile. Additionally, M/PRI is working on an implementation plan with tools, training, and communication components that will establish a more structured approach to Risk Management.

14. DOT

pg. 20

Assessing Internal Controls

OMB Circular A-123 defines management's responsibility for Enterprise Risk Management (ERM) and internal control. The Statement of Assurance is based on assessments performed during FY 2017. The assessments for FY 2017 included the following, utilizing applicable guidance:

- Appendix A, *Internal Control Over Financial Reporting*¹
- Appendix B, *Improving the Management of Government Charge Card Programs*
- Appendix C, *Requirements for Effective Estimation and Remediation of Improper Payments*
- Appendix D, *Compliance with the Federal Financial Management Improvement Act*

Management's Statement of Assurance, as it relates to OMB Circular A-123, *Management's Responsibility for Enterprise Risk Management and Internal Control*, is located in the preceding section of this report.

¹ The title of OMB Circular No. A-123, Appendix A, was modified to *Internal Control Over Reporting* on July 15, 2016, when the new OMB Circular No. A-123, *Management's Responsibility for Enterprise Risk Management and Internal Control*, was issued. The updated OMB Circular No. A-123, Appendix A, *Internal Control Over Reporting*, has not been issued, however. Therefore, DOT utilized the guidance provided in A-123, Appendix A, *Internal Control Over Financial Reporting*, for the FY 2017 assessment.

FEDERAL FINANCIAL MANAGEMENT IMPROVEMENT ACT (FFMIA)

FFMIA requires that each agency implement and maintain financial management systems that comply substantially with the following three FFMIA Section 803(a) requirements: (1) Federal financial management systems requirements, (2) applicable Federal accounting standards, and (3) the United States Standard General Ledger (USSGL) at the transaction level.

15. Treasury

pgs. 22-24

FY 2018 OUTLOOK

Our FY 2018 – 2022 Strategic Plan will be published in February 2018. In this plan, we will describe the long-term goals and objectives we aim to achieve during this Administration, building from the progress made and challenges identified in FY 2017.

Our FY 2017 SOAR outlined several focus areas that will shape the development of our future priorities: (1) pursuing tax reform and improving the execution of the tax code; (2) increasing the efficiency and transparency of federal financial management; and (3) supporting effective data-driven decision-making.

Looking ahead, we will shape our strategic goals around five key priority areas: (1) boosting U.S. economic growth; (2) promoting financial stability; (3) enhancing national security; (4) transforming federal financial stewardship; and (5) achieving operational excellence within our department.

ENTERPRISE RISK MANAGEMENT

FRAMEWORK

In July 2016, OMB released an updated Circular No. A-123, *Management's Responsibility for Enterprise Risk Management and Internal Control* to ensure federal managers are effectively managing risks to achieve strategic objectives. Management, together with the Chief Risk Officer (CRO), is responsible for establishing a governance structure to effectively implement a robust process of risk management and internal control. Successful implementation requires us to establish and foster an open, transparent culture that encourages people to communicate information about potential risks and other concerns with their superiors.

To this end, the CRO chairs regular Risk Management Committee meetings which bring together leaders from across Departmental Offices. The Office of Risk Management (ORM) has also established an Enterprise Risk Management (ERM) Council, chaired by the CRO, which brings together risk managers from each of our bureaus on a regular basis. In FY 2017, ORM worked with offices and bureaus across Treasury to develop a risk profile, which will be updated annually.

Beyond its work at Treasury, ORM led an effort to author a playbook to assist federal agencies in their implementation of an ERM governance structure in accordance with the OMB Circular's guidelines. This playbook was published in July 2016. After the release of the playbook, ORM worked to establish an ERM Point of Contact Working Group. This government-wide working group, comprised of representatives from federal agencies and their key components, meets on a regular basis to discuss common risks and various methods of implementing the guidelines of the Circular.

ENTERPRISE RISKS AND CHALLENGES

Through the FY 2017 the SOAR and enterprise risk management process, we identified the following cross-cutting risks and challenges that will be reflected in Treasury's FY 2018 – 2022 strategic goals and objectives.

Human Capital –Workforce Planning/Recruitment:

Issues within the human capital lifecycle (e.g., recruitment, development, and retention), coupled with the lengthy security clearance process, routinely present challenges for achieving the organization's mission. Additionally, expanding the use of workforce planning and metrics to proactively forecast and meet workforce needs proves challenging, particularly in the enforcement, analytics, and regulatory fields.

Program Oversight and Alignment to Mission: We identified a need to better understand and meet customer expectations, and to better measure the impact of our programs across a range of mission areas.

Cybersecurity: Continued growth of increasingly sophisticated threats requires constant vigilance (enabled by state-of-the-art monitoring, implementation of cyber hygiene, and an insider threat program) and retention and recruitment of top talent (enabled by the use of strategic workforce planning) to ensure proper baseline protections.

Aging Infrastructure: We must address risks associated with outdated information technology infrastructure, facilities, and equipment to safeguard employees and systems.

16. VA

pgs. 18-19

ANALYSIS OF ENTITY'S SYSTEMS, CONTROLS, AND LEGAL COMPLIANCE

MANAGEMENT ASSURANCES



THE SECRETARY OF VETERANS AFFAIRS
WASHINGTON

November 15, 2017

Department of Veterans Affairs (VA) management is responsible for managing risks and maintaining effective internal control to meet the objectives of Sections 2 and 4 of the Federal Managers' Financial Integrity Act (FMFIA). VA conducted its assessment of risks and internal control in accordance with Office of Management and Budget (OMB) Circular No. A-123, *Management's Responsibility for Enterprise Risk Management and Internal Control*. Based on the results of the assessment, the Department can provide reasonable assurance that internal controls over operations, reporting, and compliance were operating effectively as of September 30, 2017, except for the following reported material weaknesses:

- (1) Government Accountability Office (GAO) High-Risk List Areas: Every 2 years, at the start of a new Congress, GAO calls attention to agencies and program areas that are high risk due to their vulnerabilities to fraud, waste, abuse, and mismanagement, or are most in need of transformation. GAO's 2015 High-Risk List added "Managing Risks and Improving VA Health Care." GAO highlighted five primary risk issues: (1) ambiguous policies and inconsistent processes; (2) inadequate oversight and accountability; (3) information technology (IT) challenges; (4) inadequate training of VA staff; and (5) unclear resources and allocation priorities. VA submitted its management strategy to GAO to address the five high-risk issues. VA senior leadership is overseeing implementation of the strategy.
- (2) Access to Care: Veterans experiencing long wait times for care challenged the Veterans Health Administration (VHA) to develop open scheduling access. Open access means having space in "today's" schedule for patients to be seen, which means transitioning from a fully booked appointment schedule to a schedule with immediate appointment availability. To improve access to care, VA removed wait times from performance plans, retrained schedulers on a simplified scheduling process, established simplified wait time methods, and increased the volume of appointments completed. VHA implemented Same Day Service (SDS) in Primary Care and Mental Health as of December 2016, and is currently implementing SDS in Community-Based Outpatient Clinics, with an anticipated completion of December 2017. In addition, scheduling software enhancements are currently in progress.

- (3) Community Care: VHA has weaknesses in its design and implementation of controls over the Community Care program, specifically regarding transaction authorization and obligation, cost estimation, payment processing, monitoring, and timely liquidation of unfulfilled authorizations, reconciliations, and the related accrued expenses. The VHA Office of Community Care (OCC) has taken corrective actions including (1) preparing monthly Choice Fund accrual and obligation adjustment white papers to assist with validating accrued expenses and obligations, (2) developing contractor performance metrics for appointment fulfillment and mechanisms to assess and monitor compliance with contract terms, (3) publishing monthly and quarterly review checklists on Community Care financial controls, and (4) publishing OCC reconciliation monitoring and follow-up standard operating procedures to assist stations with performing complete and accurate reconciliations.

Page 1 of 3

18

Department of Veterans Affairs – FY 2017 Agency Financial Report

SECTION I: MANAGEMENT'S DISCUSSION AND ANALYSIS

- (4) IT Security Controls: VA continues to have an IT material weakness in (1) Agency-Wide Security Management Program, (2) Identity Management and Access Controls, (3) Configuration Management Controls, (4) System Development/Change Management Controls, (5) Contingency Planning, (6) Incident Response and Monitoring, (7) Continuous Monitoring, and (8) Contractor Systems Oversight. VA developed Plans of Action addressing the full scope of the audit recommendations. VA is in the process of developing a refreshed approach to the 2015 Enterprise Cybersecurity Strategy that aims to institutionalize the accomplishments of the Enterprise Cybersecurity Team to date and define VA's Enterprise Cybersecurity Program (ECSP). The ECSP will strive to improve VA's existing enterprise security program and build and execute a Risk Management Framework and Cybersecurity Framework program in alignment with National Institute Standards and Technology and federal guidance and policy. Remediation efforts remain a priority for VA and detailed corrective action plans are closely monitored by senior management.

- (5) **Financial Reporting:** VA's legacy financial management systems are outdated and driving a myriad of financial reporting deficiencies, including overuse of journal vouchers, increased need for analytics, issues with inter- and intra-governmental activities, lack of reconciliation and timely clearing of deposit/clearing account activities, reconciliations with subsidiary systems, budgetary to proprietary analysis, and fluctuation analysis. VA selected a federal shared service provider solution to modernize VA's financial management systems and processes to mitigate this weakness.
- (6) **Veterans Benefit and Education Actuarial Liability:** VA's financial statement auditor identified internal control deficiencies in the control environment related to the Compensation, Pension, Burial and Education (CP&E) actuarial estimates along with quality control and errors in the analysis of the models. VBA lacks a qualified and resident Chief Actuary managing and taking full responsibility for VA's CP&E modeling. VBA has awarded a contract for actuarial services and is taking action to hire an actuary. VA also provided estimates for three additional Education Benefits programs for FY 2017.
- (7) **Loan Guaranty Liability:** VA uses financial models to prepare accounting estimates for its mortgage guaranty liability for financial reporting purposes. A VA initiated independent review and the VA's financial statement auditor identified structural deficiencies, deficient internal controls and a governance environment that have led to several years of misstatements of the mortgage guaranty liability. VBA is working to implement recommendations provided by its independent reviewer and will evaluate and implement where possible the recommendations provided by the financial statement auditor.
- (8) **Chief Financial Officer (CFO) Organizational Structure:** VA's financial statement auditor reported a material weakness for the CFO organizational structure, noting VA operates under a decentralized environment with a fragmented financial management and reporting structure. The auditor stated the organizational structure does not operate in a fully integrated manner to enable effective financial reporting for internal and external purposes. In response to the material weakness, OM has engaged the VA CFO community and increased both communication and training events with leadership and field personnel and expanded information sharing regarding audit findings and other significant issues impacting the CFO community. Despite multiple collaboration efforts, the need continues for improved accountability and understanding of responsibilities for internal controls throughout the VA CFO community.

The Department noted noncompliance with: (1) FMFIA Sections 2 and 4; (2) the Anti-Deficiency Act; (3) Procurement Policy — Federal Acquisition Regulation and VA Acquisition Regulation; (4) the Improper Payments Information Act of 2002 (as amended by Improper Payments Elimination and Recovery Act of 2010 and the Improper Payments Elimination and Recovery Improvement Act of 2012); (5) Title 38 United States Code (U.S.C.) Section 5315, Interest and Administrative Cost Charges on Delinquent Payments of Certain Amounts Due the United States, and 31 U.S.C. Section 3717, Interest and Penalty on Claims; and (6) 38 U.S.C. Section 3733, Property Management.

17. EPA

pgs. 10-11; 15-16

FINANCIAL ANALYSIS AND STEWARDSHIP INFORMATION

Sound Financial Management: Good for the Environment, Good for the Nation

The financial management overview below highlights some of the EPA's most significant financial achievements carried out during the Agency's efforts to execute its mission to protect human health and the environment during FY 2017:

- DATA Act.** In FY 2017, the EPA submitted its first Data Accountability and Transparency Act (DATA) reporting to the U.S. Treasury's Data Broker. The DATA Act provides an easier way to understand how the Federal government spends taxpayer dollars by setting data standards to improve the quality of Federal spending data, and through the creation of a standard data exchange codifying this information into readable formats. This report contained information compiled and reconciled through the Agency's internal DATA Act Evaluation and Approval Repository. Use of this repository ensures the integrity of the Agency's data associated with the 57 DATA Act reporting standards provided to Congress through USASpending.gov on a quarterly basis.
- Payroll Cost Allocation.** This fiscal year the Agency implemented a new Payroll Cost Allocation (PCA) process linked to the PeoplePlus 9.2 Enhancement initiative. This effort improves the efficiency of the Agency's time and attendance system and cost allocation process. On October 1, 2017, PCA moved from PeoplePlus to Compass Financials allowing the Agency to utilize the cost functionality in the software, improving financial system integration.
- programs from OMB's high-risk list. In addition, the OIG's Improper Payments Elimination and Recovery Act (IPERA) compliance audit of the agency's FY 2016 reporting determined EPA was in full compliance with IPERA. This marked the fourth consecutive year of compliance for EPA, and the agency anticipates achieving a fifth year of compliance in FY 2017.
- Financial Leans.** The EPA has sustained operational excellence and maintained a culture of continuous improvement by completing four financial Lean events in FY 2017. These events have helped to reduce and remove waste, created a more transparent business process for customers, and streamlined each process in preparation for financial system enhancement. The Agency plans to continue streamlining financial processes to meet its goals of payment process modernization and to reduce the financial burden on taxpayers.
- Enterprise Risk Management.** To continue strengthening the Agency's approach on enterprise risk, which is defined as significant risk to accomplishing the Agency's mission, the EPA held two "Risk Based" trainings focused on implementing Enterprise Risk Management and identifying roles and responsibilities of the agency's strategic planners and management

- **IPERA Reporting.** The EPA continues to maintain sustained low improper payment rates across its principal payment streams. In FY 2017, statistical sampling in the Clean Water State Revolving Fund (CWSRF) and the Drinking Water State Revolving Fund (DWSRF) revealed very low improper payment rates of 0.18% and 0.06%, respectively, which is well below the statutory threshold of 1.5%. As a result, the agency plans to request removal of these integrity advisors. The Agency also established a risk liaison community designed to strengthen risk-based decision making, and developed a risk assessment tool to support senior leaders in completing key phases of the risk assessment process.
- **Agency Financial Statements.** For the 18th consecutive year, the EPA's OIG issued a "clean" audit opinion, unmodified, in the Agency's financial statements. This achievement

10

underscores EPA's commitment to presenting reliable and accurate financial data that is represented fairly in all material aspects.

- **Data Governance.** An intra-agency governing body was established for the financial data existing within EPA's IT systems. The primary function of the body is to provide leadership and oversight over the review and approval of data governance strategies and objectives. EPA's data governance group ensured policies, processes and procedures aligned to deliver data that is accurate, consistent, complete, and available to key stakeholders within the appropriate user community. This group also manages and communicates the Agency's data governance process, and continuously works toward improving the Agency's financial systems process.
- **Travel.** This fiscal year, the OIG performed a risk assessment on the EPA's travel card payments and purchases. By successfully implementing internal controls, set forth in guidance from OMB and the Agency's travel policy, the OIG stated a "low risk" declaration for erroneous or illegal travel card purchases and payment.

Financial Management for the Future

During times of environmental challenges, sound stewardship of the EPA's financial resources continues to be critical to the Agency's ability to protect the environment and human health locally, nationally, and internationally. Reliable, accurate, and timely financial information is essential to ensure cost-effective decisions for addressing land, water, air and ecosystem issues. To strengthen the EPA's financial stewardship capabilities, the Agency focuses on the fundamental elements of financial management: people and systems.

People: EPA leverages every available tool to recruit the best people with the necessary skills to meet tomorrow's financial challenges. Staff members are trained in financial analysis and forecasting to understand financial data and what it means. EPA is integrating financial information into everyday decision-making so that it maximizes the use of its resources.

Systems: In FY 2017, the EPA continued using a component-based approach to managing its financial systems. The system, called Compass, is based on a commercial-off-the-shelf software solution that addresses the Agency's most critical business needs. Compass has improved the EPA's financial stewardship by strengthening accountability, data integrity, and internal controls, on the following business areas:

- General ledger
- Accounts payable
- Accounts receivable
- Property
- Project cost
- Intra-governmental transactions
- Budget execution

Compass provides core budget execution and accounting functions and facilitates more efficient transaction processing. The system posts updates to ledgers and tables as transactions are processed and generates source data for the preparation of financial statements and budgetary reports. Compass is integrated with 15 agency systems that support diverse functions, such as budget planning, execution, and tracking; recovery of Superfund site-specific cleanup costs; property inventory; Agency travel; payroll; document and payment tracking; and research planning. Compass is a Web-based, open architecture application managed at the CGI Federal Phoenix Data Center, a certified shared service provider in compliance with the Financial Management Line of Business.

The EPA's financial systems modernization strategy builds on Compass and the previous migration to a Human Resources shared service provider through the implementation of additional components, subject to future review by OMB:

- Budget formulation
- Digital Accountability and Transparency Act of 2014 implementation
- Time and attendance system modernization/activating Compass' payroll cost allocation component
- Superfund imaging and cost accounting
- Payment systems, such as for travel, purchase card, and grant payments

15

The Agency continues to use an agile approach to develop, test, and refine Budget Formulation System modules, including performance and document preparation. The EPA is building partnerships with other agencies to expand use of the Budget Formulation System. The Agency is continuing to work on strengthening its financial data/reporting, particularly in its efforts to implement DATA Act requirements.

18. NASA

Pg. 28



NASA is proud to be the U.S. Agency charged with exploring the unknown in space and driving new advances in aerospace science and technology on behalf of the American public. Currently, we are seeking to implement sustainable long-term plans, preparing new missions, and developing new systems for the human exploration of the Moon, Mars, and deep space. We have plans for human missions to explore cis-lunar space (the region between Earth and the Moon), beginning with Exploration Mission-2 (EM-2).

One step we have already taken in this leap is the recruiting and training of a class of 12 new astronaut candidates, the largest astronaut class since 2000. Selected from the record-breaking 18,300 applications, the five women and seven men are training for missions on the International Space Station (ISS), commercial spacecraft, and deep space missions aboard the Orion spacecraft and Space Launch System (SLS) rocket. Before long, American astronauts will return to cis-lunar space to build and begin testing technologies and techniques needed to keep humans safe, healthy, and productive on a mission to Mars. Ranging from environmental control and life support to advanced propulsion and automated rendezvous and docking, these capabilities will be robust, affordable, sustainable, and adaptable to a variety of destinations in deep space.

In addition to human exploration, NASA's James Webb Space Telescope (Webb) is expected to launch in 2019 and be the premier scientific observatory of the next decade – unlocking the mysteries of the universe for humankind. Together, scientific discovery and human exploration are not only reaching out to unlock the mysteries of the cosmos; they are continuously improving and safeguarding life on Earth. NASA missions are contributing to better understanding of weather and natural disasters, like Hurricane Harvey and Hurricane Irma. There are new medical treatments resulting from NASA studies that research the effects of low-gravity and spaceflight impacts on the human body. NASA provides America with tools for leadership and inspiration in aerospace science and technology. Our technology developments are at the root of economic stability and growth for many industries, both bound to Earth and destined for space.

U.S. leadership in space is due in part to NASA's ability to inspire and create access to complex challenges. We continue to retain and serve as a unique national resource of engineers, scientists, technologists, and business specialists. Our goal is to enable all of NASA's space-based, air-based, and Earth-based research and innovation activities producing the best return on the Nation's investment.

Today, men and women all over the world are committed to expanding human knowledge of our place in the universe. Together with NASA, American companies are on the cutting edge of space technology, developing new launch vehicles, spacecraft, and instruments that will take us further into space faster than ever before.

We strive to accomplish our mission with the utmost care—recognizing that we are stewards of taxpayer dollars, critical human capital, and one-of-a-kind facilities. With guidance from the National Space Council, NASA will lead a new era of space technologies and advancements for our Nation.

For more information on our formalized strategic goals, please refer to NASA's 2018-2022 Strategic Plan, set for publication in February 2018.



19. USAID

pgs. 26-27; 34-35; 45-46

LOOKING FORWARD



Angellique M. Crumbly

AGENCY IMPACT

A critical mission unifies USAID: we partner to end extreme poverty and promote resilient, democratic societies while advancing our security and prosperity. The challenges we confront are complex, with intertwining roots in food insecurity, illiteracy, ill-health, disempowerment, marginalization, vulnerability, and both man-made and natural disasters. Therefore, USAID seeks multi-dimensional solutions that target both the symptoms of and pathways out of poverty. USAID's work directly enhances American, as well as global, security and prosperity. The United States is safer and stronger when fewer people face destitution, when our trade partners flourish, when nations can withstand crises, and when societies are freer, more democratic, and more inclusive, protecting the rights of all citizens.

USAID strives to maintain the excellence that makes us the world's premiere development agency. We will continue to prioritize sustainability and emphasize balanced partner engagement. We hope to spur innovation and competition, reduce administrative costs, and foster a culture of idea-sharing that facilitates progress toward self-reliance and self-sufficiency.

IDENTIFYING CHALLENGES

Going forward, USAID will continue to demonstrate American values and goodwill abroad, making investments that advance national security and economic prosperity. By demonstrating our commitment to continuous improvement, we learn, adapt, and grow.

REFINING FOREIGN ASSISTANCE ARCHITECTURE

USAID is one of more than 20 federal agencies that delivers foreign assistance. In concert with the Department of State (State), we have embarked upon a redesign initiative to examine how we can structure our processes and resources to better achieve our respective missions. USAID has an exceptionally strong foundation on which to build. Our workforce is mission-centered and resolute—a theme that resonated in the joint State-USAID listening survey completed in FY 2017. USAID is a federal leader in ensuring strategic alignment. At our strategic core is our determined pursuit of results. Yet the need to reconcile interagency priorities and leverage comparative advantage while advancing development outcomes requires significant collaboration and leadership. Planning and implementing revisions to the foreign assistance framework will bring significant changes to manage, but we hope these reforms will strengthen our core capabilities to empower people and countries. As we continue our transformational process, we will hone our approaches while maintaining our focus on doing the right things well.

INCREASINGLY COMPLEX OPERATING ENVIRONMENT

USAID implements programs worldwide in very remote areas and conflict zones. Due to logistical realities, and for the safety of our personnel and partners, we cannot immediately access all parts of the globe. Yet, to meet our commitment to the world's most vulnerable people and the American taxpayer, we must leverage our reach where practical. In the coming year, USAID will

continue to develop our capacity to work more strategically and effectively in the world's most challenging contexts. We are developing assessment approaches, leadership training, and design methodologies targeted to non-permissive environments. We will maintain efforts to optimize our overseas footprint. We will expand technological solutions to extend our reach virtually and we will continue to strengthen local partners, and enhance our toolkit to do so, with the aim of cultivating a new cadre of development leaders.

CYBERSECURITY THREATS

With interconnectedness comes risk exposure. Through its global presence, USAID has a large potential cyberattack surface. USAID continues to prioritize the security of its information technology (IT) investments. We will maintain the efforts that, this year, earned an "A+" grade on the federal IT Acquisition Reform scorecard. Furthermore, USAID is building the Development Information Solution, an integrated portfolio management system to link budget and the program cycle with streamlined data management. We have also deployed trainings for all Agency staff on information security and data privacy. Moving forward, USAID will continue its recognized federal leadership in delivering a modern IT infrastructure.

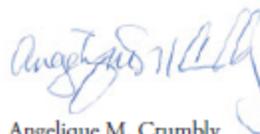
ENHANCING ACCOUNTABILITY

Like many others, USAID is asked consistently to do more with less. Effective stewardship of taxpayer funding is a hallmark of USAID, yet we must redouble our efforts. To meet this mandate, USAID will pursue greater operating efficiencies

and accountability for results—both from ourselves and from our implementing partners. We have identified and proposed for elimination duplicative processes and reports. We are seeking delegations of authority where necessary. We are targeting our reform efforts to buttress government-wide initiatives, such as the pursuit of best-in-class and managed contracts. We will continue to strive to reduce cycle times and streamline processes. Moving forward, USAID will explore how we can improve our program management, design, and monitoring capabilities so that programs have the resources needed to achieve objectives and remediate problems when necessary. In these efforts, robust, data-driven reviews will continue to guide implementation.

LOOKING TO THE FUTURE

Ultimately, USAID's goal is for our assistance to no longer be needed. As we work toward ever-greater partnership with other development partners, our host countries, and beneficiaries, we confront these challenges with realism and maintain our focus on delivering on our mission effectively and efficiently.



Angelique M. Crumbly
Performance Improvement Officer

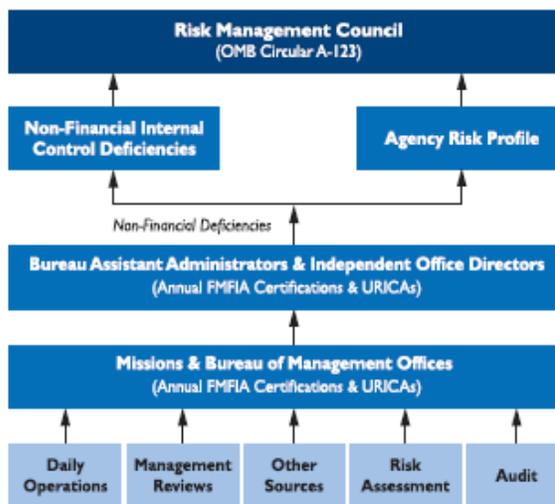
The new Agency-approved governance structure expands the scope and responsibilities of the previous Management Control Review Committee (MCRC) to the Executive Management Council on Risk and Internal Control (EMCRIC). The new Council integrates the Enterprise Risk Management (ERM) requirement with USAID's existing internal control structure and adds a critical new element, the Risk Management Council (RMC). The new ERM system also establishes an ERM Secretariat and a process for reporting enterprise risks. Bureaus, independent offices, and assessable units have appointed Risk Management Liaisons to facilitate efficient and effective identification, reporting, and treatment of risks. The EMCRIC is chaired by the Deputy Administrator and is comprised of senior leadership including: bureau and independent office heads; the Agency Counselor; the Chief of Staff; the Chief Risk Officer; the Executive Secretary;

the Chief Financial Officer; the Chief Information Officer; the Chief Acquisition Officer; the Chief Human Capital Officer; and the Director of the Bureau for Management, Office of Management Policy, Budget, and Performance. The Inspector General is a non-voting observer. The EMCRIC is the body responsible for reviewing and maintaining the Agency Risk Profile. The individual assurance statements from heads of operating units worldwide serve as the basis for the Agency's FMFIA assurance statement issued by the USAID Administrator. The assurance statements are based on information gathered from various sources, including managers' personal knowledge of day-to-day operations and existing controls, management program reviews, and other management-initiated evaluations. In addition, external reviews, audits, inspections, and investigations are considered by management.

The RMC, co-chaired by the Deputy Assistant Administrators from the Bureaus for Management (M), and Policy, Planning, and Learning, are responsible for assessing the roll-up of enterprise risks and non-financial internal control deficiencies, based on input from operating units. The RMC evaluates composite profiles and develops or updates an Agency Risk Profile that presents an Agency-level portfolio of risks, coupled with proposed risk responses, where appropriate, for EMCRIC review and approval.

During FY 2017, the Agency continued using the Uniform Risk and Internal Control Assessment (URICA) tool for conducting risk assessments of all Agency assessable units in support of FMFIA certification reporting. In an effort to begin integration of ERM, pilots were conducted in selected operating units to test and identify risks simultaneously with the internal control assessments. In addition, an initial Agency Risk Profile was produced using information gleaned from ERM pilot testing, newly reported and existing FMFIA and Government Management Reform Act deficiencies, Office of Inspector General (OIG) audit reports, and OIG management challenges. Full implementation and integration of ERM will occur during FY 2018, including issuance of a Risk Appetite Statement, introduction of an ERM training program, and full Agency-wide roll-out concurrently with the annual FMFIA exercise.

RISK MANAGEMENT COUNCIL OVERSIGHT



The Senior Assessment Team (SAT), chaired by the Agency's Chief Financial Officer, is responsible for evaluating deficiencies in financial internal control, as identified through the FMFIA certification process, audits, and any other related functions, as well as assessing, monitoring, and proposing appropriate corrective measures. The SAT reports financial internal control deficiencies deemed to be material weaknesses that will be included in the annual FMFIA assurance statement.

ENTERPRISE RISK MANAGEMENT

USAID implements its responsibility for Enterprise Risk Management (ERM) by building on a strong foundation and practice of risk management. Agency staff regularly assess and mitigate a wide variety of risks in order to ensure good stewardship of taxpayer funds and achievement of development and humanitarian assistance program goals. USAID staff also apply internal controls as continuous, operations-level safeguards. These ensure the Agency uses funds properly and supports the achievement of USAID program objectives.

In FY 2017, USAID advanced ERM in significant ways, improving governance, policy, and procedure to strengthen the management of risks across operating units and enhance integration of risk considerations in ongoing planning and management activities. These improvements resulted from USAID's internal culture of continuous process improvement and in response to external directives from the OMB in the revised Circular A-123 (<https://www.whitehouse.gov/sites/default/files/omb/memoranda/2016/m-16-17.pdf>).

In FY 2017, USAID approved an initial Agency Risk Profile, ERM governance structure, and initial Implementation Plan. The Agency revised the charter of its Management Control Review Committee (MCRC), formerly charged solely with reviewing internal controls, and reconstituted it as the Executive Management Council on Risk and Internal Control (EMCRIC). The new governance structure expands the scope and responsibilities of the former MCRC to integrate ERM with USAID's current internal control structure, and adds a critical new component by establishing the Risk Management Council (RMC) under the EMCRIC. The RMC assesses the roll-up of enterprise risks and non-financial internal controls in order to make recommendations to the EMCRIC. The Agency has also established an ERM Secretariat to support the RMC and a process for ERM risk reporting that utilizes bureau and independent office Risk Management Liaisons to facilitate top-down and bottom-up information flows. Establishing a Chief Risk Officer will be a component of the Agency's Redesign in FY 2018.

20. GSA

Pgs. 13, 23

Mission and Goals

The GSA Mission is to deliver the best value in real estate, acquisition and technology services to government and the American people.

The scope of the work we do at GSA is vast and varied, but the mission is simple and to the point. We serve the government and the American people. Through implementing our mission, we aspire to achieve three strategic goals:

- 1. Savings – Provide savings to federal departments and agencies.** We will use our purchasing power and expertise to deliver cost-effective real estate, acquisition and technology solutions to federal departments and agencies.
- 2. Efficiency – Improve the efficiency of operations and service delivery.** We will streamline our operations to offer high quality real estate, acquisition, and technology services that are valuable to federal departments and agencies.
- 3. Service – Deliver excellent customer service.** We will deliver excellent customer service to federal agencies and departments by making it easier to reliably meet their real estate, acquisition, and technology needs.

GSA Management Assurances



Statement of Assurance

The U.S. General Services Administration (GSA) management is responsible for managing risks and establishing and maintaining effective internal control and financial management systems that meet the objectives of the Federal Managers' Financial Integrity Act (FMFIA), the Federal Financial Management Improvement Act (FFMIA), and related statutory and federal policy guidance.

In accordance with OMB Circular No. A-123, Management's Responsibility for Enterprise Risk Management and Internal Control, GSA conducted its assessment of the effectiveness of internal controls over financial reporting, which includes the safeguarding of assets and compliance with applicable laws and regulations. Based on the results of the assessment, GSA can provide reasonable assurance that internal controls over operations, reporting, and compliance were operating effectively as of September 30, 2017.

Although FY 2017 was a strong year with marked improvement in GSA's management controls environment, we have identified and are mitigating several concerns.

During GSA's annual internal controls self-assessment process, our management team identified succession planning as an area of concern. GSA faces the same challenge as other federal agencies; many employees are retirement eligible and can leave the federal workforce. Workforce planning, which includes staffing and succession plans will mitigate the impact of high retirement eligibility in mission-critical occupations. This will be accomplished

through hiring, training, and development. In addition, maximizing employee engagement and employee performance will ensure the GSA workforce is prepared and able to meet the Agency's mission and agency performance goals.

Another area GSA is closely monitoring is the internal controls and financial management practices and procedures of legacy 18F and the Technology Transformation Service (TTS) (now a FAS Portfolio). As a result of an internal review and the recommendations in the Office of Inspector General Evaluation of 18F, JE17-001 (Oct. 24, 2016), GSA implemented stronger management controls over 18F. The internal review and OIG report identified opportunities for improvements in internal controls; including instances where work was started before signed agreements were in hand, resulting in Economy Act violations. GSA will continue to monitor compliance with these controls during FY 2018.

A further challenge related to the Federal Citizens Services Fund (FCSF) was identified and mitigated in FY 2017. GSA notified the Office of Management and Budget (OMB) of a potential Antideficiency Act (ADA) violation, which resulted from utilizing the FCSF to support search capability for state and local government websites. GSA corrected the situation by ending these services in February 2017. Another potential ADA violation is being reviewed related to the Acquisition Services Fund (ASF) apportionment for flow-through activity. GSA is implementing processes that more accurately forecast orders from our Federal partners and monitor order activity against apportioned budget authority.

21. NSF

pgs. 8; 22-23

Establishing Accountability over Large Cooperative Agreements

Going forward, NSF plans to continue strengthening its oversight by (1) finalizing guidance around an annual major facilities portfolio risk assessment, (2) strengthening the role and composition of the MREFC Panel to include life-cycle oversight of facilities, (3) adopting and implementing new guidance in areas such as management reserve and Internal Management Plans, and (4) formalizing a lessons-learned program and NSF Communities of Practice.

MREFC – Major Research Equipment and Facilities Construction

Internal Control over Financial Reporting—OMB Circular A-123, Appendix A

NSF's FY 2017 review for Internal Control over Financial Reporting consisted of tests of operational effectiveness and tests of control design. NSF evaluated the key controls to ensure they were functioning properly to mitigate risks of material misstatements in the financial reports and to support NSF

²¹ OMB Circular A-123: <https://www.whitehouse.gov/sites/whitehouse.gov/files/omb/memoranda/2016/m-16-17.pdf>

²² GAO Standards for Internal Control in the Federal Government: <http://www.gao.gov/products/GAO-14-704G>.

²³ COSO Internal Control Integrated Framework: <https://www.coso.org/Pages/ic.aspx>

MD&A-22

Management's Discussion and Analysis

management's financial reporting assertions. The process areas tested for operational effectiveness were Grants Management, Large Facilities Oversight, Travel Systems, Procure to Pay, and Financial Reporting alignment with DATA Act submission processes. As part of the test of design, NSF assessed whether key controls performed properly and whether the controls addressed the control object and business risk. The process areas tested for control design were undelivered orders, DATA Act implementation, and user controls over third party service providers.

Based on the results of the assessment, NSF provides reasonable assurance that its internal control over financial reporting is operating effectively and no material weaknesses were identified.

22. NRC

[pgs. 14-16; 23-25](#)

Security Goal Strategies

The NRC's FY 2014– 2018 Strategic Plan describes the seven safety goal strategies.

Future Challenges

The NRC's FY 2014– 2018 Strategic Plan describes agency's future challenges. The nuclear industry has maintained an excellent safety record at nuclear power plants over the past two decades as both the nuclear industry and the NRC have gained substantial experience in the operation and maintenance of nuclear power facilities. Maintaining this excellent safety record requires that the agency take proactive measures to ensure the accomplishment of its mission. The key challenges the agency faces are highlighted below.

Market Pressures on Operating Plants and License Applications

Market forces result in pressures to reduce operating costs. As a result, the NRC needs to be prepared to address potential shutdowns of facilities before license expiration and to continue to ensure that oversight programs identify degrading facility safety and security performance. Conversely, the lower capital costs of small modular reactors (under 300 megawatts) may offer industry a more attractive option to add new capacity. Several entities are seeking to submit license applications for small modular reactors in the next several years. The U.S. Department of Energy (DOE) is funding a program "to design, certify and help commercialize innovative small modular reactors in the United States." The NRC is developing a licensing framework for these as well as other advanced reactors.

Significant Operating Incident at a Non-U.S. Nuclear Facility

A significant incident at a nuclear facility outside the United States could cause the agency to reassess its safety and security requirements, which could change the agency's focus on some initiatives related to its objectives until the situation stabilizes.

Significant Operating Incident at a Domestic Nuclear Facility

A significant incident at a U.S. nuclear facility could cause the agency to reassess its safety and security requirements, which could change the agency's focus on some initiatives related to its objectives until the situation stabilizes. Because the NRC's stakeholders are highly sensitive to many issues regarding the use of radioactive materials, even events of relatively minor safety significance could potentially require a response that consumes considerable agency resources.

International Nuclear Standards Developments

International organizations, such as the International Atomic Energy Agency (IAEA), will continue to develop and issue standards and guidance affecting global commitments to nuclear safety and security. To ensure that the best results are achieved both domestically and internationally, the NRC needs to proactively engage in these international initiatives and to provide leadership in a cooperative and collegial manner.

International Treaties and Conventions

As part of the international response to lessons learned from the Fukushima Dai-ichi nuclear accident in Japan, the international nuclear regulatory community is reviewing the Convention on Nuclear Safety. As one of the contracting parties to the Convention, the NRC is a member of the working group that is reviewing the Convention. Likewise, the NRC participates in the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management.

The ratification by the United States of international instruments related to the security of nuclear facilities or radioactive materials could potentially impose binding provisions on the Nation and the corresponding governmental agencies, such as the NRC and the DOE.

Globalization of Nuclear Technology and the Nuclear Supply Chain

Components for nuclear facilities are increasingly manufactured overseas, resulting in the challenges of providing effective oversight to ensure that these components are in compliance with NRC requirements. In addition, the continuing globalization of nuclear technology is driving the need for increasing international engagement on the safe and secure use of radioactive material.

Significant Terrorist Incident

A sector-specific credible threat or actual significant terrorist incident anywhere in the United States would result in the U.S. Department of Homeland Security raising the threat level under the National Terrorism Advisory System. In turn, the NRC would similarly elevate the oversight and response stance for NRC-regulated facilities and licensees. Potentially, new or revised security requirements or other policy decisions might affect the NRC, its partners, and the

regulated community. In a similar fashion, a significant terrorist incident at a nuclear facility or activity anywhere in the world would need to be assessed domestically and potentially lead to a modification of existing security requirements for NRC-regulated facilities and licensees.

Legislative and Executive Branch Initiatives

Congressional and Executive Branch initiatives concerning cybersecurity may potentially impact the NRC's regulatory framework for nuclear security. If the NRC were to become concerned about an aspect of a bill or policy initiative that had been introduced, the staff would consult the Commission to develop a strategy for making such concerns known.

Lost, Misplaced, Intercepted, or Delayed Information

With the increased use of mobile devices and alternative storage options, the introduction of new communication technologies, and the increased use of telecommunication, there is a heightened risk that sensitive information held by the NRC or its licensees can be lost, misplaced, or intercepted and fall into the hands of unauthorized persons.

Enterprise Risk Management and Programmatic Internal Control

Enterprise Risk Management (ERM) provides an enterprise-wide, strategically-aligned portfolio view of organizational challenges that provides better insight about how to most effectively prioritize resource allocations to ensure successful mission delivery. A principal component of ERM is Internal Control, which the U.S. Government Accountability Office in GAO-14-704G, "Standards for Internal Control in the Federal Government," defines as "a process effected by an entity's oversight body, management, and other personnel that provides reasonable assurance that the objectives of an entity will be achieved."

On July 15, 2016, the OMB issued a revised Circular A-123, "Management's Responsibility for Enterprise Risk Management and Internal Control," complete with specific ERM requirements

for Federal agencies. Soon after, the NRC developed an ERM framework. The framework highlighted the agency's strategy to fully comply with the OMB's ERM requirements. The strategies include the following:

- **updating** the agency's Internal Control management directive to incorporate ERM
- **leveraging** appropriate agency governance organizations and processes currently in place such as the NRC Internal Control Governance Framework, and the Quarterly Performance Review meetings
- **standing up** the agency's Programmatic Senior Assessment Team (PSAT) as the agency evaluation structure for enterprise risks
- **developing and disseminating** ERM and Internal Control awareness training to all NRC management and staff
- **incorporating** ERM into executive decision-making, and management's evaluation of the NRC's internal control and reasonable assurance processes

23. OPM

pg. 30

MANAGERS' FINANCIAL INTEGRITY ACT (FMFIA)

FMFIA requires agencies to establish internal control and financial systems that provide reasonable assurance that the following objectives are achieved:

- Effective and efficient operations,
- Reliable financial reporting, and
- Compliance with applicable laws and regulations.

It also requires that agencies conduct an evaluation of their systems of internal control and that the head of the agency provide an annual Statement of Assurance to the President and the Congress on whether the agency has met this requirement. OMB Circular A-123, *Management's Responsibility for Enterprise Risk Management and Internal Control*, provides the implementing guidance for FMFIA and defines management's responsibility for managing risk and establishing and assessing internal control. OPM's Risk Management Council oversees the Agency's internal control program. The Risk Management Council is chaired by the Chief Management Officer and includes senior representatives from all major OPM organizations. The Risk Management and Internal Control group (RMIC) within the Office of the Chief Financial Officer (OCFO) has primary responsibility for coordinating the annual assessment of internal control.

OMB Circular A-123, Appendix A also requires that the agency head provide a separate assurance statement on the effectiveness of internal control over financial reporting (ICOFR). The assurance on ICOFR is a component of the overall FMFIA assurance statement. RMIC performs the ICOFR assessment under the guidance of the OCFO Senior Assessment Team, which is comprised of the Chief Financial Officer (CFO), Deputy CFO, Associate CFOs, Deputy Chief Information Officer, and other key OCFO personnel.

OPM evaluated its systems of internal control by conducting an assessment of its internal control over Agency operations and compliance with applicable

OPM Fiscal Year 2017 Age

laws and regulations. As part of the assessment and under the oversight of the Risk Management Council, RMIC requested that office heads conduct self-assessments of the internal controls under their purview and provide an assurance statement detailing whether their internal control systems met the requirements of FMFIA. Office heads also submitted documentation supporting their internal control objectives, risk assessments, and control activities in individual units under their purview and describing the results of their self-assessments. RMIC reviewed the majority of those submissions along with applicable reports of audits performed by the Office of the Inspector General throughout the reporting period to determine if there were other material weaknesses that should be reported in the assurance statement.

24. SBA

pgs. 26; 32

As such, recovery rates of defaulted 504 loans are, with some noticeable time lag, significantly impacted by the pricing trend in this sector. Real estate prices have been on the rise since the latter part of 2009, and as of 2017, commercial real estate prices are increasing.

Quarterly information on the status of SBA's loan portfolio, including outstanding balances and approvals by loan program and purchase rates, is available on SBA's website at www.sba.gov/performance.

FORWARD LOOKING ANALYSIS

The SBA is committed to maintaining and strengthening the nation's economy through the growth of small businesses. While much work has been done to support America's small businesses since the creation of the SBA in 1953, the Agency is committed to ensuring it can adapt to a changing environment. The following areas present the greatest insights into how the Agency shapes its programs and responds to entrepreneurs and small business owners.

more online tools and adapt Agency processes to the 21st century. The Agency continues to make progress on this front through tools like SBA One, Certify.SBA.gov, and Lender Match. Greater advancements in technology will continue to develop and shape how small businesses operate and how the Agency responds to and supports small businesses.

Threats from Disasters

A natural disaster can destroy lives, businesses, and communities in little time. While the SBA has many capabilities to respond to hurricanes, tornados, forest fires, and floods, the growing threat and number of these occurrences remain a serious concern, particularly with a changing climate. This year, hurricanes Harvey, Irma, and Maria have demonstrated the threats from an active hurricane season. To this end, small businesses must adapt by planning in advance where to produce and sell goods and services. Disaster preparedness is a key component of SBA's Disaster Assistance program and has helped many small businesses prepare for the unexpected. Among these growing threats, the SBA must be more nimble while simultaneously responding to multiple, large-scale disasters.

An Ever-changing Economy

A small business often feels the first impacts of a slowing economy. Unemployment, taxation, and regulatory uncertainty all determine whether entrepreneurs will invest their time and resources into a new venture. Without large reserves of capital like many corporations, a small business can be shuttered within months during economic decline. To meet these needs, the SBA plays a key role in supporting access to capital. The Agency will continue to depend on lenders to issue capital. However, the decline in the number of banks and credit unions is a concern. As fewer lenders remain, small businesses must become nimbler when searching for capital, and the SBA must provide this support in an ever-changing economy.

Advancements in Technology

It would have been unimaginable 30 years ago to obtain a loan from a bank in Connecticut, submit a patent for a new idea, and then develop and sell that product in the international marketplace all while working from one's home in North Carolina. Today, technology has evolved to the point that entrepreneurs have greater access to markets and more capabilities to start and expand their businesses. Therefore, the SBA must be aware of these technological advancements to better communicate and share successes for entrepreneurs across the country. The SBA needs to develop

An Evolving Workforce

The SBA workforce continues to age and enter a period where the majority of its employees have reached retirement eligibility. As baby boomers retire, the Agency continues to search for ways to recruit and retain the best talent. Competition with industry and other agencies is strong, and retention of new employees can be challenging. The Agency is identifying critical mission areas and developing workforce plans to ensure that it understands where gaps exist. At the same time, the Agency seeks to ensure that its workforce is representative of the public it serves and that it can effectively communicate with entrepreneurs and small business owners in meeting their needs. To this end, the SBA has begun a series of training sessions for its field staff to ensure that they have the tools to help small businesses succeed.

To address these areas and continue enhancing customer service to small businesses, the Agency has instituted processes to help mitigate and improve performance. For example, the SBA is identifying ways to streamline the processing of business development and loan applications. At the same time, new information systems will reduce staff requirements to collect reports and data for compliance purposes, which will allow for greater time supporting small businesses.

ANALYSIS OF SBA'S SYSTEMS, CONTROLS, AND LEGAL COMPLIANCE

Internal Control Environment

The SBA believes that maintaining integrity and accountability in all programs and operations is critical for good government. The ability to demonstrate consistent responsible stewardship over assets and resources is a sign of responsible leadership. SBA's commitment to integrity and ethical values with an effective system of internal controls ensures that every employee remains dedicated to the efficient delivery of services to customers and maximizes desired program outcomes. The SBA has developed and implemented management, administrative, and financial system controls to reasonably ensure that:

- Programs and operations achieve intended results efficiently and effectively;
- Resources are used in accordance with the mission of the Agency;
- Programs and resources are protected from waste, fraud, and mismanagement;
- Program and operation activities are in compliance with laws and regulations; and
- Reliable, complete, and timely data are maintained and used for decision-making at all levels.

Each office within the SBA implements or maintains effective internal controls over operations, reporting, and compliance to achieve programmatic goals. Each year, the SBA conducts an assessment of internal control as required by the Federal Managers' Financial Integrity Act (FMFIA) of 1982 in accordance with the Office of Management and Budget's (OMB) Circular A-123, *Management's Responsibility for Enterprise Risk Management and Internal Control*. The FMFIA requires that the assessment results be reported to the President and Congress in a statement of assurance. The SBA Administrator provides the statement of assurance based on the self-assessment of program managers, internal control reviews, and audits and reviews done by the Government Accountability Office (GAO) and SBA's Office of Inspector General (OIG).

SBA's Office of Internal Controls (OIC) provides training and tools, including checklists designed specifically for program support offices and district offices, to aid management in assessing and documenting the

effectiveness of internal controls within their respective area of responsibility. These assessments are performed based on the five components and 17 principles of internal control framework prescribed in GAO's *Standards for Internal Control in the Federal Government*, known as the Green Book.

In support of the Agency's internal control program, the Senior Assessment Team (SAT) oversees the assessment of internal controls conducted by the OIC and directs compliance with the requirements of the OMB Circular No. A-123, Appendix A, *Internal Control Over Financial Reporting*. The SAT, chaired by the Chief Financial Officer and comprised of SBA managers from the major programs and support offices, meets monthly to discuss the progress of the internal control assessment and other emerging internal control matters. The SAT employs a risk-based approach in the selection of processes and systems for a more robust internal control evaluation. SAT members may request additional reviews of business processes that have no material impact on the financial statements but did present some potential for risk or exposure to the Agency. The OIC documents the process and key controls, evaluates and tests the design and effectiveness of controls, and presents the results to the SAT. Each office is responsible for developing and implementing corrective actions for any reported deficiencies. Based on the evaluation of business processes in FY 2017, the OIC identified a number of deficiencies in the internal control over financial reporting, including several in SBA's key business processes. The SAT evaluated the review findings and determined that none reached the level of material weakness.

The SBA Enterprise Risk Management Board continued to oversee and guide SBA's enterprise risk management efforts. The Board is chaired by the Deputy Administrator and comprised of senior leaders from major SBA programs and support offices. The Board continues to consolidate, assess, and prioritize enterprise-level risks and to conduct deep dive assessments on high-impact risks. The Board assigns responsibility for risk response and ongoing monitoring of the risk environment. In addition, the Board has begun the process of strengthening integration efforts with agency strategic planning and performance management. During FY 2017, the Board undertook efforts to better align the Agency's process with GAO's risk management framework, which successfully resolved the related long-standing management challenge previously reported by GAO.

25. SSA

pg. 25

LOOKING FORWARD – FACING OUR CHALLENGES

The Social Security Administration touches the lives of nearly every member of the public. For more than 80 years, we have delivered critical services at significant times like birth, marriage, retirement, disability, and death. The public expects and deserves well-managed programs that provide timely and accurate payments.

Our priorities and goals for the coming years will focus on delivering services effectively, improving the way we do business, and ensuring stewardship. We must be able to deliver our services effectively to the people who come to us for assistance regardless of whether it is in-person, on the telephone, or online. As we interact with the public every day, our employees experience firsthand the impact of our programs. We understand that doing our work well matters. We know that our programs are not stagnant and that advancements in technology provide opportunities to do business differently, and often more efficiently and conveniently.

We must continuously evaluate our policies and business processes using data and modern methods to ensure we meet service demands that reinforce efficient and effective service. Recognizing that our current technology infrastructure and existing business system would not allow us to serve the public the way we want or the way they expect us to, we developed a plan to modernize our IT systems. This modernization effort is foundational to our overall ability to improve service to the public.

We are committed to being good stewards of taxpayer dollars to ensure the public has confidence that we manage their tax dollars wisely. We take our stewardship of our programs seriously and we will continue to demonstrate a commitment to sound management practices. To ensure stewardship and efficient administration of our programs, we will focus our efforts in three major areas: improving program integrity, enhancing our fraud prevention and detection activities, and improving workforce performance and increasing accountability.

As we have done since 1935, we will continue to monitor risks to our progress, seize opportunities for improvement, and evolve to meet the public's changing needs.

TAB G

RISK REPORTING

APPENDIX A

Project History and Milestones

December 2018

PROJECT OBJECTIONS

The issuance of [Statement of Federal Financial Accounting Standards \(SFFAS\) 51, Insurance Programs](#), on January 18, 2017, effectively concluded the first phase of risk assumed. For the history of the risk assumed project and milestones for phase I, please see <http://www.fasab.gov/ra-insurance-programs/>.

In phase II, the Board will holistically review significant risk events other than adverse events covered by SFFAS 51, Insurance Programs, to determine accounting standards that provide concise, meaningful, and transparent information regarding the potential impact to the fiscal health of the federal government.

HISTORY OF BOARD DELIBERATIONS

October 19-20, 2016 Board Meeting

At the October 19, 2016, Board meeting, the risk assumed – phase II began.

The Board reviewed staff's high-level gap analysis presented in table 1: Analysis of Federal Accounting Standards in Relation to the IMF [International Monetary Fund] Recommendations for Disclosing Fiscal Risks and table 2 from the Australian Statement 8: Statement of Risks.

The Board agreed that an extensive gap analysis is necessary to determine the risk information that the consolidated financial report of the U.S. Government includes and how it is presented, the extent to which FASAB can align with enterprise risk management (ERM) as prescribed by The Office of Management and Budget Circular A-123, *Management's Responsibility for Enterprise Risk Management and Internal Control*, and the Board's preference for presenting risk assumed information going forward.

For the gap analysis, the Board agreed to determine the following:

- If federal government reporting is transparent enough for estimates and uncertainty around significant risks with a focus on broad risk categories, such as an economic downturn where revenues go down and benefit program costs go up

- If there is a significant gap in reporting to be addressed for individual risk items, such as treaties, commitments by the federal government, and intergovernmental dependencies with state and local governments
- How to present summarized risk events at the government-wide level for cross-cutting agency efforts, such as disaster relief, with access to detail at the agency level

December 19-20, 2016

At the December 20, 2016, Board meeting, the Board approved a framework for the risk assumed gap analysis. Members agreed that categories should not be a laundry list of events but instead should be principle-based and broad enough to encompass current and future significant risk events. The scope will include past and future events and whether uncertainty is adequately explained. Staff will review past financial reports to understand what was included before and after recent large events, such as the 2008 financial crisis, at the agency and government-wide levels.

Staff will utilize roundtable discussions to discover if current disclosures are clear, relevant, and add value in relation to the available standards. If roundtable participants do not feel that current disclosures are clear, relevant, or valuable, the group will discuss what is missing and should be included.

Staff will work on the gap analysis over the next several months and present findings and recommendations to the Board upon completion.

June 21-22, 2017

Members did **not** want to include discussions that

- predict unforeseen catastrophes and their potential financial effect;
- trends for using emergency funding as an indicator of fiscal exposure to risk shocks;
- comparisons of estimates to actuals;
- how past risk events were managed; or
- a separate risk section [as presented in the USAFacts 10-K Report -risk section—Item 1A Risk Factors] within federal financial reports.

Members **did want to**

- include past events that affect the current financial position;

- include and define major risk events with a relationship to long-term sustainability that are not already reported;
- use the principle-based broad risk categories as a foundation for continuing the gap analysis; and
- present meaningful streamlined information as a broad analysis rather than specific details.

October 25-26, 2017

According to the project objective, the risk assumed project strives ... to determine accounting standards that provide concise, meaningful, and transparent information regarding the potential impact to the fiscal health of the federal government. However, understanding what risks affect U.S. financial sustainability and why they do is very challenging. Therefore, as part of the ongoing gap analysis, staff reviewed SFFAS 2, Accounting for Direct Loans and Loan Guarantees, to learn how risk is currently disclosed in the financial statements.

Staff conducted research with the Department of Education, Department of Housing and Urban Development, Small Business Administration, and the Government Accountability Office and learned that agencies cannot specifically identify their users. In addition, reporting is inconsistent, extremely detailed, and burdensome. This not only affects preparers, but also users.

On October 26, 2017, staff presented these findings at the Board meeting to determine if members wanted to pilot amendments to SFFAS 2 to develop a framework for how to address risk assumed holistically.

Members agreed and requested that staff

- identify user groups to analyze risk factors, beyond those used to calculate credit subsidy reestimates, to help build a risk profile;
- develop a framework for how to discuss measurement uncertainty;
- consider how to discuss the “why” behind the “what” of risk;
- present sensitivity analysis at a future meeting; and
- pilot amendments to SFFAS 2 to develop a model/framework for how to address risk assumed holistically.

FEBRUARY 21-22, 2018

The Board hosted an **ERM risk profiling education session**. The panel discussed the following:

- Ms. SallyAnne Harper, a founding member and immediate past president of the Association for Federal Enterprise Risk Management (AFERM), provided a high-level review of federal ERM.
- Mr. Tom Brandt, the Chief Risk Officer at the Internal Revenue Service (IRS) and AFERM President Elect, presented a review of IRS's risk profiling processes, including risk identification, categorization, assessment, quantification, measurement, and modeling.
- Mr. Mike Wetklow, Deputy Chief Financial Officer (CFO) and Division Director for Financial Management, National Science Foundation (NSF), presented NSF's ERM implementation process, including a discussion about risk appetite as an integral part of risk profiling.
- Mr. Daniel Fodera, Lead Management Analyst, Program Management Improvement Team, Directors of Field Services, Federal Highway Administration (FHWA), explained the tools used in ERM risk profiling, including the use of a heat map at FHWA.

The Board learned the following main points:

- Risk assessment is integrated into strategic planning and investment decision making to determine priorities and objectives.
- Senior management is responsible for setting risk appetite to determine the most significant risks that could impact the organization's strategic mission.
- Risk appetite includes an analysis of both the likelihood and impact of events.
- Most agencies are just beginning to develop their ERM processes; a few are moving into a more mature model.

Directly following the education session, the Board discussed whether to leverage ERM risk profiling as identified in OMB Circular A-123, *Management's Responsibility for Enterprise Risk Management and Internal Control*.

The Board agreed that staff should explore how to incorporate OMB A-123 risk profiling in the project; however members noted the following concerns:

- The Board should determine what type of risks to focus on: performance/programmatic—MD&A and/or financial impact—disclosure notes.

- The Board should determine what risks are not currently included in financial reports through working groups and determine the consequences of not including certain risks.
- The Board should consider producing best practices guidance if the standards are complete and agencies need additional help.
- The Board should prevent risk identification from turning into a compliance exercise that might affect the ERM process.
- The Board should consider how agency internal ERM processes might be affected by external financial reporting and the related audit.

APRIL 25-26, 2018

During the April 2018 meeting, staff presented the gaps for reporting RA as identified from the nine round tables conducted over the past year. Many round table participants were interested in reporting on full program costs, including key risk factors and assumptions. Some believed a **clearer understanding of uncertainties regarding estimates** would help facilitate better management decisions and **an understanding of financial performance**. These gaps will help to establish a framework for reporting RA holistically in the financial reports. This framework may include new or updated note disclosures and improvements to management's discussion and analysis (MD&A).

For MD&A improvements the RA and MD&A Improvements projects collaborated to present recommendations to improve MD&A. The projects collaborated because the findings from the separate round tables were the same—**financial statement users want to understand the financial performance for major programs and not have to sift through dense, duplicative strategic performance information that can be found in the agency performance report**. As a result, staff recommended a new Statement that would maintain the current principles but rescind Statement of Federal Financial Accounting Concepts (SFFAC) 3, *Management's Discussion and Analysis*, and Statement of Federal Financial Accounting Standards (SFFAS 15), *Management's Discussion and Analysis*.

The Board directed staff to consider previously discussed concerns regarding MD&A, review existing MD&A concepts and standards, and determine what changes might be needed. Staff will also collaborate with the Office of Management and Budget to determine whether form and content guidance could help guide improvements.

JUNE 27-28, 2018

The RA and MD&A Improvements projects continued to collaborate to request a more integrated format for MD&A.

Members agreed to remove the requirement to segment information in the MD&A. SFFAS15 currently requires management to discuss topics in discrete sections of the MD&A. Removing this requirement would allow flexibility in formatting MD&A and facilitate an integrated discussion about financial performance. The discussion should include the rationale for material changes in accounting elements, such as assets, liabilities, and/or net costs.

Staff originally presented a framework that would include a financial performance discussion for each responsibility segment presented in the statement of net cost. The discussions would inform users on the financial impact of key risks to the segment. However, the Board determined that key risk factors may affect entities at different levels and requested staff to present an alternative framework. The framework should be flexible enough to integrate risks that had or will have a significant financial impact at the level best defined by management.

Members requested that staff develop principle-based standards to address the different types of risks that may have a significant financial impact on the government-wide financial position, condition, or results of operations. To tell the entire financial story, members believed that management should discuss what actions are being taken to address current and future risk drivers, as well as forward-looking information.

August 29-30, 2018

To better reflect the objectives, the risk assumed – phase II project was **renamed to the risk reporting project**.

The Board reviewed the measurement uncertainty framework it had requested at the October 2017 meeting. Because measurement uncertainty affects a number of estimates throughout the financial statements, the Board revisited the status of the risk assumed project. Members noted that the focus on risk assumed improved decisions in a number of projects despite the challenge of identifying specific risk measures as implied by the term “risk assumed.”

Members agreed that the risk assumed project should continue but is not likely to result in a specific measure of “risk assumed.” To avoid this expectation, the Board decided to change the project name to “risk reporting.” Members directed staff to work with the project leads of the reporting model phase I: MD&A and stewardship investments improvements project and the note disclosures project. Through this collaboration, the risk reporting project could address the principles needed for reporting financial and non-financial risks as well as the principles needed to account for measurement uncertainty.

TAB G

RISK REPORTING

APPENDIX B

Institute of Chartered Accountants in England
and Wales [ICEAW]

Reporting Business Risks:
Meeting Expectations, 2011

DECEMBER 2018



**FINANCIAL
REPORTING
FACULTY**

REPORTING BUSINESS RISKS: MEETING EXPECTATIONS

INFORMATION FOR BETTER MARKETS INITIATIVE



Reporting Business Risks: Meeting Expectations forms part of the *Information for Better Markets* thought leadership programme of ICAEW's Financial Reporting Faculty.

Requirements for businesses to report their risks have now been in place in a number of countries for some years, and there seems to be a common view that their results have been disappointing. There is widespread agreement that businesses should report better information about the risks they face, and this determination has been reinforced by the wish to avoid another global financial crisis.

But before fresh requirements are introduced, we need to understand why good risk reporting has proved to be so difficult in practice and why risk reporting may prove to be less useful to investors and other users of corporate reporting than has generally been assumed.

In this report we look at the problems and limitations of risk reporting, but also suggest how it could be improved.

ICAEW operates under a Royal Charter, working in the public interest. As a world leading professional accountancy body, ICAEW provides leadership and practical support to over 136,000 members in more than 160 countries, working with governments, regulators and industry to ensure the highest standards are maintained.

The ICAEW Financial Reporting Faculty provides its members with practical assistance and support with IFRS, UK GAAP and other aspects of business reporting. It also comments on business reporting issues on behalf of ICAEW to standard-setters and regulators. Its *Information for Better Markets* thought leadership programme subjects key questions in business reporting to careful and impartial analysis so as to help achieve practical solutions to complex problems. The programme focuses on three key themes: disclosure, measurement and regulation.

We welcome comments and enquiries on this work and on the other aspects of the *Information for Better Markets* programme. To contact us, please email bettermarkets@icaew.com.

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REPORTING BUSINESS RISKS: MEETING EXPECTATIONS

INFORMATION FOR BETTER MARKETS INITIATIVE

CONTENTS

EXECUTIVE SUMMARY	iii
1. THE DEMAND FOR RISK REPORTING	1
1.1 Objectives of the report	2
1.2 What is risk?	3
1.3 Growing demand	4
1.4 ICAEW's earlier work	6
1.5 Outline of the report	8
1.6 Chapter summary	9
2. EXPERIENCE OF RISK REPORTING	11
2.1 The evidence	12
2.2 Performance discussion as risk disclosure	14
2.3 Discussion of the evidence	14
2.4 Risk reporting and the financial crisis	15
2.5 A puzzle	16
2.6 Chapter summary	16
3. RISK REPORTING CHALLENGES	19
3.1 Five challenges	20
3.2 Inherent unreliability	20
3.3 Costs exceed perceived benefits	22
3.4 Generic risk reporting	24
3.5 Risk management disclosures	25
3.6 Inevitable limitations	27
3.7 Users' responses to risk information	28
3.8 The cost of capital problem	29
3.9 Realistic expectations	30
3.10 Chapter summary	30
4. THE WAY FORWARD	33
4.1 Better risk reporting	34
4.2 Tell users what they need to know	35
4.3 Focus on quantitative information	36
4.4 Integrate into other disclosures	38
4.5 Think beyond the annual reporting cycle	41
4.6 Keep lists of principal risks short	42
4.7 Highlight current concerns	43
4.8 Report on risk experience	44
4.9 Chapter summary	44

APPENDIX 1: REQUIREMENTS FOR RISK DISCLOSURES	47
A1.1 US	47
A1.2 EU	48
A1.3 Germany	48
A1.4 UK	48
A1.5 Basel II Accord	49
A1.6 IFRS	49
APPENDIX 2: CALLS FOR IMPROVED RISK REPORTING	53
A2.1 <i>Operating and Financial Review</i>	53
A2.2 <i>Improving Business Reporting – A Customer Focus</i>	54
A2.3 Senior Supervisors Group	54
A2.4 IASB’s management commentary framework	55
A2.5 International Corporate Governance Network guidelines	56
A2.6 Financial Reporting Council	56
APPENDIX 3: RESEARCH EVIDENCE ON RISK REPORTING	57
A3.1 US	57
A3.2 Canada	59
A3.3 Germany	59
A3.4 Italy	60
A3.5 UK	61
A3.6 Banks	62
A3.7 The covariance of profitability	63
A3.8 Accounting and the variability of returns	63
A3.9 Accounting and the probability of default	64
APPENDIX 4: RISK REPORTING AND THE FINANCIAL CRISIS	65
A4.1 The response to the crisis	65
A4.2 Possible explanations	65
A4.3 Research findings	66
A4.4 Other investigations	66
A4.5 Discussion	67
ACKNOWLEDGEMENTS	74
BIBLIOGRAPHY	75

EXECUTIVE SUMMARY

Chapter 1: The demand for risk reporting

A growing demand for better reporting of business risks has emerged in recent decades. This is based on the belief that improved understanding of business risks by investors and other users of corporate reporting should lead to better stewardship of companies and to a more efficient allocation of resources.

It is generally accepted that there was a widely-shared underestimation of risk before the financial crisis of 2007 and beyond. This has reinforced calls for improved risk reporting, by banks in particular, in the expectation that it should help make future crises less likely. But the crisis has also led to calls for better risk reporting by companies in all sectors.

The demand for better risk reporting is an entirely legitimate one, and risk reporting can and should be improved. But careful consideration needs to be given to how it should be improved and to how far the expectations of all those who now call for change can be met. Risk in business is about much more than the possibilities of corporate failure. Yet unexpected collapses, especially when there is a rash of them in a crisis, inevitably focus attention on the quality of risk reporting and may give rise to unrealistic expectations that better risk reporting could prevent future failures. But in a competitive economy business failures are inevitable, and it would be unreasonable to expect risk reporting to provide a reliable early warning of which businesses are most likely to fail – still less to prevent their failure.

This report is intended as a timely contribution to debate about how risk reporting should evolve. It reviews both the general experience of risk reporting to date and the risk reporting of financial institutions before the crisis (Chapter 2), considers why risk reporting is thought to have been disappointing (Chapter 3), and suggests ways to improve it (Chapter 4).

Chapter 2: Experience of risk reporting

Researchers who have looked at the experience of risk reporting by businesses across different sectors often express a degree of disappointment with it, sometimes suggest that disclosure requirements have had limited effect, and tend to make comments along the lines that there is ‘formal disclosure but substantial non-disclosure’. Actual research findings are mixed. While there is some evidence that both quantitative and qualitative risk reporting may have been useful, there is also evidence that qualitative risk reporting is not considered useful by some users of corporate reporting. Indeed, users appear to have conflicting views on risk reporting – some finding it useful, some not.

As for banks specifically, there is a widespread and understandable view that there must have been inadequate risk reporting in the run up to the financial crisis. There appears to be little evidence so far, though, that qualitative risk reporting before or during the crisis failed to reflect banks’ assessments of the risks that they faced. It seems more likely that the misleading impression given by qualitative risk reporting ahead of the crisis was in most cases attributable to banks’ mistaken assessments of risk, rather than to a failure to report recognised risks. These misperceptions of risk were widely shared, and not peculiar to bankers. But with the benefit of hindsight, it seems reasonable to conclude that the requirements for banks’ quantitative, analytical risk disclosures before the crisis were inadequate, and there may also have been a degree of non-compliance.

Chapter 3: Risk reporting challenges

We identify five main reasons why the usefulness of risk reporting by businesses across different sectors sometimes seems to be in doubt:

- It is impossible to know even after the event whether most qualitative, and some quantitative, risk reporting is accurate or inaccurate. This must limit the reliance that users can place on it.

- There are often competitive costs to informative risk disclosures and they also have potential costs for managers. These costs may exceed the perceived benefits of risk reporting, leading to uninformative disclosures. Indeed, risk reporting creates its own risks and so needs to be undertaken by preparers, and interpreted by users, as an exercise in risk management.
- It may well be appropriate to comply with requirements for the provision of risk lists by making generic disclosures, even though they will be seen as boilerplate.
- The effectiveness of a firm's risk management depends on the quality of its managers, and this is something that statements of the company's attitude to risk and disclosures of internal structures and procedures are unlikely to reveal.
- There are some risks that firms will never report and others that they are always liable to understate.

For many users, therefore, risk lists may provide little if any useful new information. When they do provide new information, it may be difficult for users to know how to reflect it in their own decisions.

Because of the problems with risk reporting that we have identified, it is unclear whether improved risk disclosures actually reduce the cost of capital, as had been hoped. It is possible that they increase the cost of capital.

In the final chapter of this report, we suggest seven principles for better risk reporting by businesses. But even if these principles are adopted, people will still be disappointed by risk reporting if their expectations for it are unrealistic. With the benefit of hindsight, people often wonder why firms failed to foresee problems ahead and they tend to forget that the future is always full of unknowns, including 'unknown unknowns'. Investors need to recognise the inevitable limitations of risk reporting and so have realistic expectations of how much it can achieve.

Chapter 4: The way forward

It is important to have practical solutions to the problem of how to improve risk reporting. Risk reporting requirements vary widely among different jurisdictions, and so it would be impractical to put forward improvements to them that would have general validity. In any case, and perhaps more importantly, the evidence suggests that risk reporting requirements often have only limited effectiveness.

For these reasons, our suggestions – set out in seven principles – do not include any proposals for new or tougher regulation. The principles are purely points for consideration by those interested in improving risk reporting and by preparers of corporate reporting information, and are intended to apply to public companies in all sectors.

The seven principles for better risk reporting are:

- **Tell users what they need to know.** Users of corporate reporting want information about a company's risks so that they can make their own assessment of risk. Companies should focus on this objective in deciding what to disclose.
- **Focus on quantitative information.** Disclosing more detailed analyses of the quantitative data that firms already provide would give helpful new information. Too much weight has been placed on the production of descriptive risk lists. This is not a call for quantification of risks, which usually involves dubious assumptions about the probability of future events. Nor is it a call for qualitative information to be neglected. What we have in mind is more information on the breakdown of firms' activities, geographically and by sector, and on their assets, liabilities and commitments.
- **As far as possible, integrate information on risk with other disclosures.** Financial reporting provides much information on risks already, and this should be integrated with other risk disclosures. But information on risk should also be integrated with firms' descriptions of their business models, their forward-looking disclosures, their discussion of past performance, and their financial reporting. A firm's risks are usually inherent in its business model, so explaining the business model should involve explaining its risks. Risk is forward-looking and cannot be fully understood except in the context of broader forward-looking information about a firm's performance, plans and prospects.

- **Think beyond the annual reporting cycle.** Many risks stay the same from one year to the next. Others are highly variable and information on them needs to be updated more frequently than once a year. The internet, rather than the annual report, would probably be the right place for information on both sorts of risk.
- **Where possible, keep lists of principal risks short.** Users are currently faced with long and indigestible risk lists that are all too easy to ignore. Where it is useful for companies to disclose other risks as well as those identified as the principal ones, they should still do so.
- **Highlight current concerns.** It is likely to be of interest to users to know what risks are currently most discussed within a firm. These will often be different from the firm's principal risks, and disclosing them could give users a valuable insight into the business.
- **Review risk experience.** Companies could usefully review their experience of risk in the reporting period. What went wrong? What lessons have been learnt? How do their experiences match up with the risks that they had previously reported?

As for banks, their quantitative risk disclosures have already been expanded since the onset of the crisis through changes in accounting standards, implementation of Pillar 3 of the Basel II Accord on banking supervision and expansion of its requirements. Further improvements may be possible. Stress tests organised by banking and insurance supervisors, where they are based on appropriate assumptions, can also provide valuable information about risk, and it would be helpful to explore the use of such disclosures as an additional form of risk reporting by banks and insurers.

One outcome of all the changes that we suggest might well be that there is less of what is labelled as 'risk reporting' in companies' annual reports. But the proposed changes would mean that, overall, there is more useful information about risks. This should assist investors and other users of corporate reporting to form their own judgements on risk and, in this way, should also contribute to better stewardship of companies, a more efficient allocation of resources, and greater financial stability.



1. THE DEMAND FOR RISK REPORTING

There has been a risk reporting explosion in recent decades. This may reflect an increase in risk. It may also reflect growing demand for risk warnings on all kinds of products and services.

But what is risk? Why do people want businesses to report it? And are businesses able to meet expectations for risk reporting?

1. THE DEMAND FOR RISK REPORTING

1.1 Objectives of the report

Every business enterprise involves the risk that it will fail to achieve its objectives. The higher the risks it faces, the higher the return it will want to justify the risks that it takes. These risks are specific to its particular business model and its particular circumstances, but other businesses that have similar models and are in similar circumstances are likely to face similar risks.

Investors face various kinds of risk.¹ They face at one remove the risks that the business faces – so if the business fails, they lose their money. From this point of view, investors need information about risk so that they can perform their own risk assessments. They take a business's risks into account, so far as they are aware of them, in considering whether and on what terms to invest in it. But they also face additional risks because in some respects they have less information about the business than its managers do. So market valuations of a company may be unduly high (or low), and liable to sudden corrections as risks (or opportunities) that are known to managers become public knowledge.

The greater the uncertainties that investors themselves face because of information asymmetry, the higher the return they are likely to demand.² From a business's point of view, this higher return means a higher cost of capital. Better disclosure about the risks faced by a business reduces information asymmetry, and so – it is often argued – should result in a lower cost of capital for the business. Against this, it has been argued that the disclosure of risks of which investors would otherwise have been unaware should increase the cost of capital as it increases the perceived level of risk associated with the business. We discuss this issue further in Chapter 3.

Improved information on risk also allows investors to make better-informed decisions as to how they will choose to influence the actions of firms' managers and where they will put their money. It should therefore result in both more effective stewardship of individual firms and a more efficient allocation of resources. In addition, external reporting of risks should encourage firms to improve their management of risks.

There has been growing demand in recent decades for businesses to report more and better information about the risks they face. The demand for better risk reporting – especially by banks – has intensified markedly in response to the global financial crisis of 2007 and beyond,³ and reflects a widespread view that reporting of risks ahead of the crisis failed to provide adequate information on them. As a result, fresh requirements for risk reporting have already been imposed (eg, in financial reporting standards) and further requirements may well be imposed, either on banks specifically, financial institutions more widely, or possibly on businesses in general.

Risk reporting is an issue on which ICAEW did pioneering work between 1997 and 2002 when it called for risk reporting to be significantly improved. Since then there has been a considerable expansion of risk reporting. But calls for further progress are entirely legitimate, and risk reporting can and should be improved. The key questions are how it should be improved, and how far the expectations of all those who now call for change can be met.

Risk in business is about much more than the possibilities of corporate failure. Yet unexpected collapses, especially when there is a rash of them in a crisis, inevitably focus attention on the quality of risk reporting and may give rise to unrealistic expectations that risk reporting can prevent future failures. It should not be expected, though, that risk reporting could ever provide a reliable early warning system to tell users of accounts which businesses are most likely to fail.

¹ In this report we adopt the conventional approach of considering risk reporting by businesses to be primarily for the benefit of investors, who we take to include lenders as well as equity investors. But information on risk should be useful for other stakeholders too.

² Reducing information asymmetry also reduces investors' estimation risk, which is a separate risk in its own right. For simplicity, we shall refer just to information asymmetry. See Christine A. Botosan, 'Disclosure and the cost of capital: what do we know?', pp33-34. Details of works cited are given in the Bibliography.

³ For convenience, we will subsequently refer to this as simply 'the financial crisis' or 'the crisis'.

In a competitive economy, there will always be business failures. Some of them will be predictable (though probably not on the basis of what is usually referred to as 'risk reporting'), but for many of them failure will be unexpected until quite late in the day. Risk reporting, however good it is, cannot overcome this problem.

This report is intended to contribute to the debate on how risk reporting should now evolve – work that we started in the ICAEW Financial Services Faculty's 2010 report, *Audit of Banks: Lessons from the Crisis*. In doing so, it will be appropriate to refer back to ICAEW's earlier publications in the light of what can be learnt both from previous debates and from subsequent experience of risk reporting. Most importantly, the report suggests directions for change so as to improve the reporting of business risks.

1.2 What is risk?

People mean different things when they talk about 'risk' in the context of risk reporting. Usually they mean risk in the negative sense of a possibility of incurring losses or reduced profits or something else disadvantageous. Sometimes they talk about 'risks and opportunities' or 'risks and rewards' together, so it is clear that the negative risks are being coupled with the positive opportunities or rewards. Most risk reporting in practice is about risk in the negative sense, and it is this usage that we generally follow in this report.

But there are also other usages of 'risk'. Sometimes it refers to any uncertain future outcome. The potential outcome may be either good (an upside risk) or bad (a downside risk). An extension of this meaning sees risk as variability around an outcome; we discuss this further in a moment.

Some writers, following the economist Frank H. Knight, make a distinction between risk and uncertainty. Knight distinguishes between risks that can be measured and those that cannot, and suggests that a measurable risk is a risk 'proper', while an unmeasurable one is an uncertainty.⁴ Perhaps the clearest examples of risks that can be measured arise in games of chance when someone throws dice, draws a card or spins a roulette wheel. In such games, the odds against any particular outcome can be stated with mathematical precision. This sort of risk is unusual in business. But there are other kinds of risk in business that do come close to this degree of certainty. These are risks that can be calculated from statistical evidence taken from large populations of items or events. They would include, for example, the number of errors likely to arise in highly repetitive production processes – a firm may know with a high degree of precision how many faulty parts per million it is likely to produce. Insurers also rely on risk calculations of this sort.

While such calculable risks may well be relevant to certain elements in financial statements – especially for insurers – most business risks are, in Knight's terms, uncertainties.⁵ This is a point that has important implications for risk reporting, as it means that the risks concerned are unmeasurable, at least in an objective sense. So any reporting of them, whether in the financial statements or elsewhere, may be forced to be qualitative or, to the extent that it is quantified, be subjective or restricted in its scope (eg, disclosing the effects of specified changes in market rates on existing positions). Some quantifications of risk, supposedly derived from objective calculations, are not only subjective, but verge on the bogus. Claims based on a few months' or a few years' experience that something is a 'one in a billion chance' or a 'once in a thousand years event' usually come into this category. Such risks are usually unmeasurable uncertainties.

Calculations of risk as variability around an outcome are often of this sort. For many items that are actively traded in markets it is possible to establish a statistical record for changes in the item's price, and to derive from this probabilistic distributions that show the frequency of differing amounts of deviation from an expected outcome. These measurements of historical price volatility are described as measurements of risk and can be used to produce financially quantified measures such as 'value at risk' (VaR). They are of course only valid as forward-looking measurements of volatility as long as the future resembles the recent past from which the data are derived. While some might say that this is like driving a car by looking in the rear-view mirror, the short-term future usually does show a degree of continuity with the recent past, so such measurements are a useful tool for risk management. But they are not true measurements of risk as the path of future price movements is always an unmeasurable uncertainty.

The meaning of risk as variability around an expected outcome is important as it underlies much risk management, especially in financial institutions, some risk reporting, and also some research into financial reporting and risk.

⁴ Frank H. Knight, *Risk, Uncertainty, and Profit*, pp19-20.

⁵ Knight suggests that, in competitive markets, it is only in the presence of uncertainty (as he defines it) that businesses are able to make a profit in excess of the standard rate of return on capital.

Panel 1.1: Risk and subjectivity

'Risk is inherently subjective... [R]isk does not exist 'out there', independent of our minds and cultures, waiting to be measured. Instead, human beings have invented the concept *risk* to help them understand and cope with the dangers and uncertainties of life. Although these dangers are real, there is no such thing as real risk or objective risk. Even the simplest, most straightforward risk assessments are based on theoretical models, whose structure is subjective and assumption-laden and whose inputs are dependent upon judgment.'⁶

1.3 Growing demand

Calls for more information on risk in corporate reporting may be seen as an instance of demands for more and better risk warnings on all kinds of products and services – from investments (which 'can go down as well as up') to packaged foods (with their contents analysed and listed) to coffee machines (that bear the optimistic warning 'dispenses hot liquids'). While much of this information is useful and allows investors, consumers and others to make better-informed decisions, not all of it is intended to meet user needs. Some of it is intended to protect the information provider from litigation. And some of it is intended to protect regulators from criticism. The same may well be true of risk information in corporate reporting.

However, firms have more to report about risk than in the past, partly because of the explosion of new financial instruments over the past 30 years and the huge amounts of money invested in them, but also because of the pace of change in business, which means that business models are seen as increasingly risky. The IT sector and enterprises dependent on new developments in IT perhaps provide the best illustrations of the trend towards novel, and arguably riskier, business models. But even tried and tested business models may be riskier than they used to be as they become subject to challenge through rapid changes in markets and technologies.

The growing demand for better risk reporting in recent decades may also be seen as part of a broader trend of dissatisfaction with the limitations of historical financial reporting information and, to compensate for these limitations, a move towards more extensive non-financial and forward-looking disclosures. These broad trends were discussed in two earlier reports in the *Information for Better Markets* series: *New Reporting Models for Business* (2003) and *Developments in New Reporting Models* (2009).

Growing demand for risk reporting is also part of a broader interest – or perhaps faith – in risk management, which has grown dramatically in recent decades.⁷ This in turn is perhaps a reflection of the new and increasing risks, particularly in relation to financial instruments, that we have already noted.

The first important attempt to meet the demand for increased risk disclosures was the 1980 remodelling of the rules of the US Securities and Exchange Commission (SEC) for a management discussion and analysis (MD&A).⁸ The MD&A rules include a requirement to 'Describe any known trends or uncertainties that ... the [company] reasonably expects will have a material favourable or unfavourable impact on net sales or revenues or income from continuing operations', and similar requirements in relation to capital and liquidity.

As the 1980s developed, further calls for risk disclosures were to some extent professional responses to criticism of auditors, particularly following unexpected business failures. A significant theme of these proposals was to emphasise the uncertainty of accounting measurements.

In 1986, at least partly in response to Congressional investigations into the accountancy profession led by Congressman John Dingell, seven of the largest accounting firms in the US⁹ issued *The Future Relevance, Reliability, and Credibility of Financial Information*. This report, couched in the form of recommendations to the American Institute of Certified Public Accountants (AICPA), called for, among other things, improved disclosures of risks and uncertainties (including uncertainties in the accounting statements), and proposed that the disclosures should be audited. The SEC consulted on the recommendations, but found that 'virtually all the 196 commentators opposed

⁶ Paul Slovic quoted in Victor Ricciardi, *A Risk Perception Primer: A Narrative Research Review of the Risk Perception Literature in Behavioral Accounting and Behavioral Finance*.

⁷ On this, see Michael Power, *The Risk Management of Everything*, who comments that there has been 'a literature and conference explosion in the risk management area' since 1995.

⁸ More detail on SEC and other requirements for risk disclosures is given at Appendix 1.

⁹ Arthur Andersen & Co, Arthur Young, Coopers & Lybrand, Deloitte Haskins & Sells, Ernst & Whinney, Peat, Marwick, Mitchell & Co and Touche Ross & Co.

the proposals initiated by members of the accounting profession'.¹⁰ The AICPA also followed up the accounting firms' recommendations, appointed a task force, and in 1987 published *Report of the Task Force on Risks and Uncertainties*. This proposed a number of disclosures on risks and uncertainties, including about significant estimates and vulnerability due to concentrations – eg, of assets, customers or suppliers.¹¹

In Canada, the *Report of the Commission to Study the Public's Expectations of Audits*, commissioned by the Canadian Institute of Chartered Accountants (CICA) and chaired by W. A. Macdonald, was published in 1988. Its conclusions included a recommendation to prepare a study on how best to disclose risks and uncertainties. Accordingly, in 1990 CICA published *Approaches to Dealing with Risk and Uncertainty* by J. Efrim Boritz. This made a number of proposals for new risk disclosures, which it envisaged would be required by new or modified accounting standards. The focus of many of the recommendations was on uncertainty in accounting measurements.

Calls for improved risk reporting intensified during the 1990s. In the UK, the Accounting Standards Board's statement of best practice, *Operating and Financial Review*, first published in 1993, recommended that listed companies' annual reports should include 'a discussion identifying the principal risks and uncertainties in the main lines of business, together with a commentary on the approach to managing these risks'.¹²

Improving Business Reporting – A Customer Focus, commonly known as 'the Jenkins Report', is a comprehensive set of proposals for the reform of business reporting, published by the AICPA in 1994. It recommended, among other things, that firms should 'Provide more information with a forward-looking perspective, including management's plans, opportunities, risks, and measurement uncertainties' and should 'Improve disclosures about the uncertainty of measurements of certain assets and liabilities.'

There has been a significant focus on financial instruments in calls for better risk reporting. In the US, large unexpected losses on derivatives incurred by a number of firms in the early to mid-1990s reinforced demands that had already begun to emerge for better information on firms' derivative positions and market risks.¹³ This led to risk disclosure requirements in SFAS 119, *Disclosures about Derivative Financial Instruments and Fair Value of Financial Instruments* (1994), and SFAS 133, *Accounting for Derivative Instruments and Hedging Activities* (1998), and from the SEC in Financial Reporting Release (FRR) 48, *Disclosure of Accounting Policies for Derivative Financial Instruments etc* (1997). FRR 48 also encourages, but does not require, other risk disclosures. Standards with similar requirements for risk disclosures relating to financial instruments were later issued by the International Accounting Standards Committee and its successor, the International Accounting Standards Board.

Subsequently amended, these US requirements, with those for risk disclosures in MD&As and a new requirement in 2005 for separate disclosure of risk factors (see below), form the basis of the current position in the US as regards risk reporting (see Appendix 1, Section A1.1).

Fresh requirements for risk reporting have appeared in a number of jurisdictions since the late 1990s. These include Germany's requirement for companies to disclose all material risks (1998), subsequently supplemented by an accounting standard on risk reporting (2001), and the EU's requirement (2003) that a company's annual report 'shall include at least a fair review of the development and performance of the company's business and of its position, together with a description of the principal risks and uncertainties that it faces'.¹⁴ In the US, in 2005 the SEC introduced a requirement for companies to disclose 'the most significant factors that make the company risky or speculative'. This disclosure has to be made not only in the company's annual 10-K report but updated for any changes in its quarterly 10-Q reports.

¹⁰ SEC Interpretation: *Management's Discussion and Analysis of Financial Condition and Results of Operations; Certain Investment Company Disclosures*.

¹¹ A significant outcome of this phase in the development of the US accounting profession was the *Report of the National Commission on Fraudulent Financial Reporting* (1987) – the Treadway Commission. This did not recommend new disclosures on risk, but gave birth to what became the enterprise risk management approach to internal control.

¹² More detail on this statement's and other proposals for improved risk disclosures is given at Appendix 2.

¹³ Market risks are the risks of loss arising from changes in market prices (eg, of commodities) and market rates (eg, interest rates). On the background to the US requirements, see Thomas J. Linsmeier and Neil D. Pearson, 'Quantitative disclosures of market risk in the SEC release'.

¹⁴ According to Peter Kajüter, *Risk Disclosures of Listed Firms in Germany: A Longitudinal Study*, these requirements were proposed by the German Accounting Standards Board 'in view of the mandatory risk disclosure requirement for public limited companies in Germany'. Research on the German requirement suggests that it has produced unsatisfactory results: see Appendix 3, Section A3.3.

The effectiveness of existing requirements for risk reporting both in Europe and the US has been questioned, and this is an issue that we consider later in the report. In spite of these doubts – or because of them – demands for improved risk reporting have intensified since the financial crisis, as there has been a widely shared view that managers, investors and regulators all underestimated the risks that key financial services businesses were taking on.

Demands for improved risk reporting as a result of the financial crisis include:

- The Financial Stability Forum, in *Report of the Financial Stability Forum on Enhancing Market and Institutional Resilience* (2008), stated that ‘financial institutions should strengthen their risk disclosures’.
- The UK House of Commons Treasury Committee, in *Banking Crisis: Reforming Corporate Governance and Pay in the City* (2009), after hearings on the banking crisis, called for all listed companies to be required to report ‘in clear jargon-free English ... what the main future risks are judged to be’.
- Also in the UK, Sir David Walker’s report, *A Review of Corporate Governance in UK Banks and Other Financial Industry Entities* (2009), called for such institutions to include a board risk committee report as a separate report within the annual report and accounts.
- The European Commission, in *Corporate Governance in Financial Institutions and Remuneration Policies* (2010), called for shareholders in financial institutions to be given ‘better information on risk’.
- The UK Financial Reporting Council, in a paper considering the lessons of the crisis for all listed companies, *Effective Company Stewardship: Enhancing Corporate Reporting and Audit* (2011), called for ‘transparency about the activities of the business and any associated risks’ and ‘transparency in the way that directors report on their activities, including their management of risk’.

Most of these recent demands for better risk reporting focus on financial institutions, especially banks, in the hope that it would make both future crises and individual business failures less likely. In Appendix 4, we look specifically at risk reporting by banks and the financial crisis; we summarise the key points in Chapter 2. But most risk reporting is done by entities other than banks, and in this report we talk primarily about risk reporting by businesses in general. For businesses in all sectors, improved understanding of risks on the part of investors and other users of corporate reporting should lead to better stewardship of companies and to a more efficient allocation of resources across companies.

1.4 ICAEW’s earlier work

From 1997 onwards ICAEW issued a series of reports calling for improved risk disclosures:

- *Financial Reporting of Risk: Proposals for a Statement of Business Risk* (1997)
- *Inside Out: Reporting on Shareholder Value* (1999)
- *Internal Control: Guidance for Directors on the Combined Code* (1999)
- *No Surprises: The Case for Better Risk Reporting (‘No Surprises’)* (1999)
- *No Surprises: Working for Better Risk Reporting* (2002)
- *Prospective Financial Information: Guidance for UK Directors* (2003).

As its full title indicates, *Financial Reporting of Risk* sets out proposals for a statement of business risk by listed companies. This would identify and prioritise key risks, describe actions taken to manage each risk, and identify how risk is measured. The report gives examples of risk-related information already provided in financial reporting as a result of the requirements of UK accounting standards, and surveys risk reporting by UK companies in their operating and financial reviews. It also refers to research suggesting that increased disclosure (in general, not of risks specifically) reduces the cost of capital.¹⁵

Inside Out is a call for listed companies to disclose more about their strategies and value drivers, which would include ‘better information about the risks and opportunities faced by the company’.

¹⁵Christine A. Botosan, ‘Disclosure level and the cost of equity capital’; Mark H. Lang and Russell J. Lundholm, ‘Corporate disclosure policy and analyst behavior’. For a later general survey see Christine A. Botosan, ‘Disclosure and the cost of capital: what do we know?’

Internal Control: Guidance for Directors on the Combined Code ('the Turnbull Guidance') provides guidance for directors of listed companies on the requirements, at that time, of the Combined Code of the Committee on Corporate Governance for boards of directors to maintain and review 'a sound system of internal control', including risk management. The guidance states that 'A company's system of internal control has a key role in the management of risks that are significant to the fulfilment of its business objectives'. It gives advice to directors on, among other things, assessing the effectiveness of the company's risk and control processes and on the disclosures to be made in accordance with the Combined Code. The guidance was subsequently adopted, and later revised, by the Financial Reporting Council (see Appendix 1, Section A1.4).

No Surprises revisits the proposals in *Financial Reporting of Risk* in the light of the nearly 60 responses received to them, a survey of the views of FTSE 500 companies, and a study of risk disclosure practices in prospectuses and annual reports. It points out that there is a good deal of risk disclosure embedded in annual reports (in addition to what appears in the financial statements), which is not labelled as risk reporting. Those seeking information relevant to assessing a firm's risks may therefore need to review the whole of the annual report to extract what they are looking for.

The report includes points made by respondents opposed to the idea of a separate statement of business risk. While arguing that 'companies should be aiming to provide comprehensive and consistent information about risk', *No Surprises* does not suggest that a separate statement of business risk is necessary in order to do this. It states that this issue – whether there should be a separate statement – is purely about form, not substance.

Key points made in the report include:

- If companies report their risks, the actions they take to manage them, and relevant measurements, capital will be made available to them at the lowest possible sustainable cost. Better information on risks reduces investors' uncertainties, thereby reducing the premium for uncertainty in the firm's cost of capital. Company managements should set themselves the goal of 'no surprises' – that is, to avoid surprising the capital markets.
- Companies make more extensive risk disclosures in prospectuses than they do in subsequent annual reports. Companies are urged to achieve in annual reports the standard of risk disclosure found in prospectuses.
- It does not matter whether or not risk information is reported in a separate statement, as long as it is reported somewhere in the annual report.
- Companies should disclose their strategies. This provides the context that allows readers to understand their risk disclosures.

Some of the objections to a separate risk report that we noted in *No Surprises* remain relevant to contemporary calls for better risk reporting. These objections include:

- The managing director of a bank commented on the proposal: 'The idea that a subject, as complex as business risk, can be included in a statement in the annual report and accounts, when our whole business is about risk management, is laughably absurd.'
- People feared that a separate statement would result in 'bland and essentially meaningless reporting'.
- Others, in a specifically UK context, thought that the information in such a statement would be better as part of the operating and financial review.

No Surprises: Working for Better Risk Reporting is a position paper that reiterates the conclusions in *No Surprises: The Case for Better Risk Reporting*.

Prospective Financial Information: Guidance for UK Directors provides guidance on the disclosure of prospective financial information (PFI). PFI is defined as 'primary financial statements and elements, extracts and summaries of such statements and financial disclosures drawn up to a date, or for a period, in the future'. PFI is therefore a specific forecast, rather than a vague forecast that, eg, 'profits are expected to be satisfactory'.

The report states that:

'Published PFI should be accompanied by disclosure of the assumptions on which it is based. In order for users to be able to evaluate these assumptions, the related risks, uncertainties and sensitivities will also need to be disclosed in a way that makes their significance understandable to users.'

The report proposes a 'reasonable disclosure principle', which is that:

'PFI should contain disclosure that is reasonable, and so ... should not be presented in situations of such uncertainty that the disclosure becomes too complex or extensive to be understood or used by investors'.

This principle sets a limit to the disclosure of PFI and its related risks and uncertainties, which has significant effects in practice. As PFI is a specific forecast, it will have greater uncertainties than a vague forecast, and so require more extensive risk disclosures. The reasonable disclosure principle means that PFI that might otherwise be disclosed is not, because the risks and uncertainties that surround it are too complex or extensive to explain. This may sound as though it means that valuable forward-looking information is being suppressed, but what it really implies is that the uncertainties surrounding the data are such that it is likely to be highly speculative and that investors either would ignore it or, if they took it at face value, might easily be misled.

A significant point in this approach to risk disclosure is that, in the case of PFI, it is clear that 'risk' means a risk that a specific forecast will not be achieved. This is often the case with risk – it acquires definition and meaning in a particular context as a risk to a particular objective. Until we specify an objective we cannot know what risks are relevant to it. But for the purpose of reporting business risks, the objectives are so widely drawn that, as suggested earlier, the possibility of anything disadvantageous to the business is a risk.

As noted above, ICAEW has returned to the subject of risk reporting in the light of the financial crisis. The ICAEW Financial Services Faculty's 2010 report, *Audit of Banks: Lessons from the Crisis*, reported stakeholders' view that:

'Risk information is often presented in a piecemeal manner in bank annual reports, spread between the audited financial statements and the unaudited front sections. Banks need to focus on clearer presentation which allows users to understand the big picture, which is currently often obscured by the volume of detailed information.'

The report comments, 'Summary risk statements are a potential way of providing this big picture', but also states that there are different views on how the objective of better presentation of risk information can be achieved. It suggests that 'A degree of experimentation will be necessary to see which form of disclosure is the most meaningful for investors.' There is a potential conflict, which we discuss later (Section 4.4) between the desire for a single, coherent and discrete narrative on risk and the pervasiveness of risk-relevant information in corporate reporting.

Many of the key points made in ICAEW's earlier reports are still relevant today. But subsequent experience has shown how hard it will be to achieve the ambitions that are held for risk reporting. And since the 1990s requirements for disclosures on risk have changed significantly, as has the technology of business reporting. So it is useful to reassess, in the light of experience and changes in the reporting environment, what can realistically be achieved; this report aims to do that.

1.5 Outline of the report

In the remainder of the report we:

- look briefly at experience of risk reporting by businesses generally to date, and at risk reporting by banks in the period before the financial crisis (Chapter 2);
- consider why risk reporting in practice has often been thought to be unsatisfactory (Chapter 3); and
- suggest ways to improve the reporting of business risks (Chapter 4).

In the appendices to the report we:

- summarise some of the more important existing requirements for risk disclosures (Appendix 1);
- list some of the more significant calls for improved risk reporting (Appendix 2);
- summarise research on the experience of risk reporting by businesses generally (Appendix 3); and
- analyse in more depth the role of risk reporting in the financial crisis (Appendix 4).

1.6 Chapter summary

A growing demand for better reporting of business risks has emerged in recent decades. This is based on the belief that improved understanding of business risks by investors and other users of corporate reporting should lead to better stewardship of companies and to a more efficient allocation of resources.

It is generally accepted that there was a widely-shared underestimation of risk before the financial crisis of 2007 and beyond. This has reinforced calls for improved risk reporting, by banks in particular, in the expectation that it should help make future crises less likely. But the crisis has also led to calls for better risk reporting by companies in all sectors.

The demand for better risk reporting is an entirely legitimate one, and risk reporting can and should be improved. But careful consideration needs to be given to how it should be improved and to how far the expectations of all those who now call for change can be met. Risk in business is about much more than the possibilities of corporate failure. Yet unexpected collapses, especially when there is a rash of them in a crisis, inevitably focus attention on the quality of risk reporting and may give rise to unrealistic expectations that better risk reporting could prevent future failures. But in a competitive economy business failures are inevitable, and it would be unreasonable to expect risk reporting to provide a reliable early warning of which businesses are most likely to fail – still less to prevent their failure.

This report is intended as a timely contribution to debate about how risk reporting should evolve. It reviews both the general experience of risk reporting to date and the risk reporting of financial institutions before the crisis (Chapter 2), considers why risk reporting is thought to have been disappointing (Chapter 3), and suggests ways to improve it (Chapter 4).

2. EXPERIENCE OF RISK REPORTING

Researchers who have examined risk reporting often seem to be disappointed with the results. It is far from clear that it has actually been very useful.

Yet there is general agreement that the global financial crisis was an effect of underestimating risks. Can better risk reporting prevent this from happening again?



2. EXPERIENCE OF RISK REPORTING

2.1 The evidence

In recent decades, firms have reported a growing volume of information about the risks they face. The information has appeared in both their financial and non-financial reporting, and much of it has been in response to new disclosure requirements. Unfortunately the evidence on how useful this has been is mixed and a note of disappointment among those who have reviewed qualitative risk reporting in practice is common, though not universal.

Various studies on the quality and usefulness of risk reporting are briefly summarised in Panel 2.1 (fuller summaries are given at Appendix 3, Sections A3.1-A3.6). Firms' financial reporting as a whole – although it is not usually regarded as risk reporting – is also relevant to the assessment of risk in the sense of:

- variability of returns to investors. As we noted in Chapter 1, people sometimes regard risk as variability around an outcome; and
- probability of default.

There is a separate body of research on the relevance of financial reporting in general to these types of risk. But as financial reporting in general is not usually regarded as risk reporting, we refer to this literature separately (Appendix 3, Sections A3.7-A3.9).

Panel 2.1: Research on risk reporting

US (A3.1)

A study of oil and gas companies' commodity price risk disclosures between 1993 and 1996 finds that they are associated with share price sensitivity to changes in oil and gas prices (Rajgopal, 1999). An earlier study of information in savings and loan institutions' unpublished regulatory filings between 1984 and 1988, analogous to information in disclosures introduced by the SEC and FASB in the 1990s, finds evidence that on- and off-balance-sheet interest rate exposures are associated with the sensitivity of share prices to interest rates. This implies that the subsequently required disclosures might also be expected to be associated with the sensitivity of share prices to interest rates (Schrand, 1997).

Two surveys of initial compliance with risk reporting requirements introduced by the SEC in 1997 find that it is 'less than satisfactory' (Elmy et al, 1998; Roulstone, 1999). However, a further study finds that the requirements appear to have led to investors' being better informed (Linsmeier et al, 2002). A study of value-at-risk disclosures between 1995 and 1999 finds that they helped predict the variability of trading revenues (Jorion, 2002).

An unpublished study of risk disclosures between 2004 and 2008 finds that longer risk factor disclosures appear to be associated with a raised assessment of a company's risks by the market and with lower share prices, but are also associated with reduced information asymmetries (Campbell et al, 2011). An unpublished study of risk disclosures between 1994 and 2007 also finds evidence suggesting that increased references to risk are associated with increased market perceptions of risk and uncertainty (Kravet and Muslu, 2011).

Canada (A3.2)

A survey of Canadian annual reports for 1999 finds that while the disclosure rate 'appears relatively high, one might question the degree of relevance and ... usefulness of the information disclosed' (Lajili and Zéghal, 2005).

Panel 2.1: Research on risk reporting (continued)

Germany (A3.3)

An unpublished German survey of annual reports between 1999 and 2003 finds that 'most risk reports are ... deficient as regards depth and precision' (Kajüter, 2004). A second study, reviewing the evidence in earlier papers, finds that mandatory risk reporting requirements 'just slightly improved' actual reporting. It argues that 'the value of risk reporting is generally overestimated' (Dobler, 2005). A third study surveys annual reports between 2000 and 2005. It finds improvements in risk disclosures, but comments that risk reporting is still 'far from being good' (Berger and Gleissner, 2006).

Italy (A3.4)

An Italian survey based on annual reports for 2001 concludes that firms tend to adopt a policy of 'formal disclosure but substantial non-disclosure' (Beretta and Bozzolan, 2004).

UK (A3.5)

A 1999 survey finds that institutional investors tend to agree with the proposition that 'I believe that the current state of risk disclosure ... is inadequate' (Solomon et al, 2000).

A study based on annual reports for 2000 finds that firms make more 'good risk'¹⁶ than 'bad risk' disclosures (Linsley and Shrivs, 2006). A study based on annual reports for 2004 to 2006 finds that companies report about half the information available to management on the companies' objectives, policies and processes for managing interest rate risk and foreign exchange risk, but comments that it is not known whether this is too much, too little, or the right amount of disclosure (Marshall and Weetman, 2008). A study based on the 2008 and 2009 annual reports of listed companies finds most of them technically compliant but failing to meet the spirit of the requirement to disclose principal risks (ASB, 2009).¹⁷

A study based on discussions with representatives of over 40 major listed companies and a selection of investors and advisers finds that the majority of investors think there is scope for considerable improvement in risk reporting. Some investors place more reliance on meetings with management than on what is in the annual report (FRC, 2011).

A forthcoming report based on a survey of investment analysts in 2009-10 finds that on average they regard annual report risk factor disclosures as useful, but a number of them think that annual reports provide no significant new information on risks. The same study looks at 2009 risk disclosures by listed food and drink companies and finds that their 'risk information [is] general in nature' but that 'on rare occasions, a very company-specific risk is disclosed' (Abraham et al, 2011).

Banks (A3.6)

A survey of risk disclosures in the 2001 annual reports of 18 UK and Canadian banks finds that they are dominated by 'general statements of risk management policy' (Linsley et al, 2006). A survey of value-at-risk reporting by large international banks concludes that 'very little can be gleaned from published VaR figures ... A cynic might suggest that we have the appearance of disclosure, combined with careful attempts to avoid disclosing anything of real significance' (Woods et al, 2008a). A survey of market risk disclosures by 25 large international banks from 2000 to 2006 finds 'a mildly increasing trend' of disclosures on average, but marked reductions in disclosure by some banks (Woods et al, 2008b).

This is a very mixed group of studies. There is some indirect evidence that quantified disclosures on matters such as market risk may be useful (Schrand, 1997; Rajgopal, 1999; Linsmeier et al, 2002; Jorion, 2002), and some evidence – direct (Abraham et al, 2011) and indirect (Campbell et al, 2011; Kravet and Muslu, 2011) – that qualitative risk reporting as it has developed since the 1990s may be useful. The indirect evidence is based on statistical correlations between disclosures (or surprisingly in the case of Schrand, 1997, non-disclosures) on the one hand and changes in share prices, trading volumes, bid-ask spreads, or analysts' forecasts on the other.

¹⁶What we refer to in Chapter 1 as an 'upside risk' – also known as a 'positive risk'.

¹⁷The evidence from this study, by the Accounting Standards Board, is also cited in the Financial Reporting Council discussion paper, *Effective Company Stewardship: Enhancing Corporate Reporting and Audit*.

There is also much criticism of the quality of disclosures (Elmy et al, 1998; Roulstone, 1999; Lajili and Zéghal, 2005; Kajüter, 2004; Dobler, 2005; Berger and Gleissner, 2006; Beretta and Bozzolan, 2004; Solomon et al, 2000; ASB, 2009; FRC, 2011; Linsley et al, 2006; Woods et al, 2008a; Woods et al, 2008b) and some of these studies show a degree of scepticism as to the value of much risk reporting. One study indicates that in a key respect it is impossible to interpret its findings (Marshall and Weetman, 2008). We discuss below (2.3) what conclusions, if any, can be drawn from this body of work.

2.2 Performance discussion as risk disclosure

ICAEW's *No Surprises* argued that discussion of past performance gives information about future risks and opportunities, and it identified and listed the implicit risk disclosures in five companies' annual reports. On this view, every identified cause of good or bad past performance is potentially a risk disclosure. Whatever factor has caused the good or bad performance in the past may or not be present in the future, and it therefore constitutes a risk that may affect future performance. On this view, much disclosure on risk is likely to appear outside what is labelled as risk reporting.

Different researchers define 'risk' disclosures in different ways. Some of them take the same view as *No Surprises*. One paper that defines risk disclosures in this way¹⁸ gives the following two examples (among others), both from FTSE 100 companies, of what it regards as risk disclosures:

- 'With over half our profits generated in the US, the dollar exchange rate is important – the 4% average strengthening of the dollar gave a £5m benefit on translation.'
- 'A combination of customer delays on existing programmes such as the C130J and C27J and the start-up of a number of new programmes such as the AS900 business/regional propulsion system led to manufacturing inefficiencies particularly at the Cowes site on the Isle of Wight.'

The first of these disclosures is a risk disclosure because it indicates that future results could be affected, either positively or negatively, by changes in the dollar exchange rate. The second is a risk disclosure because it indicates that future results could be affected, apparently only negatively judging from the information given, by future customer delays and by future start-ups of new programmes.

Research on the usefulness of the MD&A and similar forms of reporting therefore needs to be added to our review of risk reporting studies. Two papers on MD&A reporting in the US and one on MD&A reporting in Canada find evidence that it may be useful.¹⁹ One of these papers does not attempt to analyse which components of MD&A disclosures are useful. The evidence reported in the other two seems to suggest that it is forward-looking disclosures on matters such as capital expenditure plans rather than information on risks that is useful. But these studies at least support the possibility that there may be implicit or explicit risk disclosures in the MD&A (and presumably in similar reports) that are useful to readers.

2.3 Discussion of the evidence

The limited number of research studies that we have referred to do not provide a basis on which to arrive at any firm conclusions. Some of them rely on fairly small samples. Some of them are academic papers that have not been published in peer-reviewed journals and so have not gone through the quality controls associated with that process. And a number of them are based on work done some years ago; this is partly because the most interesting time at which to study the effects of risk disclosures is often when they are first introduced. In the US significant risk reporting requirements were introduced in 1997 (see Section 1.3 above) and there was a concentration of research work in the US around that time (Schrand, 1997; Elmy et al, 1998; Rajgopal, 1999; Roulstone, 1999; Linsmeier et al, 2002; Jorion, 2002). European work is generally more recent, but has focused mainly on qualitative risk reporting. However, the studies listed also include a few current ones – which suggests a revival of interest in the topic.

¹⁸Philip M. Linsley and Philip J. Shives, 'Risk reporting: a study of risk disclosures in the annual reports of UK companies'.

¹⁹Stephen H. Bryan, 'Incremental information content of required disclosures contained in management discussion and analysis'; Ori E. Barron, Charles O. Kile and Terrence B. O'Keefe, 'MD&A quality as measured by the SEC and analysts' earnings forecasts'; and Peter M. Clarkson, Jennifer L. Kao and Gordon D. Richardson, 'Evidence that management discussion and analysis (MD&A) is a part of a firm's overall disclosure package'. There may be other relevant research of which we are not aware.

The surveys differ in the disclosures that come within their scope. Some consider only separately identified risk reporting (eg, Campbell et al, 2011). Others include disclosures made outside what is labelled as risk reporting (eg, Linsley and Shrides, 2006). Many of them exclude what is in the financial statements. These and other differences in subject-matter and methodology make it impossible to compare the surveys.

While counting the number of risks disclosed is a feature of many of the studies, it is not clear that reporting more risks is an improvement. Indeed, in some of the studies this is explicitly denied (eg, Beretta and Bozzolan, 2004) and in at least one of them firms are criticised for reporting too many risks (ASB, 2009). Where qualitative assessments are made of firms' risk reporting, there is inevitably an element of subjectivity in the judgements. While there is no reason to dissent from the dissatisfaction with the quality of risk reporting expressed in a number of the surveys, this dissatisfaction is – in most cases – an expression of the researchers' opinion. It is conceivable that, though unsatisfactory, the reporting is none the less useful.

Recent research provides evidence suggesting that risk reporting may be useful (Campbell et al, 2011; Kravet and Muslu, 2011; Abraham et al, 2011), but it is in papers that are unpublished at the time of writing this report, so it is uncertain how much weight should be placed on it. Two of these papers tackle the methodological challenges of showing that qualitative disclosures have quantitative effects on, eg, share prices, bid-ask spreads, or share price volatility. They get around these problems by turning qualitative disclosures into quantitative ones. And they do this by counting words (Campbell et al, 2011) or sentences (Kravet and Muslu, 2011), and searching for statistical correlations with other quantities – changes in share prices, etc. The correlations appear to be statistically significant, so they no doubt show something.

As noted above, a number of other studies (Rajgopal, 1999; Linsmeier et al, 2002; Jorion, 2002; Campbell et al, 2011; Kravet and Muslu, 2011) are also based on statistical correlations between disclosures and changes in share prices, trading volumes, bid-ask spreads, or analysts' forecasts. As the authors of such papers often point out, it is difficult to know whether these correlations show that the disclosures are being used by investors or whether there is some alternative explanation for the findings.

There is not yet any empirical confirmation that risk reporting reduces the cost of capital. This may reflect problems with demonstrating that any disclosure affects the cost of capital, rather than provide evidence that risk reporting is in this respect less useful than other forms of disclosure. On the other hand, two current studies (Campbell et al, 2011; Kravet and Muslu, 2011) imply that increased risk disclosures may tend to raise the cost of capital by raising investors' perceptions of risk (see 3.8 below).

Recent research on investment analysts' views on risk reporting (Abraham et al, 2011) perhaps helps to explain some of the apparent contradictions in the research findings of other studies. It seems that users of corporate reporting information are divided in their views on qualitative risk reporting. Some consider it useful. Some consider it useless. So when some researchers query the value of risk disclosures, while others find evidence that it may affect share prices, it is conceivable that both are right. It is possible that the quality of risk disclosures is indeed not very good, and that they are ignored by some users, but that they are none the less used by others, and do have some effects, though it is difficult to know exactly what these are.

2.4 Risk reporting and the financial crisis

There is a widespread and understandable view that there must have been inadequate risk reporting by banks and other financial institutions in the period leading up to the financial crisis. We examine the evidence on this question in Appendix 4. While there is some relevant academic research, most of the information available to date comes from the investigations of banking regulators, finance ministries, legislative inquiries and similar sources.

Although some institutions appear to have misled investors, and many more had internal disagreements about the level of risk that they faced, there appears to be little evidence so far to support the view that qualitative risk reporting before or during the crisis failed to reflect banks' own assessments of their risks. It seems more likely that the misleading impression given by qualitative risk reporting ahead of the crisis was generally attributable to banks' mistaken assessments of risk, rather than to a failure to report recognised risks. These misperceptions of risk were widely shared, and not peculiar to bankers. Perhaps the most authoritative report on this issue is a 2008 report from the Financial Stability Forum (now the Financial Stability Board), *Report of the Financial Stability Forum on Enhancing Market and Institutional Resilience*.

The Board is an international grouping of finance ministries, central banks and banking regulators. It therefore seems likely to be as well informed as anybody on the causes of the crisis. Its report identifies a number of major failures of risk assessment as contributing to the crisis. The problems listed in the report include:

- Before the crisis, there was a 'global trend of low risk premia and low expectations of future volatility'.
- Banks 'misjudged the liquidity and concentration risks that a deterioration in general economic conditions would pose'.
- Banks 'misjudged the risks that were created by their explicit and implicit commitments to [off-balance sheet funding and investment vehicles], including the reputational risks arising from the sponsorship of the vehicles'.
- Banks 'misjudged the level of risks [on loans to households and businesses, including loans for buy-outs by private equity firms], particularly these instruments' common exposure to broad factors such as a weakening housing market or a fall in the market liquidity of high-yield corporate debt'.

Other investigations by governments and regulators around the world have arrived at similar findings. As banks significantly underestimated the risks that they faced, it was impossible for them to report those risks accurately. Financial crises are always a surprise, and between crises individual institutions will always give the impression that everything is under control – mainly because they will genuinely believe that it is.

Separately from these issues of qualitative risk assessment, however, it seems reasonable to conclude with the benefit of hindsight that banks' quantitative, analytical disclosures relevant to risk before the crisis were inadequate. In particular, inadequate information appears to have been given about off balance sheet risk, especially in the US. Banks generally appear to have complied with most of the applicable disclosure requirements, but there were weaknesses in the requirements themselves, and there appear to have been one or two US requirements for which compliance has been poor. Weaknesses in requirements have subsequently been addressed by changes in accounting standards and implementation and expansion of the requirements of Pillar 3 of the Basel II Accord on banking supervision. Further improvements may well be possible.

2.5 A puzzle

As we have seen, subjective assessments by researchers and regulators of the quality of risk reporting tend to express disappointment, and some users say that they ignore it. In one respect, the lack of progress by businesses generally in realising the ambitions of risk reporting's advocates is puzzling, as there are reasons to believe that high quality risk reporting should be in firms' own interests.

- First, it is commonly assumed that improved risk disclosures should reduce a firm's cost of capital.
- Second, it has been argued that risk reporting encourages more effective risk management.

If these arguments are correct, calling for better risk reporting should be like pushing on an open door. Managers should be keen to do it in their own interests.

How can we explain why risk reporting has not been a greater success? Those who have investigated the problem have suggested a number of possible reasons, which we discuss in the next chapter.

2.6 Chapter summary

Researchers who have looked at the experience of risk reporting by businesses across different sectors often express a degree of disappointment with it, sometimes suggest that disclosure requirements have had limited effect, and tend to make comments along the lines that there is 'formal disclosure but substantial non-disclosure'. Actual research findings are mixed. While there is some evidence that both quantitative and qualitative risk reporting may have been useful, there is also evidence that qualitative risk reporting is not considered useful by some users of corporate reporting. Indeed, users appear to have conflicting views on risk reporting – some finding it useful, some not.

As for banks specifically, there is a widespread and understandable view that there must have been inadequate risk reporting in the run up to the financial crisis. There appears to be little evidence so far, though, that qualitative risk reporting before or during the crisis failed to reflect banks' assessments of the risks that they faced. It seems more likely that the misleading impression given by qualitative risk reporting ahead of the crisis was in most cases attributable to banks' mistaken assessments of risk, rather than to a failure to report recognised risks. These misperceptions of risk were widely shared, and not peculiar to bankers. But with the benefit of hindsight, it seems reasonable to conclude that the requirements for banks' quantitative, analytical risk disclosures before the crisis were inadequate, and there may also have been a degree of non-compliance.

3. RISK REPORTING CHALLENGES

The benefits of business risk reporting – to both users and preparers – are unclear. Its costs are more obvious.

This contrast presents difficult challenges if risk reporting is to be improved. And if our expectations for risk reporting are unrealistic, we will always be disappointed by it.



3. RISK REPORTING CHALLENGES

3.1 Five challenges

We have suggested that it is puzzling that, while there appear to be good reasons why firms should ensure that they produce high quality risk reporting, the actual experience of risk reporting seems to have been disappointing. We identify five key challenges for risk reporting that help to explain the anomaly:

- inherent unreliability (Section 3.2);
- costs exceed perceived benefits (Section 3.3);
- generic disclosures (Section 3.4);
- risk management reporting difficulties (Section 3.5); and
- risks that will never be reported (Section 3.6).

3.2 Inherent unreliability

Judgements on risk are unavoidably subjective. Ten people involved in running a firm would probably give ten different – though overlapping – lists of its most significant risks. Some of these views may show better judgement, or be better informed, than others, but it is quite likely that none of them can be said to be right or wrong, even in the light of subsequent events. A 1997 discussion between researchers and standard-setters in the US noted that with risk reporting ‘there is no ex post settling up so there is no basis for assessing completeness or accuracy of risk disclosures’.²⁰ Nor is a comprehensive ex post settling up possible – and any partial settling up could be misleading.

Subjectivity seems to be a problem that is inherent to risk reporting. It may pose difficulties for preparers in assessing the quality of their own risk reporting, and will certainly make it more difficult for users to know whether they are being provided with useful information.

With the benefit of hindsight, risk reporting will sometimes appear to have been incomplete or wrong in the sense that a firm may be hit by a risk that it had not mentioned or that it had stated to be under control. So firms will get blamed for allegedly poor risk reporting when things go wrong (see Panel 3.1 for an illustration). But they will not get credit where credit is due for identifying relevant risks. For if a firm is not adversely affected by a risk that it mentions, this may appear to mean that it was wrong to have mentioned it. The risk may have been real, even though it was not realised; indeed, it may not have been realised because the firm managed it well. But all that readers of the report will know is that managers pointed to a danger that did not materialise. Managers therefore appear to have got things wrong, even though they may have got things right.

Panel 3.1: Questioning the usefulness of risk reporting – BP

When something goes badly wrong at a firm, it is easy to be critical of its risk reporting, which – for any firm – is unlikely to indicate that anything is actually expected to go badly wrong. Banks’ risk reporting before the financial crisis may be seen as one example of this. Another example is BP. An article in the *Financial Times*²¹ quotes these remarks by an authority on corporate social responsibility reporting: ‘Nothing in BP’s reporting would have given the vaguest signs that the Deepwater Horizon disaster was an issue and would have the impacts that it did’.

²⁰Catherine M. Schrand and John A. Elliott, ‘Risk and financial reporting: a summary of the discussion at the AAA/FASB conference’.

²¹Mike Scott, ‘Putting people, planet and profit into the annual report’.

Panel 3.1: Questioning the usefulness of risk reporting – BP (continued)

The 2009 BP annual report, which was published shortly before the disaster, lists 25 risk factors and states that ‘If any of these risks occur ... [o]ur business, financial condition and results of operations could suffer and the trading price and liquidity of our securities could decline.’ One of the operational risks identified is process safety. On this the report states:

‘Inherent in our operations are hazards that require continuous oversight and control. There are risks of technical integrity failure and loss of containment of hydrocarbons and other hazardous material at operating sites or pipelines. Failure to manage these risks could result in injury or loss of life, environmental damage, or loss of production and could result in regulatory action, legal liability and damage to our reputation.’

In the light of what happened subsequently, this seems to be a reasonable statement of the risks involved. It is true that, as the quotation in the article points out, there is no quantification of possible losses, but this is presumably because it would be impossible to provide a sensible quantification in advance of the event. The loss depends on how bad the spill is, where exactly it takes place, and what its effects are.

BP’s report also states that ‘We continue to show our ability to take on and manage risk, doing the difficult things that others either can’t do or choose not to do.’ No doubt this statement was true across the great majority of the firm’s operations, despite the events of 2010 at one of them. But a firm that takes on risks that other firms won’t is, on the face of it, a riskier firm.

An alternative angle on the problem is that ‘the results of how well [companies] manage ... risks [are] evident from the financial results’.²² In other words, the ex post settling up is in the accounts. This is an interesting point of view and, in the long run, has something to be said for it. The problem is that, in risk management even more than in other matters, past performance is not a reliable guide to the future. And unfortunately, as it is often a matter of chance whether a particular risk materialises, good risk management and bad risk management may look identical in terms of short-term financial performance. Indeed, as good risk management is likely to be more expensive, in the short term it will often produce worse financial results than poor risk management. If the risk in question eventually materialises, the good risk managers will be vindicated, but if it does not, they will simply appear to have misjudged matters.

The subjectivity of risk reporting also places constraints on its auditability and on the enforceability of risk reporting requirements (but see Panel 3.2 below). As one academic paper puts it, risk reporting may be mandatory, but ‘the quality of risk disclosures remains largely voluntary’.²³ These constraints must also reduce the reliance that can be placed on risk reporting.

Overall, the fact that there is no ex post settling up, only limited auditability and enforceability, and therefore no way of distinguishing good risk reporting from bad risk reporting, must limit its usefulness.

Panel 3.2: The UK approach to risk reporting enforcement

Regulatory authorities in the UK have recently adopted a tougher approach to enforcing qualitative risk disclosure requirements. This is of broader interest, partly because the statutory requirements in the UK derive from EU legislation and are therefore similar to those in the rest of the EU, but also because the approach adopted raises important issues about the potential effectiveness of risk disclosure requirements in all jurisdictions. Hitherto, it has been widely thought that the quality of descriptive risk disclosures is to a large extent inevitably voluntary. In the US the SEC has tried to improve the quality of risk reporting by cracking down on generic disclosures (see Section 3.4), but it does not yet appear to have been successful.

The UK requirement for risk disclosure is that a firm’s business review in the directors’ report ‘must contain ... a description of the principal risks and uncertainties facing the company’ (s417(3), Companies Act 2006). This is virtually identical to the wording in the relevant EU Directive (see Appendix 1, Section A1.2).

²²Philip Linsley and Philip Shives, ‘Risk management and reporting risk in the UK’. This perspective is put forward as one that managers may well take, rather than the authors’ own view.

²³Todd Kravet and Volkan Muslu, *Informativeness of Risk Disclosures in Corporate Annual Reports*.

Panel 3.2: The UK approach to risk reporting enforcement (continued)

On 1 February 2011 the UK's Financial Reporting Review Panel issued a press release, 'The Financial Reporting Review Panel highlights challenges in the reporting of principal risks and uncertainties', listing risk reporting issues on which the Panel has 'challenged a number of companies'. While in several respects the issues listed in the 1 February 2011 press release might appear to go beyond the way in which the Companies Act's requirements have hitherto been understood, this is because the Panel's approach is not based solely on the requirement to report principal risks and uncertainties. It also relies on the broader business review requirement 'to inform the members of the company and help them assess how the directors have performed their duty ... to promote the success of the company' (s417(2)).

The points on which the Panel has challenged companies include:

- 'The directors' report does not clearly identify which risks and uncertainties the directors believe to be the principal ones facing the business.'
- 'A long list of principal risks and uncertainties is given and the list raises a question as to whether all the risks and uncertainties on the list are actually principal ones.' The Panel adds that in considering whether a risk is a principal one, a relevant question would be 'have the risks and uncertainties listed as principal been the subject of recent discussions at board or audit committee meetings?'
- 'The description given of a risk or uncertainty is in generic terms and it is not clear how that risk or uncertainty applies to the company's circumstances.' A relevant question here would be 'Is the description of each principal risk and uncertainty sufficient for shareholders to understand ... how it might affect the company?'
- 'The principal risks and uncertainties disclosed are not consistent with other information given in the report and accounts.' A relevant question here would be 'are there significant risks and uncertainties discussed elsewhere [in the report and accounts] which do not appear on the list?'
- 'The directors' report does not state how the company manages its principal risks and uncertainties.'

3.3 Costs exceed perceived benefits

3.3.1 Competitive costs

There are also positive disincentives to full disclosure of risks. Indeed, risk reporting creates its own risks and so needs to be undertaken by preparers, and interpreted by users, as an exercise in risk management.

One disincentive identified by researchers is the competitive costs of disclosure – usually referred to as 'proprietary costs'. A proprietary cost is any loss to the company, whether through increased costs or reduced income, attributable to competitors' actions. And in a competitive economy there is often a trade-off between transparency and profitability.

Risk management techniques and perceptions of risk are both sources of competitive advantage to firms. Imagine two firms that have different perceptions of the risk involved in a particular project. One sees it as relatively high risk while the other sees it as relatively low risk. Each firm's perception of the risks associated with the project is potentially valuable information to the other firm, especially if one of the firms is regarded as better at assessing risks. If the firm that is better at assessing risks discloses that it rates the risks relatively highly, this may put the other firm off risks that it would otherwise take (thereby saving the second firm, a competitor, from self-inflicted damage). If the firm that is better at assessing risks discloses that it rates the risks relatively lowly, this may encourage the other firm to take risks that it would otherwise avoid (thereby inflicting competitive damage on the first firm). So it may make sense for firms' risk disclosures to be vague and uninformative.

Firms compete on their ability to assess risks, but they also compete on their ability to manage risks. Again, informative risk management disclosures by a firm that is good at risk management are a free gift to its competitors. An obvious solution is for the firm to make uninformative disclosures.

One theoretical study on risk disclosures argues that firms that would benefit from making them will do so under a voluntary regime. But 'mandating risk disclosure forces firms that would not disclose in a voluntary regime to incur disclosure costs', so 'firm value falls'.²⁴ Though this point is

not made in the study, the evidence perhaps suggests that firms minimise involuntary disclosure costs by making ineffective disclosures.

3.3.2 Costs to managers

Another disincentive to informative risk reporting is the potential cost to managers. This can arise in two ways. One possibility is that risk disclosures will indicate expectations that fail to be realised, which creates a risk that managers will be sued for giving misleading forecasts or that their position in the firm will be weakened (eg, they will be dismissed or their bonuses cut). The other possibility is that the firm will subsequently be hit by problems that had not been identified as risks in its external reporting, which again creates a risk that managers' position will be weakened. The litigation threat can in principle be met by appropriate safe harbour legislation, as exists in the US – though this may in turn create fresh difficulties as to the reliability of the information reported. The problem that risk reporting/non-reporting will threaten managers' position within the firm is most likely to be met in practice by disclosures that are carefully worded so as to arouse no expectations and/or to leave no possible outcome uncovered. Neither approach is conducive to helpful reporting for users.

3.3.3 No evidence of benefits

A further problem identified at the US discussion of 1997 is that 'preparers have no evidence that risk disclosures affect the cost of capital'. We return to this question below (Section 3.8). If preparers do not see that they have anything to gain from effective risk reporting, this will tend to encourage a minimal-compliance mindset.

It is also possible that managers are not convinced that reporting risks externally leads to improvements in their own risk management. Common sense suggests that firms have strong incentives to manage risks effectively, as poor risk management can cause reduced profits, losses, or even insolvency. But the proposition has often been advanced that these incentives can be reinforced by requirements for risk reporting.²⁵ Indeed, it may be thought that common sense also suggests that disclosure should encourage firms to improve their risk management because:

- they will not want to disclose that their risk management practices are worse than their competitors';
- on the principle that people manage what they report (an analogous idea to the principle that they 'manage what they measure'), reporting risks should focus managers' attention on them;²⁶ and
- it will allow shareholders to oversee risk management practices.

But if, because actual disclosures are vague or not pertinent (Section 3.5), firms with good risk management and firms with poor risk management practices look much the same, then the argument would fail as there would be no reliable way of telling from a firm's risk disclosures how effective its risk management is.

There does not appear to have been any research to date to show whether external risk reporting requirements have improved risk management practices, so it would be useful to explore how far risk reporting does indeed help risk management. Does the need to report externally encourage managers to devote more attention to risk management? Does it encourage them to limit the risks that they take?

If the benefits to firms of making informative disclosures do not exceed the costs, this must limit the likelihood that risk reporting will ever become particularly informative. The paradigm for business reporting requirements is financial reporting, and people have grown used in this context to being able to require firms to disclose information that is on the face of it against their interests – eg, losses.

But financial reporting information is relatively objective and verifiable; qualitative risk disclosures are not. So there may be little scope for tightening up risk reporting requirements so as to compel firms to make disclosures that damage their own (or their managers') interests.

²⁴Bjorn N. Jorgensen and Michael T. Kirschenheiter, 'Discretionary risk disclosures'.

²⁵This issue is explored in Laura F. Spira and Michael Page, 'Regulation by disclosure: the case of internal control'.

²⁶Philip Linsley, in the specific context of banks, suggests that 'the crafting of the risk narrative should be deemed a part of the risk management process – preparation of the risk narrative presents a significant opportunity for managers to reflect upon and question the perception of risk that permeates the bank': *UK Bank Risk Disclosures in the Period Through to the Onset of the Global Financial Crisis*. And the same argument would apply, though perhaps less strongly, to other types of business.

3.4 Generic risk reporting

Generic risk reporting discloses risks common to a number of businesses, which are, eg, in the same geographical location, the same economy, or the same industry. To the extent that the reporting simply identifies the existence of such generic risks it is usually regarded as unhelpful boilerplate. For example, one airline reports that ‘Failure to prevent or respond to a major safety or security incident could adversely impact our operations and financial performance’ (British Airways 2009-10 annual report). This is a real and significant risk. But as anyone who is an investor in airlines is presumably aware of the risk, reporting it will not tell them anything they don’t know already. So it might be concluded that reporting generic risks only provides useful information where there is also information specific to the reporting entity, eg, quantification of potential effects on the firm or specification of measures taken to combat the risk.

But there is also a view that boilerplate disclosures are useful because they show that management is aware of, and presumably doing something about, the risks listed. If a firm decides not to list a particular risk because it assumes that everybody already knows about it and that ‘disclosing’ it would therefore be superfluous boilerplate, readers may draw a different conclusion. They may think that the risk’s absence from the list indicates that managers are unaware of it or think it relatively unimportant. Two possible inferences from this are that:

- It may show that boilerplate risk lists are useful because they allow investors to draw conclusions about managers’ perceptions and priorities.
- But it may also show that boilerplate risk lists are potentially dangerous, as they could prompt investors to draw the wrong conclusions (eg, that managers ignore what they do not report). Managers concerned by this possibility are likely to disclose all potential risks, even though this adds to the volume of boilerplate.

Panel 3.3: Negative views on risk reporting

‘Risk factors are looked upon as boilerplate... [They] are almost meant not to be read, or relied upon’ – Tom Paulli, US IPO analyst, 2005.

Risk factor disclosures are a way of telling investors, ‘Seriously anything can happen... By investing in our business, you are agreeing that we owe you no duty of care other than not being crooks. We can promise you nothing else’ – a US corporate counsel, 2006.²⁷

It is tempting to suggest that boilerplate could be avoided by firm-specific quantifications of the possible effects of particular risks. Unfortunately, the potential effects of most of the risks that firms disclose in their risk reports are not quantifiable. For example, the pharmaceuticals company GlaxoSmithKline discloses that ‘when drugs and vaccines are introduced into the marketplace, unanticipated side effects may become evident’. This may give rise to product liability litigation. What would be the point in trying to quantify the potential losses from this risk? What would have been the point in BP’s trying to quantify the potential losses from the Deepwater Horizon incident before it happened (Panel 3.1)? The potential losses in such cases depend on exactly what happens and where, and cannot be forecast.

In fact it is likely that the most important risks facing a business will often be the generic ones. Most of the risks that a business has to deal with derive from the nature of its activities and from the location of its operations. Firms with similar activities and based in similar locations will face much the same risks. Generic risk reporting may be boilerplate, but it may also provide the best description of the key risks the business faces.

If anything, it is perhaps unfortunate that risk reporting is not more generic. Firms with similar business models sometimes report different principal risks and different mitigating factors because the identification of which risks and which mitigating factors are worth reporting is a subjective process. It is therefore possible – even likely – that identical firms will report different lists of risks and different mitigating factors. The challenge for users is to try to work out whether the reporting differences indicate significant differences in risks and risk management or are merely random.

²⁷Both quotations appear in John L. Campbell, Hsinchun Chen, Dan S. Dhaliwal, Hsin-min Lu and Logan B. Steele, *The Information Content of Mandatory Risk Factor Disclosures in Corporate Filings*.

Panel 3.4: Research on boilerplate

Laura Spira and Michael Page, in 'Regulation by disclosure: the case of internal control', note that 'while the use of "boilerplate" has generally been deplored, there has been little analysis of why it occurs'. They suggest a number of reasons why companies adopt boilerplate forms of wording, and they distinguish 'boilerplate' from 'statements of the obvious'. The latter are no more (or less) informative than boilerplate, but use original wording rather than copying somebody else's. Using original wording, they suggest, can be a mistake as it might arouse readers' suspicions.

Tougher enforcement seems unlikely to make a difference. In the US, the SEC has complained that risk disclosures are 'too broad and generic' and told preparers that they should provide disclosures that are 'unique to you and your business'. But the outcome of such interventions may well be longer and fuller generic disclosures.²⁸

Nor are more specific requirements likely to provide a solution to the problem. Another comment from the 1997 discussion in the US was that 'the current requirements ... are subjective, open-ended and ambiguous, which allows firms to report almost anything (or nothing) without violating the requirements.' This position does not seem to have changed as regards qualitative disclosures. Indeed, a related conclusion at the same discussion was: 'Participants agreed that it is impossible to have a framework for risk selection that is specific about the types of risks that should be disclosed and at the same time, inclusive of all risks that firms face.' This suggests that effective framing of risk reporting requirements will always be problematic.

An alternative view at the same discussion was that 'allowing managers discretion to choose which risks to report based on which they believe are significant is, in itself, informative. Risk selection by managers provides information about firm strategy and, in particular, about the risks on which managers focus their attention.' So vague reporting requirements can also be a benefit.

3.5 Risk management disclosures

Risks are logically distinct from their management, and so reporting risks is different from reporting how they are managed. But it could be argued that the significance of a firm's risks cannot be properly assessed by users of its reporting without knowing how they are managed, and in practice many companies include risk management information with their risk disclosures.

Measures to deal with risks are also often generic (if not, they will probably be proprietary²⁹) and, though quantification is frequently impossible, it is often omitted even where it is possible. One research study³⁰ gives the following examples of risk management disclosures from FTSE 100 companies:

- 'There is an ongoing process for identifying, evaluating and managing the significant risks affecting the business and the policies and procedures by which these risks are managed'.
- 'The Group uses derivative financial instruments to manage its exposures to fluctuations in foreign exchange rates and interest rates'.

There is a problem here in that, as far as the managements of these companies are concerned, their disclosures may well seem to be relevant and useful. But it is difficult to see what users will get out of the first one, and while the second one may be more useful, it might be still more useful with some quantification. Does it mean, for example, that the firm's results are unaffected by changes in exchange rates and interest rates? If not, how far might future results be affected by changes in such rates? It is also – to reiterate our earlier point – difficult for users to know how reliable such statements are. Another research study comments:

'Nearly all companies explain that they use derivatives to "hedge". Few admit to outright speculation, even though the losses some corporations incurred are prima facie evidence to the contrary.'³¹

²⁸See the example in Sarah Johnson, 'SEC pushes companies for more risk information'.

²⁹Robert S. Kaplan, in 'Accounting scholarship that advances professional knowledge and practice', notes that 'Risk management in organizations is highly complex and context-specific'.

³⁰Philip M. Linsley and Philip J. Shrivs, 'Risk reporting: a study of risk disclosures in the annual reports of UK companies'.

³¹Philippe Jorion, 'How informative are value-at-risk disclosures?'

Disclosures on risk management are often a mixture of:

- position statements, indicating that management takes risk seriously;
- descriptions of structure, often listing committees and reporting lines; and
- descriptions of process, explaining what the committees do.

But the effectiveness of a firm's risk management depends on the quality of its managers, and this is something that position statements and disclosure of internal structures and procedures are unlikely to reveal. Reporting on the quality of management is notoriously difficult – because it is inherently subjective and extremely complex, because managers cannot sensibly be asked to report on themselves, and because there would be awkward practical consequences if the reports were negative.

Reporting on the quality of risk management is not exempt from these difficulties. So there is a danger that requirements for disclosures on the adequacy of risk management will tend to result in the development of:

- accepted procedures that can be evidenced; and
- an implicit convention that such procedures should be regarded as sufficient evidence of the adequacy of risk management.

Whether risks have in fact been properly managed is something that would in most cases become clear only after the event, in the results shown by the firm's financial reporting.

The conclusion (Section 2.4) that banks' risk reporting before the crisis was misleading because it reflected their own assessments of risk and these assessments were themselves significantly mistaken has important implications for risk reporting by firms generally. In particular, it seems unduly optimistic to have high hopes for better descriptive risk reporting as long as such reporting is merely a reflection of management's view of risk. Risk reporting of this sort can be no better than management's assessment of risk, and if management gets it wrong, investors will be none the wiser. Some risk reporting, of course, is not merely a reflection of management's view of risk (eg, risk disclosures in financial reporting).

The growth in the demand for risk reporting reflects, among other things, the expansion of risk management as a discrete activity and growing faith in the efficacy of risk management techniques. Some consider this faith is misplaced or at least that we know much less about how to manage risks than is commonly assumed (see Panel 3.5).

Panel 3.5: Doubts about risk management

The economist John Kay, in an article in the *Financial Times*, 'Don't blame luck when your models misfire', writes that:

'[T]he search for objective means of controlling risks that can reliably be monitored externally is as fruitless as the quest to turn base metal into gold. Like the alchemists and the quacks, the risk modellers have created an industry whose intense technical debates with each other lead gullible outsiders to believe that this is a profession with genuine expertise.'

In 'The risk management of nothing', Michael Power suggests that:

'[T]he growth of risk management from the mid-1990s onwards ... was less about managing risk as it is formally understood and more about creating organizational rhythms of accountability, and auditable representations of due process'.

Power focuses on the 'near theological belief' in enterprise risk management (ERM), especially the template for ERM provided by COSO – the Committee of Sponsoring Organizations of the Treadway Commission. He notes that this ERM model 'is strongly, if not exclusively, influenced by accounting and auditing norms of control, with an emphasis on process description and evidence'.

The motivation for Power's paper is the evident failure of risk management in the run up to the financial crisis. He suggests that ERM led to a 'rule-based compliance' approach to risk management, with 'regulations to be met, and ... extensive evidence, audit trails and box "checking"'. This approach can be seen as 'a defence against anxiety' that allows organizations to assure themselves and others that their risks are being effectively managed.

Panel 3.5: Doubts about risk management (continued)

Robert S. Kaplan, in 'Accounting scholarship that advances professional knowledge and practice', notes that much work is currently being done by COSO and others 'to promulgate rules and standards on companies' risk management practices'. He then poses the presumably rhetorical questions:

'Is the practice of risk management sufficiently stable, mature, and understood that now is a good time to develop risk standards and regulations? Or is it better for companies to innovate and experiment with different risk management approaches before regulators standardize and codify practices?'

An alternative approach to risk management disclosures involves distinguishing between manageable risks and unmanageable risks. For unmanageable risks, what is required is some measure of financial or operational strength or a disaster recovery procedure – features that we may describe as 'resilience'. In some ways, disclosures on how well a firm would be able to cope with unmanageable risks are more interesting than information about its procedures for dealing with manageable risks. For example, long explanations by a bank about how it manages risk might be less informative than information about its financial resilience, as this shows its ability to cope with both theoretically manageable risks and the unmanageable ones (which may turn out to include the supposedly manageable ones).

Resilience is not typically related to specific risks and their management. Indeed, the fact that it does not require specific risks to be identified in advance is an advantage. It allows firms to cope with losses or cash calls or physical disasters regardless of their precise origin. Before the financial crisis, growing faith in banks' ability to manage risks was accompanied by a deliberate reduction in their financial resilience – as shown in their capital ratios. As the crisis has dented confidence in the effectiveness of risk management techniques, there has been a renewed interest in resilience.

3.6 Inevitable limitations

Investors need to be aware that there are key risks that will never be disclosed by the firms in which they invest, but which may well prove to be the most important of all. For example, a major risk in most businesses is poor management decisions. It seems probable, to give a topical illustration, that some leading banks had to be rescued in the financial crisis because they made important acquisitions either before or during the crisis without performing full due diligence on the targets. Others did not have to be rescued because, while they tried to make the same mistakes, they were lucky enough to be outbid. No firm's disclosures are likely to include warnings of this sort of risk – though in the US firms do warn that 'acquisitions may have an adverse effect on our business'.

An investor's list of key risks that will never be reported might well include:

- **Poor management decisions.** Past success is no guarantee against making poor decisions. Indeed, the more successful managers have been, the greater the risk of hubris.
- **'It never occurred to us this could happen.'** Businesses are often sunk by the risks they are unaware of or consider insignificant. Risk reporting will not capture these – though some firms point out that, eg, 'Additional risks not presently known to us, or that we currently deem immaterial, may also impact our business' (Vodafone 2009-10 annual report).
- **Regime risks.** A firm that has made a major investment in a country with a corrupt or unstable regime is unlikely to provide, in its public reporting, a frank assessment of the risks involved.

There are other risks that firms may well recognise, but are liable to underestimate. Prominent among these are:

- **Competition.** Every firm is confident in public that it can cope with the competition.
- **Technical change.** This can make firms' business models unexpectedly obsolete.
- **Changes in demand.** Changes in consumer tastes and fashions are difficult to predict.
- **Legal risks.** Future changes in the law can be difficult to predict and incidents that give rise to major litigation are often unexpected.

- **Forces of nature.** Every year there are earthquakes, hurricanes, floods or droughts that are, in the affected areas, 'the worst since records began'. Why would people expect something that they have never experienced?
- **Unprecedented events.** It's not just natural events that are unprecedented. The financial crisis – or elements of it – also seemed to be unprecedented. For example, those who invested in subprime mortgages comforted themselves with the reflection that – across the US as a whole, as opposed to in specific parts of it – for at least 60 years there had never been a fall in domestic property values.³²
- **Rare events.** In some business activities there seems to be an inbuilt tendency to underestimate the likelihood of rare events, which can have disastrous consequences. This may be particularly so in finance where probabilities are sometimes calculated on the basis of relatively short (often unusually stable or benign) periods of experience.³³
- **Systemic risks.** While managers may be able to forecast and manage risks that are specific to their business, it is much more difficult for them either to forecast or to manage systemic risks. These can only be understood, provided for, and reported on by those who have a good overview of the system as a whole.
- **Connected risks.** It is difficult for managers to understand in advance how risks are connected. Systemic risks are a specific and potentially extreme case of such connectedness.
- **Reputational risk.** Before the E.coli outbreak of May 2011, Spanish growers can hardly have taken into account the risks to their business from inaccurate statements by the German government. Equally, trivial events, if they are picked up by the media, can have a disproportionate effect on a firm's reputation. Firms underestimate the risks precisely because the effects can be so disproportionate that they are unpredictable.³⁴
- **Political risks.** People tend to assume that the world, or at any rate the more prosperous parts of it, will remain stable and peaceful. History shows that wars and political instability are not unusual, but are often a surprise.

The business reporting of risks cannot be expected to cope successfully with these very significant issues. The real world of business is always likely to be riskier than risk reporting will convey. In general, this bias towards optimism may be no bad thing as a completely realistic appraisal of risks might have an unduly dampening effect on entrepreneurial activity.³⁵

There are also other risks for which individual firms are unlikely to be the best sources of information. For example, the fortunes of every firm are dependent to a greater or lesser degree on the business cycle, but forecasts of the level of business activity are best obtained from professional forecasters rather than from firms' business reporting. Similarly, as noted above, no individual firm's risk reporting is likely to provide a good view of systemic risks. This information needs to be provided by a body that can take an overview of the system – presumably a financial stability regulator or similar organisation.

3.7 Users' responses to risk information

It seems likely that professional investors will often understand the business models of the firms that they invest in, including the risks that they involve. So it should not in general be expected that lists of principal risks would provide investors with new information, unless the investor had not previously understood the firm's business model. Investors' understanding of risk will draw on information from a number of sources and will not depend purely on the disclosures made by the managers of the firm in which they invest or are considering as an investment. Managers have inevitable limitations in their knowledge, biases in their expectations and incentives that

³²Michael Lewis, *The Big Short*, p89.

³³Nassim Nicholas Taleb draws attention to this tendency in *Fooled by Randomness* and, at greater length, in *The Black Swan*. In a diagram representing a probability distribution, the parts of the distribution showing the probabilities of extreme positive and negative outcomes are the 'tails'. Risk from rare events is therefore sometimes referred to as 'tail risk'. Where the probabilities of extreme positive or negative outcomes are higher than in a normal distribution, the distribution is said to have 'fat tails'. Fat tails seem to be common in probability distributions of changes in market prices.

³⁴The best known example in the UK is Gerald Ratner's jokey, disparaging remarks in 1991 about some of his jewellery company's products. This severely damaged the business and led it to change its name from Ratners Group to Signet Group, as well as to Mr Ratner's departure.

³⁵Frank Knight suggests that a measure of optimism is essential to entrepreneurial activity. An entrepreneur always believes that 'he can make productive services yield more than the price fixed upon them by what other persons think they can make them yield': *Risk, Uncertainty, and Profit*, p281.

affect their disclosures. Sensible investors make allowances for this, diversify their sources of information and look for checks on the information provided by managers (a form of risk management by the investor).

Firms' risk disclosures are therefore made to an audience that already has expectations as to what they will contain. The question for investors is always: does this information confirm what I thought or does it contain a surprise? As different investors will have different degrees of knowledge and different objectives in using risk information, their reactions to risk disclosures are also likely to be highly varied.

Where investors do encounter information about a risk that they had not previously considered, it will probably be difficult for them to know how to reflect it in their own decisions. Possible reactions are:

- concluding that the new information is insignificant – ie, ignoring it;
- reflecting it in their valuation of the firm – which will be a subjective matter, as the risk will almost certainly be unquantifiable; or
- deciding that the new information significantly changes their view of the firm, such that they no longer wish to invest in it.

This last category is worth a further look. What sort of information might have such consequences? One type of information that might have this effect would be something leading the investor to the conclusion that the firm's management is untrustworthy. Another might be the emergence of a significant and previously unsuspected litigation risk (eg, to take historical examples, asbestosis for the asbestos industry or the discovery that smoking can cause lung cancer). Another might be the unexpected emergence of significant political risks or of major technological changes that would make a firm's products redundant. These are all major risks that could well have significant effects on an investor's decisions. However, they are not the sort of risks about which investors would expect to be informed, in the first place, by the firm itself.

On the other hand, investors who would not otherwise understand a firm's business model may well learn a good deal about it from the firm's descriptive risk reporting. An investor may understand a firm's business model up to a point, but find that risk disclosures usefully deepen his understanding. And different investors will no doubt have very different levels of understanding of such things. Investors are not born with the knowledge that oil firms face losses if they are responsible for oil spills or that pharmaceuticals companies face litigation if their products harm people. No doubt for such investors the risk reports that they read are, when they first read them, useful and informative. Even the best-informed investors start off uninformed and have to get their education from somewhere.

3.8 The cost of capital problem

The research evidence available to date does not show conclusively that risk reporting in general either reduces or raises the cost of capital. This problem is not unique to risk disclosures. It is difficult to demonstrate a link between any particular disclosure and the cost of capital. However, it is at least worth considering the possibility that increased risk disclosures might not reduce firms' cost of capital.

The theoretical case in favour of the proposition that risk reporting reduces the cost of capital is, as we stated earlier (Section 1.1), that it reduces information asymmetries,³⁶ therefore reduces investors' uncertainties, and therefore reduces the return that investors will demand to compensate them for uncertainty. A lower return to investors translates into a lower cost of capital for business.

What are the arguments on the other side, in favour of the proposition that risk disclosures do not reduce the cost of capital? There seem to be four possible reasons why this might be the case:

- **The disclosure is not news.** Investors have an understanding of the business they invest in – its model and its risks – even in the absence of specific risk disclosures by the business. It is quite possible that lists of risks in the company's annual report add nothing useful to what investors know already. Indeed, it could be argued that if the first time investors learn of a significant risk is when they read the annual report, there has been a significant failure in communication.

³⁶As we noted in Chapter 1, this also involves reducing investors' estimation risks.

- **The disclosure is irrelevant.** Typical disclosures on risk management – position statements, descriptions of structure and process – do not seem relevant to helping investors decide how well the risks are managed.
- **The disclosure is not credible.** Management disclosures can achieve credibility either through independent verification or through the managers' establishing a track record for reliability. Lists of principal risks are not independently verifiable at the time (because they are too subjective) and not verifiable by subsequent experience (because there is no ex post settling up), so managers cannot establish a reputation for credible risk disclosures.
- **The disclosure is bad news.** If, contrary to the point made above, a risk disclosure is genuine news to investors (and relevant and credible), it may be bad news in the sense that it leads investors to conclude that the business is riskier than they had realised. This would tend to increase the cost of capital. Relevant and credible risk disclosures may not always be bad news, of course, but managerial incentives tend to encourage them towards getting good news into the market, while hoping that bad news will go away. So if risk disclosure requirements compel managers to disclose risks that they would not otherwise have reported, these risks are more likely to be bad news than good news. Some of the research evidence points to risk disclosures being taken as bad news by the market, and so increasing the cost of capital.

This analysis does not apply to all disclosures that are relevant to an assessment of risk. For example, analyses of income or assets (eg, showing concentrations on particular sectors or customers) or segmental analyses of results probably provide users with new, credible and relevant information for the assessment of risk. It may therefore have the desired effects of reducing investors' uncertainties (though it may also increase their assessment of the firm's risks) and allowing them to make a more confident assessment of the risks of a particular investment. However, such information is not what people usually have in mind when they talk about risk reporting, which is descriptive risk lists.

3.9 Realistic expectations

Perhaps the most important challenge for risk reporting comes from the high expectations that surround it. These have been building up for decades, but have been intensified by the financial crisis. They are legitimate, but may well be disappointed.

One academic writer on risk reporting concludes:

'In a voluntary disclosure regime, risk reports will be of poor value for the investors first of all because the forward-looking information disclosed is non-verifiable at an ex ante stage. This allows for discretion and manipulation, and cannot be overcome, but [may be] slightly limited by regulation. Mandatory risk disclosure does not necessarily change the results obtained under voluntary disclosure. In consequence, consistent with empirical findings the value of risk reporting for its users must not be overestimated.' He adds that his paper implies that 'the value of risk reporting is generally overestimated'.³⁷

To some extent this perhaps reflects a broader problem. This is the usefulness (or lack of it) of many qualitative forward-looking disclosures, whether about risk specifically, or about the firm's plans and prospects in a more general sense. Again, great faith has been placed in the efficacy of such disclosures in recent decades and they have grown enormously in volume, but it remains to be shown how useful they are. The evidence suggests that, for forward-looking disclosures generally, the quantified and verifiable tend to be more useful than the qualitative and unverifiable.³⁸

Because none of us has perfect foresight, all forward-looking information is liable to be falsified by subsequent events. Even the best risk reporting will not save investors and others from unpleasant surprises. Donald Rumsfeld's famous comments on uncertainty are a succinct summary of the position:

'There are known knowns; there are things we know we know. We also know there are known unknowns; that is to say we know there are some things we do not know. But there are also unknown unknowns – the ones we don't know we don't know' (press conference, 12 February 2002).

³⁷Michael Dobler, *How Informative Is Risk Reporting? A Review of Disclosure Models*.

³⁸See Saverio Bozzolan, Marco Trombetta and Sergio Beretta, 'Forward-looking disclosures, financial verifiability and analysts' forecasts: a study of cross-listed European firms'.

Users of risk reporting need to recognise its limitations. Sensible investors will use other sources of information to make their own assessments of, for example, political risks. They will not expect a realistic public estimate of the risks of doing business in Country X from the managers of a business that is heavily invested there. But they have a right to expect full disclosure of how much of the firm's business is done there, how much capital it has there, and how much of its profits are made there. All this information should appear in the firm's quantitative disclosures. Investors can then make their own assessments of the firm's risks and make their own decisions as to whether – or at what price – they are willing to invest their own money in such a firm or whether, if they are already investors in the firm, a stewardship intervention would be appropriate.

If expectations of risk reporting are unrealistic then, even if the reporting of business risks improves along the lines that we suggest in the next chapter, people will still be disappointed by it. So before any recommendations for change are put into effect, there is a need to consider what can be learnt from the experience of risk reporting to date and to reflect these lessons in realistic expectations of what it can achieve in the future.

3.10 Chapter summary

We identify five main reasons why the usefulness of risk reporting by businesses across different sectors sometimes seems to be in doubt:

- It is impossible to know even after the event whether most qualitative, and some quantitative, risk reporting is accurate or inaccurate. This must limit the reliance that users can place on it.
- There are often competitive costs to informative risk disclosures and they also have potential costs for managers. These costs may exceed the perceived benefits of risk reporting, leading to uninformative disclosures. Indeed, risk reporting creates its own risks and so needs to be undertaken by preparers, and interpreted by users, as an exercise in risk management.
- It may well be appropriate to comply with requirements for the provision of risk lists by making generic disclosures, even though they will be seen as boilerplate.
- The effectiveness of a firm's risk management depends on the quality of its managers, and this is something that statements of the company's attitude to risk and disclosures of internal structures and procedures are unlikely to reveal.
- There are some risks that firms will never report and others that they are always liable to understate.

For many users, therefore, risk lists may provide little if any useful new information. When they do provide new information, it may be difficult for users to know how to reflect it in their own decisions.

Because of the problems with risk reporting that we have identified, it is unclear whether improved risk disclosures actually reduce the cost of capital, as had been hoped. It is possible that they increase the cost of capital.

In the final chapter of this report, we suggest seven principles for better risk reporting by businesses. But even if these principles are adopted, people will still be disappointed by risk reporting if their expectations for it are unrealistic. With the benefit of hindsight, people often wonder why firms failed to foresee problems ahead and they tend to forget that the future is always full of unknowns, including 'unknown unknowns'. Investors need to recognise the inevitable limitations of risk reporting and so have realistic expectations of how much it can achieve.

4. THE WAY FORWARD

How can risk reporting be improved? We need to know more about what users want from it and how they use it. We need to recognise the strengths of financial reporting as a source of information about risk. And we can improve how risk information is presented and delivered.

Perhaps less 'risk reporting' would mean better information about risks?



4. THE WAY FORWARD

4.1 Better risk reporting

While perfection in risk reporting will never be achieved, it should be possible to improve it, and in this chapter we suggest how it could be improved. Risk reporting is, after all, still a relatively new phenomenon as a deliberate activity, and we should not be too dismayed that it has proved to be difficult. The way forward that we suggest may result in less in annual reports that is labelled as 'risk reporting'. But annual reports should not be viewed as the sole source of reporting on risks and in some respects they are far from ideal for this purpose. As we noted in an earlier publication in the *Information for Better Markets* series³⁹, the annual report forms only a fraction of a firm's total reporting, and is perhaps more useful as a work of reference than as a way of transmitting important new information.

To a large extent, where information about risk continues to appear in the annual report, it should be integrated with other disclosures. And perhaps the most useful information will appear in the financial statements. The result of our proposals, therefore, might well be less 'risk reporting', but the communication of better information about risk – which should be the real objective.

In recent years firms have made efforts to think more carefully about how to improve their risk reporting and this has resulted, at least in some cases, in new approaches to disclosure. For example:

'In 2010, Barclays stood back to consider how our principal risk disclosure could be more informative. Ideally, this disclosure should summarise the key risk exposures and link to other parts of the annual report that provide further analysis. In the interests of clarity and conciseness, we used a tabular format to present information on the following areas:

- the nature of the risk including the events or circumstances that led to it;
- the process in place to manage the risk; and
- how the risk currently affects Barclays, making specific reference to the most significant risk areas and how they are mitigated.⁴⁰

We believe that it would be helpful to put forward some ideas of potentially general application, and we therefore suggest seven principles for better risk reporting:

- tell users what they need to know (Section 4.2);
- focus on quantitative information (Section 4.3);
- integrate into other disclosures (Section 4.4);
- think beyond the annual reporting cycle (Section 4.5);
- keep lists of principal risks short (Section 4.6);
- highlight current concerns (Section 4.7); and
- report on risk experience (Section 4.8).

It is important to have practical solutions to the problem of how to improve risk reporting. Risk reporting requirements vary widely among different jurisdictions, and so it would be impractical to put forward improvements to them that would have general validity. In any case, and perhaps more importantly, the evidence suggests that risk reporting requirements often have only limited effectiveness.

³⁹*Developments in New Reporting Models*, Chapter 1.

⁴⁰Wendy Stanford, 'How to declutter reporting'.

For these reasons, we do not propose new or tougher regulation of risk reporting. The seven principles are purely points for consideration by those interested in improving risk reporting and by preparers of corporate reporting information. They are intended to apply to public companies in all sectors. (We use the term ‘public companies’ to refer internationally to what are commonly known in the UK as ‘listed companies’.)

4.2 Tell users what they need to know

Users of corporate reporting want information about a company’s risks so that they can make their own assessment of risk. Companies should focus on this objective in deciding what to disclose.

Companies should know what is of interest to their users. As the Financial Reporting Council points out:

‘The company is best placed to know what users of annual reports and financial statements are interested in – because it is the board of directors and management that have direct contact with investors, analysts and other users of the annual report and the financial statements.’⁴¹

Across the market as a whole, though, relatively little is known about what information users find helpful in making their own risk assessments, so it would also be useful to investigate this. The investigation should look at how risk disclosures are integrated into users’ analyses of firms’ prospects rather than be a sort of beauty contest where users are asked to judge risk reports – an exercise that can end up focusing on characteristics other than usefulness. The research should also show how risk reporting is reflected in users’ outputs or decisions. Better risk reporting should, for example, be reflected in better identification of risks in analysts’ reports on companies. It would be useful to see how far analysts’ risks match those identified by the companies themselves and to understand how analysts form their views on risk.⁴²

Different users have different information needs and different views on which sources are most useful in meeting these needs, so understanding users’ needs may give unclear or conflicting pointers as to what needs to be done. But the exercise should be helpful none the less, even though decisions would then have to be taken as to which specific needs it would be easiest and most useful to meet, and how best to do it.

It may also be useful to pay special attention to the information that credit-rating agencies and regulators find most helpful, as their job is to assess risk. They are interested in a special type of risk, though: the probability of default. And both groups have access to private information. Other users, reliant on public information, may be interested in risk more broadly understood; however, they will also be interested in the probability of default.

One interesting question to pursue as part of this inquiry might well be: how do some firms avoid being criticised for boilerplate? Are they omitting risks that they assume readers of their reports will already be aware of? Are there special features of their business model that give rise to idiosyncratic risks? Are they able to make useful, firm-specific disclosures about risk without incurring proprietary costs?

Panel 4.1: Potentially useful disclosures

We set out below a number of potential risk disclosures by firms. It would be useful to know how far they would help to meet investors’ needs, and companies might experiment with disclosures such as these and see whether users find them helpful:

- **Insurance cover.** This would indicate in one respect the extent to which potential risks have been mitigated by management action, and might also provide useful information as to which risks management considers most serious.
- **Whether particular risks are growing or diminishing.** While it may be impossible to measure most risks, managers probably have a view on whether they are getting better or worse.⁴³

⁴¹ Financial Reporting Council, *Effective Company Stewardship: Next Steps*.

⁴² Another source of information for the inquiry could be submissions to regulators and standard-setters from representative groups of users, although it may not always be clear from these submissions how the information requested would be used.

⁴³ This disclosure is advocated in PricewaterhouseCoopers, *Guide to Forward-Looking Information*.

Panel 4.1: Potentially useful disclosures (continued)

- **Whether the firm's risk appetite is growing or diminishing.** Calls for firms to disclose their risk appetite are common at present, but it is not clear how a firm can usefully describe to outsiders what its risk appetite is. Every firm wishes to convey the message that is both eager to seize opportunities and appropriately cautious in doing so. However, while it may be impossible to measure risk appetite, managers should know whether the firm is becoming more risk averse or more risk seeking.
- **The firm's internal discount rate or required rate of return.** This could give a measure of the firm's risk appetite. The argument is that, as higher returns usually mean higher risks, the higher a firm's required rate of return, the higher its implied risk appetite. On the other hand, sharply discounting future income could be a sign of risk aversion.
- **Key risk indicators (KRIs).** A recent publication from COSO⁴⁴ gives examples of KRIs for use by management, but similar – though probably less detailed – KRIs might also be used for corporate reporting purposes. Examples include:
 - For a 'buffet-style restaurant chain [that] monitors gas prices to identify sales and profitability trends that may signal the need for modifications to sales strategies' useful KRIs might be: 'Trends in per-gallon gasoline prices in the chain's geographic markets' and 'Trends in oil futures prices'.
 - For a 'regional grocery store chain [that] seeks to grow earnings by adding new stores in Northern Virginia and Washington, DC area' useful KRIs might include: 'Employment outlook for federal government agencies and government supportive businesses' and 'Consumer spending trends in Washington, DC area'.
- **Stress testing.** Going concern disclosures could be made more useful by stating how the going concern assumption was tested.

There is a view that users are really interested not in the identification of risks, but in knowing that risks are being properly managed. If correct, this should give a different slant to risk reporting, although it would also raise problems because of the difficulties in providing credible and relevant information on risk management (see 3.5 above).

Another view is that users do not in fact pay any attention to what is labelled as risk reporting as they know that it is of no value. It would be interesting to investigate this claim and see whether this is indeed the view of some users.⁴⁵ To the extent that it is true, it might fit with a hypothesis that demands for better risk reporting come more from regulators and other authorities rather than from users. However, if some users do regard risk reporting as unhelpful, it may also be because of the way in which risk lists are often presented, without appropriate contextual information.

An outcome of the proposed research may well be best practice examples that companies can look to when they prepare their own reports. In the UK, the ASB's operating and financial review guidance already includes useful hypothetical examples, but illustrations of instances that have actually been shown to be useful would be even better.⁴⁶

What can firms do now? Firms that want to improve their risk reporting now could ask the users of their own corporate reporting how their risk disclosures could be improved.

4.3 Focus on quantitative information

There is a perception that risk reporting is primarily something that belongs outside the financial statements. This is because the explicit risk reporting in annual reports typically appears in qualitative lists of risks. But as we pointed out in *No Surprises*, there is a good deal of risk reporting within financial statements, even if it is not labelled as risk reporting.

- Geographical analyses of activities imply different risks for each location in terms of, eg, varying growth prospects, political risks, and currency risks.

⁴⁴Mark S. Beasley, Bruce C. Branson and Bonnie V. Hancock, *Developing Key Risk Indicators to Strengthen Enterprise Risk Management*.

⁴⁵Santhosh Abraham, Claire Marston and Phil Darby, *Risk Reporting: Clarity, Relevance and Location*, suggests that it is.

⁴⁶The publications at PricewaterhouseCoopers' corporatereporting.com website include useful examples of best practice risk reporting.

- Sectoral analyses of activities imply different risks in terms of, eg, market growth, competition, and technological change.
- In general, any disaggregation of information within the accounts assists in risk assessment.⁴⁷
- Every asset on the balance sheet has implicit risks as regards the recoverability of the amount at which it is stated. The nature of these risks varies from asset to asset. The reported amount of an asset could also be seen as setting a limit to the possible loss on it, and therefore as a measurement of risk.⁴⁸
- Every liability on the balance sheet and every commitment not on the balance sheet carries implicit risks as to whether the firm will be able to settle it and, in the case of liabilities that are provisions, whether it will prove to be more expensive than currently expected. Unlike measurements of assets, the reported amount of a provision does not mark an upper limit to the potential loss that it represents. The measurements of provisions that appear in the balance sheet depend on probabilistic assessments of future events, as is also the case for the recoverable amounts of many assets.
- Financial reporting is full of information that equity investors and lenders use in considering risk: for example, the profit or loss and trends in profit or loss; net assets and trends in net assets; dividend cover and trends in dividend cover; interest cover and trends in interest cover; the gearing ratio and trends in the ratio; the current asset ratio and trends in the ratio; cash flows, the composition of cash flows, and trends in cash flows; and so on. As there is a presumed link between risk and return, if a firm's financial reporting shows that it is earning higher returns, this may in itself be evidence of higher risks.

Financial reporting therefore carries a great deal of information about risk even in the absence of explicit risk reporting (see the research referred to at Appendix 3, Sections A3.7-A3.9). There may also be extensive disclosures within financial reporting that are more clearly about risk – for example, disclosures under IFRS 7, *Financial Instruments: Disclosures*, information on contingent liabilities and contingent assets, or disclosures about going concern uncertainties.

From the point of view of investors, the great merit of quantitative disclosures in financial reporting, and to a lesser extent (because the disclosures may not be audited) elsewhere in a firm's reporting, is that most of them do not set out to provide management's view of risk. Instead, they provide the raw materials for investors to make their own assessments of risk. They also have other advantages: they are more likely to be checkable and capable of being standardised.

We suggest that, in future, more emphasis should be given to the role that the financial statements already play in risk reporting, and to identifying where incremental risk information can be brought within their scope. However, there may well be proprietary costs involved in disclosures of this sort.

The production of quantitative data is typically easier for financial instruments than for other assets and liabilities, and therefore for financial than for non-financial companies. And even though banks already provide large amounts of financial disclosures related to risk, there may still be scope for improvement. For example, with the benefit of hindsight, what more detailed quantitative information on banks' assets, liabilities and commitments would have been helpful ahead of the financial crisis? And have these changes subsequently been picked up through compliance with Basel II Pillar 3 requirements or by changes in these requirements or in accounting standards?

The stress tests organised by banking and insurance supervisors also provide valuable information about risk, and it would be helpful to explore the use of such disclosures as an additional form of risk reporting by banks and insurers. This idea has already been implemented to some extent in the US, where the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 mandates stress tests for banks and requires summary results of the tests to be published; the market would no doubt find detailed results more helpful. If stress tests are to provide useful information, they must be based on appropriate assumptions. Regulators sometimes require politically convenient assumptions, eg, regarding the value of sovereign debt.

⁴⁷Stephen G. Ryan, 'A survey of research relating accounting numbers to systematic equity risk, with implications for risk disclosure policy and future research', notes that banking and insurance regulators receive significant disaggregated information to assist their assessments of risk, and calls for more disaggregated information to be publicly disclosed.

⁴⁸An alternative view is that the maximum loss on the asset would be measured by its deprival value – a basis of measurement not currently used in financial reporting. For more on deprival value (or 'value to the business'), see the *Information for Better Markets* report, *Measurement in Financial Reporting*, Chapter 3.

In calling for more emphasis on quantified information in risk reporting, we are not calling for more quantification of the probability that specific risks will be realised or of the potential losses from operational risks. In general, we do not think that attempts to quantify the probability of one-off future events or to forecast the potential losses that might result from them are likely to provide useful information.

What can firms do now? Firms can refer in their descriptive risk reporting to the valuable information on risk provided by their financial reporting and to any quantitative information elsewhere in their reporting, including on their website. They can consider whether there is any additional quantitative analysis that they can usefully provide.

4.4 Integrate into other disclosures

4.4.1 Disadvantages of separate risk reporting

Those who debate the structure of business reporting often assume two key principles:

- Users should be able to find everything that they need to know about a particular subject in one place. This, which we will call the all-in-one-place principle, lies behind proposals that risk reports should be a separate and self-sufficient feature within annual reports.⁴⁹
- Reports should not repeat information in different places. This seems to be an obviously sensible point – repeating information suggests that it is badly organised. We will call this the no-repetition principle.

Unfortunately, except in special circumstances, the two principles are incompatible. They are only compatible where the various subjects of business reporting do not overlap. Where they do overlap, there is a choice between satisfying the all-in-one-place principle and satisfying the no-repetition principle. They cannot both be satisfied at the same time.

In practice, the subjects covered by business reporting have expanded so significantly in recent decades that, for a public company, they inevitably overlap. Risk reporting provides an excellent example. It overlaps with, most conspicuously:

- disclosure of the business model (4.4.2);
- discussion of future plans and prospects (4.4.3);
- discussion of past performance (4.4.4); and
- financial reporting information on past performance and current position (4.4.5).

So while it may or may not be desirable to have separate reports on business risks, it will never be possible for them to include all relevant information without repeating what appears elsewhere in the corporate report. And although the trend in risk reporting has been to separate it from other disclosures, in one respect this is a psychologically unattractive approach. It means that risk reporting tends to become just a long list of risks, a recital of gloom and negativity, which will either put readers off or give them the implicit message that ‘You can ignore all this stuff, but they force us to put it in here.’

Risks are integral to business, and anyone who wants to understand a business needs to understand its risks. ‘Risk is part of every decision a company makes.’⁵⁰ But because risks are integral to a business, it will not usually make sense to report on them separately as though they could be detached from its business model or its performance or its future plans and prospects or even its financial reporting. The question is: what is the most effective way to communicate information about risk?

This does not mean that there is no place for a separate statement of business risks in corporate reporting, and indeed statutory and other requirements may mean that in practice such statements are currently unavoidable. Separate risk reports may well be useful for some firms – most obviously banks – where information about risks and their management is perceived to be especially important. For these institutions a ‘risk narrative’ (see Appendix 4, Section A4.3) may be an important feature of their reporting. But for many, perhaps most, firms a separate and self-contained statement of business risks will probably not be ideal. All of this reinforces the conclusion of *No Surprises* that what matters is providing the relevant information, not necessarily providing it in a separate report labelled ‘Risks’.

⁴⁹*Audit of Banks: Lessons from the Crisis* notes stakeholders’ concern that information on risk is often presented in a piecemeal way. The Financial Reporting Council, in *Effective Company Stewardship: Next Steps*, concludes that ‘any description of the risks a company faces should not be ... scattered about the annual report’.

⁵⁰International Corporate Governance Network, *ICGN Corporate Risk Oversight Guidelines*.

Whether our proposal that risk reporting should be integrated with other disclosures is indeed the best approach is an empirical question. It would therefore be helpful for researchers to investigate what form of presentation of risk disclosures is most useful for investors. Any research on this issue would need to bear in mind that it is not investors' understanding of risk alone that matters, but their overall understanding of the firm and its prospects. There is no point in improving users' understanding of one aspect of a business if it is at the expense of their understanding of other equally important aspects.

4.4.2 Business model disclosures

In the UK, listed companies are now required by *The UK Corporate Governance Code* to disclose their business models. While terms such as 'business model' and 'strategy' have no generally accepted meaning, it seems reasonable to regard the two terms as equivalent for the purposes of disclosure. In which case, the new requirement matches the call in *No Surprises* for companies to disclose their strategies, though this did not envisage a mandatory requirement. Other jurisdictions have similar requirements, though we are not aware of any others that use the words 'business model'.

Panel 4.2: Business model disclosures in practice

In April 2011 the Black Sun consultancy conducted a review of practice shortly after the introduction of the business model requirement in the UK, *The Business Model – Is It the Missing Link?* They write:

'For many businesses, having to consider disclosing the business model has acted as a catalyst for internal debate over what it actually is. Indeed, in some cases, several different descriptions of the business model can be proposed by individuals from the same company. This is often quite a helpful and productive debate to have as it helps management consolidate views and ensure that there is cohesion internally in terms of what the business is trying to do and what its purpose is.'

Views may differ on how useful this process is. As we noted in the Information for Better Markets report *Business Models in Accounting*, there is 'a risk that the disclosed business model will be – without any dishonesty – "what we agree to tell people when they ask us what our business model is" rather than the possibly changeable and uncertain set of ideas that actually drives the business.'

As a firm's key risks will typically be inherent in its business model, it would be appropriate to explain them in explaining the business model, rather than to explain the model in one report and then point out the risks that it involves in another one. So the UK requirement further diminishes the case for a separate report on business risks. Where there are similar requirements in other jurisdictions, the same argument would apply.

Sometimes risk reporting is uninformative because there is inadequate contextual information. Users may not understand what exactly a disclosed risk means or how it might affect the firm. Understanding risks often requires a sophisticated understanding of the business and its context, which preparers of risk reports are able to take for granted because they work in the business. But they need to think about what external users will or will not understand without further explanation. Integrating risk reporting into business model disclosures may help users understand its significance.

4.4.3 Performance discussion

A key motive for users' interest in information about risk is that they want to know how far past performance is a reliable guide to the future. So the discussion of past performance could be seen as primarily a risk disclosure. The forward-looking purpose of such discussions is, helpfully, explicit in North American requirements for management discussion and analysis, but not in Europe. As such material is company-specific, it should be able to avoid the accusation of boilerplate.

The relevant reporting requirements have changed in recent years, at least in the UK and in the EU as a whole. In the UK, the Companies Act requirements for a business review mandate 'a balanced and comprehensive analysis of the development and performance of the company's business during the financial year'. We would expect the disclosures in this review to contain useful information about the risks the company faces as they will highlight special factors that affected the company's performance during the year.

It may be helpful for preparers to consider the factors they have identified in discussing past performance and the factors that were not worth mentioning in relation to past performance but which may well affect future results, and to highlight these in the firm's discussion of its plans and prospects.

4.4.4 Plans and prospects

It seems natural to incorporate a discussion of risks into any disclosure of the firm's plans and prospects. This would also give an opportunity to discuss opportunities as well as risks. In this report we have focused on risk as it is conventionally understood, which is about what might go wrong. But even if risk is understood in this one-sided way, it is important that forward-looking reporting should cover uncertainties that have potentially positive outcomes as well as uncertainties that have potentially negative outcomes.

Again, the relevant reporting requirements have changed in recent years, in the UK, in the EU as a whole and no doubt in other countries. In the UK, the Companies Act requirements for a business review mandate disclosures on 'the main trends and factors likely to affect the future development, performance and position of the company's business'. These disclosures should contain useful information about the risks the company will face in the future.

For many risks, potential upsides are already assumed in managers' expectations of the firm's prospects. Managerial assumptions about the future inevitably tend towards the optimistic, as the only projects undertaken are those that are expected to succeed, whereas in practice many of them will fail. Projects that are not expected to succeed, even though some of them might succeed if they were undertaken, are usually not undertaken in the first place.⁵¹ It would therefore be reasonable to take the view that upside 'risks' are often already incorporated in managerial expectations. What is of interest to investors is therefore what might cause these expectations to be disappointed.

No doubt some firms do better than they expect, but this is less common than the opposite experience. Negative 'profit warnings' are more frequent than positive 'estimated results improvements'. When results are better than expected, expectations tend to be adjusted upwards relatively quickly. When results are worse than expected, managers are reluctant to adjust expectations downwards and instead seek ways to remedy the problem or, in some cases, reasons to explain it away.

While this analysis might indicate that separate identification of possible positive risks will be even more difficult than separate identification of negative risks, there will be many risks where a positive outcome is in principle as likely as a negative one. This will often be the case for example with market risks arising from possible changes in prices and rates (eg, interest rates or exchange rates). Disclosure of both positives and negatives is perhaps especially important in such cases as derivative positions may well skew the firm's position so as to limit losses. A US study gives an example of a firm that discloses the effect of both a 10% appreciation in exchange rates (a \$9 million increase in the fair value of options and forwards) and a 10% depreciation (a \$6 million decrease in the fair value of options and forwards).⁵² We would envisage that such disclosures would be included in a firm's financial statements.

4.4.5 The financial statements

At 4.4.2 to 4.4.4 we have discussed the integration of risk reporting with business model disclosures, the discussion of past performance, and information on plans and prospects. But risk reporting also needs to be integrated with the firm's financial reporting. As we have emphasised, the financial statements contain much valuable information on risk. It will be important to cross-refer to this in any discussion of risk elsewhere in the firm's reports in order to give an accurate picture of its risks.

4.4.6 Existing reporting requirements

Existing reporting requirements sometimes require separate reports on risk, so the approach that we advocate would not be compatible with such requirements unless they allow compliance by reference to other disclosures.

⁵¹ A possible exception would be firms that take a portfolio approach to projects. They expect some of them to fail, but do not know in advance which will do so. However, they expect the portfolio as a whole to succeed. Firms that engage in, eg, exploration for minerals, new product development, and funding for start-up investments may take this approach.

⁵² Leslie Hodder, Lisa Koonce and Mary Lea McAnally, 'SEC market risk disclosures: implications for judgment and decision making'.

In the UK, the Companies Act business review requirement to provide ‘a description of the principal risks and uncertainties facing the company’ is most obviously complied with by a separate report. Indeed, the Accounting Standards Board regards the absence of a separate report as non-compliance with the Act’s requirements.⁵³ The wording of the Act does not appear to be incompatible with integration of the disclosures in parts of the business review dealing with, eg, ‘the development and performance of the company’s business during the financial year’ and ‘the main trends and factors likely to affect the future development, performance and position of the company’s business’. But preparers are unlikely to wish to adopt this interpretation of the Act as long as regulators are known to take a different view.

At Panel 3.2 we noted the Financial Reporting Review Panel’s interpretation of the UK’s statutory requirements, which suggests that generic risk disclosures would be insufficient to meet these requirements.

What can firms do now? Firms can review how well their disclosures on such matters as the business model, future plans and prospects, etc, make clear what the related risks are. Where they are implicit, do they need to be spelt out?

4.5 Think beyond the annual reporting cycle

Companies have an annual reporting cycle. Public companies in most jurisdictions usually also report more often than this – every six months or every quarter, but on a less comprehensive basis than in the annual report. This periodic approach to reporting is appropriate where the core of the report is financial statements, which necessarily cover a defined period of time. A periodic approach is also useful in terms of fitting in with the provision of information for corporate governance purposes, in particular for the annual meeting, and as a matter of practical convenience.

But companies also report much information as the need arises – for example, when they secure an important new contract, or make an acquisition or a divestment, or make changes in top management, or face an unexpected alteration in the trading outlook.

Risks don’t change once a year. The risks that firms face are often determined by their business model and location, and are much the same from one year to the next. But some risks are highly fluid and variable. Either way, an annual report does not seem to provide the most appropriate frequency for discussing business risks. What is needed is a form of reporting that in some respects constitutes a permanent record of the risks that are inherent to the business and in other respects changes as the need arises to reflect the way that risks change in the real world. The internet, which was still in its early days as a corporate reporting medium when *No Surprises* was published, seems to be the ideal way to provide both types of information. There may also be other items that currently appear in annual reports that would be better dealt with on firms’ websites.⁵⁴

One of the key points made in *No Surprises* was that firms disclose more about risks in prospectuses than they do in their annual reports (and do so without excessive boilerplate). Extensive disclosures about risk are now frowned on by some regulators and commentators, but to the extent that it is still thought useful to have more, rather than less, information about risks, a move to disclosing it in a ‘shelf’ document on the internet would help keep disclosures up to prospectus standards.⁵⁵

We therefore recommend that consideration be given to how risk reporting, and perhaps other forms of reporting too (including disclosure of the business model), might be taken out of the annual reporting cycle and instead updated as the need arises on firms’ websites. Putting information on the website also allows users to ‘drill down’ to further, supporting data where they wish to. This approach would imply changes in statutory or regulatory requirements in many jurisdictions, including the EU and the US. It would also raise important issues as to, eg, how far the information would be audited and how far ‘safe harbour’ provisions applicable to information in the annual report would extend to reporting on the internet.

⁵³Accounting Standards Board, *A Review of Narrative Reporting by UK Listed Companies in 2008/2009*.

⁵⁴A point also made in the ASB report, *Cutting Clutter: Combating Clutter in Annual Reports* and in the Department for Business, Innovation and Skills’ consultation paper, *The Future of Narrative Reporting*. In the US, any changes in the most significant risk factors have to be reported quarterly.

⁵⁵There is also a view that prospectus disclosures are rightly more extensive than those in an annual report, so it should not be expected that the annual report would keep up the disclosure standards found in the prospectus. On this view, a prospectus is an attempt to raise money from people who are deemed to be in a state of ignorance about the business. An annual report addresses those who have already decided to become investors in the business, and who can therefore be reasonably assumed at least in some respects not to be in a state of ignorance about it.

Panel 4.3: What is the best place for risk reporting?

In 'Risk disclosure: an exploratory study of UK and Canadian banks' Philip M. Linsley, Philip J. Shrivs and Mandy Crumpton ask:

'[I]s the annual report the most appropriate place for the disclosure of risk information? Although it is an important public document it is only published once a year and its primary focus is upon what has happened in the past... Risks alter, sometimes dramatically, and sometimes over very brief periods of time. Therefore, useful risk information may need disseminating by some other method.'

This is an appropriate question for research, so as to establish the best place for risk reporting. The answer may well differ for different users and for different types of risk reporting.

We do not envisage that risk-relevant information within financial reporting would be transferred to the website in this way. Nor do we envisage that a new continuous reporting obligation would be created specifically in relation to risks. It is already usual for jurisdictions with modern capital markets to impose generalised continuous reporting obligations on public companies. In the UK, for example, the requirement is to disclose information that would, 'if generally available, be likely to have a significant effect on the [share] price'.⁵⁶ Where such an obligation exists, any additional continuous reporting requirement relating specifically to risks would probably be superfluous and confusing.

What can firms do now? Firms can consider what permanent information on risk they can usefully put on their websites and, as risks change, what more ephemeral information it would be useful to provide there.

4.6 Keep lists of principal risks short

Those preparing risk reports sometimes produce long lists of what might go wrong rather than focusing on a few key risks. Long lists of risks are inevitably a deterrent to readers and they may offend against the principle set out in *Prospective Financial Information* (see Section 1.4 above) that disclosure should not become 'too complex or extensive to be understood or used by investors'.

Risk reporting might have more impact if firms focused on a small number of risks. This probably reflects many firms' actual practice in their internal reporting, where limits on management and non-executive time often make it essential to focus attention on limited numbers of risks. Firms should also disclose other risks if they consider it appropriate, but identifying a small number of key risks would give readers the opportunity to focus on something of reasonable length. In recent years firms have made efforts to think more carefully about which risks should be disclosed and this has indeed resulted, at least in some cases, in shorter lists.

Producing shorter lists of principal risks will only work if users of corporate reporting are prepared to accept that it will become more likely that, when things go wrong, they will not have been warned in the prioritised listing of key risks. So focusing users' attention on some risks to the exclusion of others would create its own risks for managers if users are unhappy with the results of this process. There may of course be more extensive listings of risks elsewhere in the company's reporting, and it would be wrong to discourage firms from reporting risks that they consider significant. There is also evidence that some users find long lists of risks helpful, and some statistical correlations suggesting that the stock market may view the length and number of risk disclosures as indicators of risk. This is another question on which more research is needed.

What can firms do now? Firms can highlight the small number of risks that they consider to be the principal ones facing the business. But they should not be discouraged from reporting any risks that they consider significant.

⁵⁶Financial Services and Markets Act 2000, s118C, and the Financial Services Authority's Disclosure and Transparency Rules, DTR 2.2. These could be seen as requirements that the annual report should not contain any significant new information, if significance is interpreted in terms of potential effects on the share price, as any significant new information should have been disclosed earlier, when management became aware of it.

4.7 Highlight current concerns

Users sometimes say that it would be helpful to know which risks managers are currently talking about. This tells them something about the business and – as users will second-guess which risks managers ought to be focusing on – something about the managers. Investors may also view this sort of disclosure as ‘the start of a conversation’⁵⁷ with management, rather than as something complete in itself. It also has the advantage that it is relatively objective, in that it is a factual question whether a risk currently is or is not a matter that appears on the agenda for board and management meetings. It may therefore be useful for firms to disclose this information. ‘Current concerns’ should be interpreted broadly. It would be helpful to regard management discussions on resilience (see 3.5) as falling within its scope.

We do not envisage that this would be a requirement. It is just something that firms can do if they want to provide more useful information on risk.

At any one time, different groups within the firm will be talking about different risks for different reasons, so it may be difficult to know what it would be most useful to disclose. For example, firms might disclose risks that are currently being discussed by the board or by the audit committee (neither of which will necessarily reflect managers’ concerns as opposed to those of broader groups within the firm, including non-executives) or by the risk management committee (but many firms may not have such a committee).

Three other practical issues that would arise with this proposal are that: it may be difficult to determine the point at which concerns should be disclosed; it may be difficult to distinguish between reporting risks and reporting problems; and it may involve proprietary costs.

When should risks be disclosed? When a new risk emerges or becomes more significant, it may occupy managers’ attention, but their focus initially will probably be on taking action to prevent it from becoming a significant risk. At a later stage, the risk may pass quickly from being a risk to being a loss, ie, a realised risk. For example, if managers become aware of a possible disruption to their supply chain, they will first of all seek ways to address the problem, eg, by using alternative suppliers. There may be a period of uncertainty when it is not clear how successful managers’ efforts will be, though they are optimistic that they will be successful. But perhaps there comes a point when they suddenly find that they have not succeeded and that the business is faced with significant disruption. During the period in which management is doing its best to prevent the risk from being realised, should its concerns be disclosed? Frequent disclosures of risks that then turn out not to be a major problem are an unattractive prospect and, by increasing share price volatility, could increase the cost of capital.⁵⁸

Distinguishing between risks and problems. As the previous paragraph implies, it may be difficult to distinguish between which risks currently most concern managers and which problems most concern them. Even when a risk is realised and has become a loss, arguably it continues to be a risk as management action will be aimed at containing the loss – the risk is that it will not be contained. An oil spill would be an example of this kind of problem. It is a risk before it happens. Once it happens the risk is realised (to some extent), but arguably it is still appropriate to classify it as a risk as long as there remains uncertainty about how bad it will be. There may then be consequential risks as to litigation, loss of reputation, and possible regulatory action.

Proprietary costs. Managers go to considerable lengths not to cause unnecessary alarm about the problems they face. To do otherwise would damage morale and motivation within the firm, reduce external stakeholders’ confidence in it, and assist competitors. Problems in firms often relate to the competence of management at some level of the organization – not necessarily the most senior level. The issue is not normally evident to outsiders, as managers no doubt succeed in resolving most of the problems they face. But it becomes clear that problems have existed or have been bigger than the company was prepared to admit when management – often new management – accepts defeat and announces that a product or service will be discontinued, or a plant closed, or a subsidiary sold, or senior managers have been replaced. Companies are not completely transparent about such things in the period before the decision is taken because there would be real costs involved in full disclosure. It may therefore be thought unlikely that managers will be fully open about what currently concerns them. If you ask people, ‘What keeps you awake at night?’, it would be naïve to expect an honest answer.

⁵⁷Laura Spira and Michael Page, ‘Regulation by disclosure: the case of internal control’.

⁵⁸See Christine A. Botosan and Marlene A. Plumlee, ‘A re-examination of disclosure level and the expected cost of equity capital’, for evidence that increasing frequency of disclosure might increase the cost of capital.

The proposal to highlight current concerns is not intended to replace longer lists of significant risks; and the risks that occupy managers' attention at any specific time are not necessarily its principal risks, so – if disclosed separately – it would be an additional disclosure. We envisage, though, that the most effective way of highlighting current concerns would be to do so in the course of other disclosures – about current plans and prospects, for example.

Against this, it could be argued that such disclosures are by their nature ephemeral. For example, following the March 2011 earthquake and tsunami in Japan, many firms around the world encountered supply chain risks, which would probably not have featured on their lists of current concerns in February 2011. Over time, such issues are resolved – how quickly will vary from one firm to another – and at some point they cease to be current concerns. So, given the ephemeral nature of such lists, their disclosure may be more appropriate for firms' websites rather than their annual reports. But that would imply separate disclosure rather than integration with other disclosures.

What can firms do now? Firms can highlight which risks currently cause them most concern.

4.8 Report on risk experience

Companies could usefully review their experience of risk in the reporting period. What went wrong? What lessons have been learnt? It would have been interesting, for example, after the onset of the financial crisis, to read what lessons about risk the surviving banks considered they had learnt.

The review could also look at how the firm's experiences during the period match up with the risks that it had previously reported. This would provide at least a partial ex post settling up, though unless it is recognised as merely partial it could be misleading.

Such a review might overlap with disclosures of principal risks and current concerns, as the firm's risk experience for the period might well shape its perception of risks for the future or feature prominently in the matters that currently command managers' attention.

What can firms do now? Firms can report on their risk experience over the past year, discuss how far it matches their previous risk reporting, and explain what lessons they have learnt.

4.9 Chapter summary

It is important to have practical solutions to the problem of how to improve risk reporting. Risk reporting requirements vary widely among different jurisdictions, and so it would be impractical to put forward improvements to them that would have general validity. In any case, and perhaps more importantly, the evidence suggests that risk reporting requirements often have only limited effectiveness.

For these reasons, our suggestions – set out in seven principles – do not include any proposals for new or tougher regulation. The principles are purely points for consideration by those interested in improving risk reporting and by preparers of corporate reporting information, and are intended to apply to public companies in all sectors. The seven principles for better risk reporting are:

- **Tell users what they need to know.** Users of corporate reporting want information about a company's risks so that they can make their own assessment of risk. Companies should focus on this objective in deciding what to disclose.
- **Focus on quantitative information.** Disclosing more detailed analyses of the quantitative data that firms already provide would give helpful new information. Too much weight has been placed on the production of descriptive risk lists. This is not a call for quantification of risks, which usually involves dubious assumptions about the probability of future events. Nor is it a call for qualitative information to be neglected. What we have in mind is more information on the breakdown of firms' activities, geographically and by sector, and on their assets, liabilities and commitments.
- **As far as possible, integrate information on risk with other disclosures.** Financial reporting provides much information on risks already, and this should be integrated with other risk disclosures. But information on risk should also be integrated with firms' descriptions of their business models, their forward-looking disclosures, their discussion of past performance, and their financial reporting. A firm's risks are usually inherent in its business model, so explaining the business model should involve explaining its risks. Risk is forward-looking and cannot be fully understood except in the context of broader forward-looking information about a firm's performance, plans and prospects.

- **Think beyond the annual reporting cycle.** Many risks stay the same from one year to the next. Others are highly variable and information on them needs to be updated more frequently than once a year. The internet, rather than the annual report, would probably be the right place for information on both sorts of risk.
- **Where possible, keep lists of principal risks short.** Users are currently faced with long and indigestible risk lists that are all too easy to ignore. Where it is useful for companies to disclose other risks as well as those identified as the principal ones, they should still do so.
- **Highlight current concerns.** It is likely to be of interest to users to know what risks are currently most discussed within a firm. These will often be different from the firm's principal risks, and disclosing them could give users a valuable insight into the business.
- **Review risk experience.** Companies could usefully review their experience of risk in the reporting period. What went wrong? What lessons have been learnt? How do their experiences match up with the risks that they had previously reported?

As for banks, their quantitative risk disclosures have already been expanded since the onset of the crisis through changes in accounting standards, implementation of Pillar 3 of the Basel II Accord on banking supervision and expansion of its requirements. Further improvements may be possible. Stress tests organised by banking and insurance supervisors, where they are based on appropriate assumptions, can also provide valuable information about risk, and it would be helpful to explore the use of such disclosures as an additional form of risk reporting by banks and insurers.

One outcome of all the changes that we suggest might well be that there is less of what is labelled as 'risk reporting' in companies' annual reports. But the proposed changes would mean that, overall, there is more useful information about risks. This should assist investors and other users of corporate reporting to form their own judgements on risk and, in this way, should also contribute to better stewardship of companies, a more efficient allocation of resources, and greater financial stability.

APPENDIX 1: REQUIREMENTS FOR RISK DISCLOSURES

Requirements for risk disclosures around the world, particularly including those in accounting standards, are now voluminous. What follows is merely a selection of some of the more important requirements.

A1.1 US

A1.1.1 Risk factors

The US Securities and Exchange Commission (SEC) requires publicly traded companies to disclose 'risk factors' in their annual (Form 10-K) reports and to update them in their quarterly 10-Q reports if they change. The factors to be disclosed, defined in the SEC's prospectus requirements (Regulation S-K, Item 503, paragraph (c)), are 'the most significant factors that make the offering speculative or risky'.

SEC guidance suggests that firms should 'generally avoid mitigating language' in their risk disclosures – eg, 'clauses that begin with "while," "although" or "however".' In practice, companies disclose how they manage risks in their MD&A disclosures (see below).

A1.1.2 Management discussion and analysis

The US SEC's requirements for publicly traded companies include an annual management discussion and analysis (MD&A). The requirements in their current form go back to 1980, although they have been amended on a number of occasions since then. The MD&A is to some extent about risks that the company faces. For example, there are requirements to:

'Identify any known trends or any known demands, commitments, events or uncertainties that will result in or that are reasonably likely to result in the registrant's liquidity increasing or decreasing in any material way' (Regulation S-K, Item 303, paragraph (a) (1))

'Describe any known material trends, favorable or unfavorable, in the registrant's capital resources. Indicate any material changes in the mix and relative cost of such resources' (paragraph (a) (2) (ii)).

'Describe any known trends or uncertainties that have had or that the registrant reasonably expects will have a material favourable or unfavourable impact on net sales or revenues or income from continuing operations' (paragraph (a) (3) (ii)).

The motivation for the requirements is the risk that users of the company's financial statements will draw unwarranted conclusions about the future from the historical information in these statements. The SEC's instructions to preparers state:

'The discussion and analysis shall focus specifically on material events and uncertainties known to management that would cause reported financial information not to be necessarily indicative of future operating results or of future financial condition... This would include descriptions and amounts of (A) matters that would have an impact on future operations and have not had an impact in the past, and (B) matters that have had an impact on reported operations and are not expected to have an impact upon future operations' (Instruction 3 to Paragraph 303(a)).

The SEC's guidance on the MD&A recognises that its requirements are for information that cannot be standardised:

'The MD&A requirements are intentionally flexible and general. Because no two registrants are identical, good MD&A disclosure for one registrant is not necessarily good MD&A disclosure for another. The same is true for MD&A disclosure of the same registrant in different years.'⁵⁹

Canada has requirements for an MD&A similar to those in the US.

A1.1.3 Sarbanes-Oxley Act

The US Sarbanes-Oxley Act of 2002 contains a requirement at s404 for the SEC to prescribe rules requiring publicly quoted companies to include in their annual reports 'an assessment ... of the effectiveness of [their] internal control structure and procedures ... for financial reporting'. As the controls and procedures that underlie a firm's financial reporting system are important components of its overall controls, these disclosures are potentially useful for assessing a firm's risks and/or its risk mitigation procedures.

A1.2 EU

The EU's Accounts Modernisation Directive of 2003 (Directive 2003/51/EC) includes a requirement that:

'The annual report shall include at least a fair review of the development and performance of the company's business and of its position, together with a description of the principal risks and uncertainties that it faces' (Article 1 (14)).

This provision applies to the reports of individual companies. A similar provision in the same directive applies to the reports of groups (Article 2 (10)). The requirements apply to all companies and groups regardless of size, but the directive allows EU member states when they implement it to exempt small companies and groups. Another directive sets maxima for what can be defined as small for this purpose.

The EU's Transparency Directive of 2004 (Directive 2004/109/EC) includes a requirement that 'The interim management report shall include ... a description of the principal risks and uncertainties for the remaining six months of the financial year' (Article 5 (4)). This directive applies only to public companies.

A1.3 Germany

Germany has risk reporting requirements additional to those imposed by the EU. In 1998 a legal requirement was introduced for German companies to disclose information on material risks in the management report section of the annual report. This requirement was amplified in 2001 by the German Accounting Standards Board's GAS 5, *Risk Reporting*. This specifies the content and format of risk disclosures. Risk is interpreted as 'the possibility of a future negative impact on the economic position'.⁶⁰ GAS 5-10 and GAS 5-20 deal respectively with risk reporting by banks and by insurers.

A1.4 UK

The UK also has risk reporting requirements additional to those imposed by the EU.

The UK Corporate Governance Code, which is issued by the Financial Reporting Council (FRC) and applies to listed companies, states:

C.2 'The board is responsible for determining the nature and extent of the significant risks it is willing to take in achieving its strategic objectives. The board should maintain sound risk management and internal control systems.'

C.2.1 'The board should, at least annually, conduct a review of the effectiveness of the company's risk management and internal control systems and should report to shareholders that they have done so.'

⁵⁹SEC, *SEC Interpretation: Management's Discussion and Analysis of Financial Condition and Results of Operations; Certain Investment Company Disclosures*.

⁶⁰Michael Dobler, 'National and international developments in risk reporting: may the German Accounting Standard 5 lead the way internationally?'

These requirements are supported by guidance from the FRC, *Internal Control: Revised Guidance for Directors on the Combined Code* ('the Turnbull Guidance'). *The Combined Code* has now been superseded by *The UK Corporate Governance Code*, and the guidance is therefore slightly out of date. However, it states:

'33 The annual report and accounts should include such meaningful, high-level information as the board considers necessary to assist shareholders' understanding of the main features of the company's risk management processes and system of internal control, and should not give a misleading impression.

'34 In its narrative statement of how the company has applied Code Principle C.2, the board should, as a minimum, disclose that there is an ongoing process for identifying, evaluating and managing the significant risks faced by the company, that it has been in place for the year under review and up to the date of approval of the annual report and accounts, that it is regularly reviewed by the board and accords with the guidance in this document.

'35 The disclosures relating to the application of Principle C.2 should include an acknowledgement by the board that it is responsible for the company's system of internal control and for reviewing its effectiveness. It should also explain that such a system is designed to manage rather than eliminate the risk of failure to achieve business objectives, and can only provide reasonable and not absolute assurance against material misstatement or loss.

'36 In relation to Code Provision C.2.1, the board should summarise the process it (where applicable, through its committees) has applied in reviewing the effectiveness of the system of internal control and confirm that necessary actions have been or are being taken to remedy any significant failings or weaknesses identified from that review. It should also disclose the process it has applied to deal with material internal control aspects of any significant problems disclosed in the annual report and accounts.'

The Financial Services Authority's Disclosure and Transparency Rules for listed companies require the directors' report to include a corporate governance statement. This statement 'must contain a description of the main features of the [company's] internal control and risk management systems in relation to the financial reporting process' (DTR 7.2.5). *The UK Corporate Governance Code* comments that 'While this requirement differs from the requirement in the UK Corporate Governance Code, it is envisaged that both could be met by a single internal control statement.'

A1.5 Basel II Accord

The 2004 Basel II Accord establishes minimum standards for the international regulation of banks. It has three pillars. Pillar 1 sets minimum capital requirements, which are designed to reflect risks. Pillar 2 – 'supervisory review' – concerns the regulatory processes for dealing with the minimum capital requirements. Pillar 3 is 'market discipline'. This sets disclosure requirements for banks, with a focus on risks, to allow the market to exert its own discipline on these institutions. These requirements had not come into effect before the financial crisis. Most European banks, for example, did not have to comply with them until 2008.

Basel II disclosures do not necessarily form part of the financial statements and some banks publish them as a separate statement (which may overlap to some extent with financial reporting disclosures). HSBC Holdings, for example, publishes a separate report, *Capital and Risk Management Pillar 3 Disclosures*, which for 2010 runs to 66 pages.

A1.6 IFRS

There are some requirements in IFRS that require risk disclosures without necessarily mentioning the word 'risk'. In some cases they refer to 'uncertainties' rather than 'risks'. For example, IAS 37, *Provisions, Contingent Liabilities and Contingent Assets*, requires that:

- for each class of provision 'an indication of the uncertainties about the amount or timing' of expected outflows should be disclosed (paragraph 85); and
- for each class of contingent liabilities, unless the possibility of any outflow is remote, 'where practicable ... an indication of the uncertainties relating to the amount or timing of any outflow' should be disclosed (paragraph 86).

For some reason, there are no comparable requirements for uncertainties about contingent assets. It seems reasonable to regard any disclosures on the subject of contingencies – whether they are classified as contingent assets or contingent liabilities – as risk disclosures.

IAS 1, *Presentation of Financial Statements*, requires firms to disclose information on the assumptions it makes about the future, and other major sources of estimation uncertainty.

In relation to going concern uncertainties, it requires that:

‘When preparing financial statements, management shall make an assessment of an entity’s ability to continue as a going concern...

‘When management is aware, in making its assessment, of material uncertainties related to events or conditions that may cast significant doubt upon the entity’s ability to continue as a going concern, the entity shall disclose those uncertainties. When an entity does not prepare financial statements on a going concern basis, it shall disclose that fact, together with the basis on which it prepared the financial statements and the reason why the entity is not regarded as a going concern.

‘In assessing whether the going concern assumption is appropriate, management takes into account all available information about the future, which is at least, but is not limited to, twelve months from the end of the reporting period.’

IFRS 7, *Financial Instruments: Disclosures*, has extensive risk disclosure requirements. These are reproduced in Panel A1.1 below:

Panel A1.1: IFRS 7 risk disclosures

Nature and extent of risks arising from financial instruments

31 An entity shall disclose information that enables users of its financial statements to evaluate the nature and extent of risks arising from financial instruments to which the entity is exposed at the end of the reporting period.

32 The disclosures required by paragraphs 33–42 focus on the risks that arise from financial instruments and how they have been managed. These risks typically include, but are not limited to, credit risk, liquidity risk and market risk.

Qualitative disclosures

33 For each type of risk arising from financial instruments, an entity shall disclose:

- (a) the exposures to risk and how they arise;
- (b) its objectives, policies and processes for managing the risk and the methods used to measure the risk; and
- (c) any changes in (a) or (b) from the previous period.

Quantitative disclosures

34 For each type of risk arising from financial instruments, an entity shall disclose:

- (a) summary quantitative data about its exposure to that risk at the end of the reporting period. This disclosure shall be based on the information provided internally to key management personnel of the entity (as defined in IAS 24 *Related Party Disclosures*), for example the entity’s board of directors or chief executive officer.
- (b) the disclosures required by paragraphs 36–42, to the extent not provided in (a), unless the risk is not material (see paragraphs 29–31 of IAS 1 for a discussion of materiality).
- (c) concentrations of risk if not apparent from (a) and (b).

35 If the quantitative data disclosed as at the end of the reporting period are unrepresentative of an entity’s exposure to risk during the period, an entity shall provide further information that is representative.

Panel A1.1: IFRS 7 risk disclosures (continued)

Credit risk

36 An entity shall disclose by class of financial instrument:

- (a) the amount that best represents its maximum exposure to credit risk at the end of the reporting period without taking account of any collateral held or other credit enhancements (eg netting agreements that do not qualify for offset in accordance with IAS 32);
- (b) in respect of the amount disclosed in (a), a description of collateral held as security and other credit enhancements;
- (c) information about the credit quality of financial assets that are neither past due nor impaired; and
- (d) the carrying amount of financial assets that would otherwise be past due or impaired whose terms have been renegotiated.

Financial assets that are either past due or impaired

37 An entity shall disclose by class of financial asset:

- (a) an analysis of the age of financial assets that are past due as at the end of the reporting period but not impaired;
- (b) an analysis of financial assets that are individually determined to be impaired as at the end of the reporting period, including the factors the entity considered in determining that they are impaired; and
- (c) for the amounts disclosed in (a) and (b), a description of collateral held by the entity as security and other credit enhancements and, unless impracticable, an estimate of their fair value.

Collateral and other credit enhancements obtained

38 When an entity obtains financial or non-financial assets during the period by taking possession of collateral it holds as security or calling on other credit enhancements (eg guarantees), and such assets meet the recognition criteria in other IFRSs, an entity shall disclose:

- (a) the nature and carrying amount of the assets obtained; and
- (b) when the assets are not readily convertible into cash, its policies for disposing of such assets or for using them in its operations.

Liquidity risk

39 An entity shall disclose:

- (a) a maturity analysis for non-derivative financial liabilities (including issued financial guarantee contracts) that shows the remaining contractual maturities.
- (b) a maturity analysis for derivative financial liabilities. The maturity analysis shall include the remaining contractual maturities for those derivative financial liabilities for which contractual maturities are essential for an understanding of the timing of the cash flows (see paragraph B11B).
- (c) a description of how it manages the liquidity risk inherent in (a) and (b).

Market risk

Sensitivity analysis

40 Unless an entity complies with paragraph 41, it shall disclose:

- (a) a sensitivity analysis for each type of market risk to which the entity is exposed at the end of the reporting period, showing how profit or loss and equity would have been affected by changes in the relevant risk variable that were reasonably possible at that date;
- (b) the methods and assumptions used in preparing the sensitivity analysis; and
- (c) changes from the previous period in the methods and assumptions used, and the reasons for such changes.

Panel A1.1: IFRS 7 risk disclosures (continued)

41 If an entity prepares a sensitivity analysis, such as value-at-risk, that reflects interdependencies between risk variables (eg interest rates and exchange rates) and uses it to manage financial risks, it may use that sensitivity analysis in place of the analysis specified in paragraph 40. The entity shall also disclose:

- (a) an explanation of the method used in preparing such a sensitivity analysis, and of the main parameters and assumptions underlying the data provided; and
- (b) an explanation of the objective of the method used and of limitations that may result in the information not fully reflecting the fair value of the assets and liabilities involved.

Other market risk disclosures

42 When the sensitivity analyses disclosed in accordance with paragraph 40 or 41 are unrepresentative of a risk inherent in a financial instrument (for example because the year-end exposure does not reflect the exposure during the year), the entity shall disclose that fact and the reason it believes the sensitivity analyses are unrepresentative.

IFRS 7 also has extensive disclosure requirements for hedges (paragraphs 22-24), which should provide useful information for assessing how far certain risks have or have not been mitigated.

In one respect, IFRS requirements for reporting risk-relevant information have diminished in recent years. IAS 14, *Segment Reporting*, used to define both business segments and geographical segments in terms of their risks and returns. In 2006, IAS 14 was superseded by IFRS 8, *Operating Segments*, which no longer defines reporting segments in terms of risk and returns. However, segmental information on the new basis remains relevant to the assessment of risk.

APPENDIX 2: CALLS FOR IMPROVED RISK REPORTING

As with requirements for risk disclosures, calls for improved risk reporting have become frequent in recent decades. What follows is a selection of some of the more significant ones from the past 20 years.

A2.1 *Operating and Financial Review*

Operating and Financial Review is a non-mandatory statement of best practice first issued by the UK's Accounting Standards Board (ASB) in 1993; it has subsequently been rewritten extensively. The 1993 statement recommends that UK listed companies should include in their annual reports an operating and financial review (OFR) 'to discuss and analyse the business's performance and the factors underlying its results and financial position'. The OFR could be seen as primarily backward-looking, in the sense that it is a discussion of last year's reported performance. But as with the MD&A in the US, its central purpose is to allow users of the accounts to judge how far they can use last year's results as a basis for predicting future performance. So it could equally be seen as primarily forward-looking.

It states that one of the 'essential features' of an OFR should be a discussion of 'known events, trends and uncertainties that are expected to have an impact on the business in the future'. This point is enlarged on in the statement's detailed guidance:

'The OFR should ... discuss the main factors and influences that may have a major effect on future results, whether or not they were significant in the period under review. This would include a discussion identifying the principal risks and uncertainties in the main lines of business, together with a commentary on the approach to managing these risks and, in qualitative terms, the nature of the potential impact on results.'

The statement gives examples of matters that may be relevant:

- 'scarcity of raw materials;
- skill shortages and expertise of uncertain supply;
- patents, licences or franchises;
- dependence on major suppliers or customers;
- product liability;
- health and safety;
- environmental protection costs and potential environmental liabilities;
- self insurance;
- exchange rate fluctuations;
- rates of inflation differing between costs and revenues, or between different markets.'

The ASB issued a revised guidance statement, *Operating and Financial Review*, in 2003, but the changes as regards the disclosure of risks and uncertainties were not significant.

A much-expanded Reporting Statement, *Operating and Financial Review*, was issued by the ASB in 2006. It recommends that 'The OFR should include a description of the principal risks and uncertainties facing the entity, together with a commentary on the directors' approach to them.' The statement includes 20 pages of guidance, including examples, on how to comply with this recommendation. The statement was originally prepared to provide requirements implementing the EU's 'business review' requirements, but, in a change of plan by the UK government, subsequently appeared in a non-mandatory form. However, it continues to reflect the EU requirements.

A2.2 Improving Business Reporting – A Customer Focus

Improving Business Reporting – A Customer Focus (1994), known as ‘the Jenkins Report’, notes that in spite of MD&A requirements ‘users believe disclosures about opportunities and risks should be improved’. It accordingly calls for business reporting to ‘Provide more information with a forwardlooking perspective, including management’s plans, opportunities, risks, and measurement uncertainties.’ It also calls for more segmental information to be disclosed. ‘The goal of segment reporting,’ it says, ‘is to provide additional insight into the opportunities and risks a company faces’ and ‘industry [rather than geographic] segment information most frequently provides the greatest insight into the opportunities and risks a company faces’. But it also proposes that geographic segment information should be required ‘when it provides insights into the opportunities and risks a company faces’. The report recommends that firms should provide a ‘Comparison of actual business performance to previously disclosed opportunities, risks, and management’s plans’.

The report also proposes ‘Improved disclosures about the identity, opportunities and risks of offbalancesheet financing arrangements’.

A further recommendation in the report is that companies should ‘Improve disclosures about the uncertainty of measurements of certain assets and liabilities.’ While it might be thought that measurement uncertainty and business risk are distinct issues, the report explains why disclosures on one are likely to cast light on the other. Essentially, this is because accounting measurements make assumptions about future events:

‘Information about uncertainties in the measurement of assets and liabilities is directly relevant to assessing opportunities and risks related to those specific assets and liabilities... Information about measurement uncertainties also can be helpful in judging opportunities and risks affecting the business. For example, increasing uncertainty in measuring bad debts related to trade receivables may indicate problems with a company’s customer base, which, in turn, may indicate increased risk of sustaining an upward trend in revenues, margin, and earnings.’

A2.3 Senior Supervisors Group

In April 2008 the Senior Supervisors Group (SSG) issued *Leading-Practice Disclosures for Selected Exposures*. This report, as its title suggests, identifies what are regarded as best practice disclosures for certain exposures. Its context is reporting by banks rather than risk reporting by firms generally. While the disclosures are not labelled ‘risk reporting’, that is in substance what they are. The SSG’s summary of the recommended disclosures is given at Panel A2.1.

Panel A2.1: SSG – leading-practice disclosures

Special Purpose Entities (SPEs)—General

- Size of SPE versus firm’s total exposure
- Activities of SPE
- Reason for consolidation (if applicable)
- Nature of exposure (sponsor, liquidity and/or credit enhancement provider)
- Collateral type
- Geographic distribution of collateral
- Average maturity of collateral
- Credit ratings of underlying collateral

Collateralized Debt Obligations

- Size of CDOs versus firm’s total exposure
- Breakdown of CDOs—type, tranche, rating, etc.
- Breakdown of collateral by type
- Breakdown of subprime mortgage exposure by vintage
- Hedges, including exposures to monolines⁶¹, other counterparties
- Creditworthiness of hedge counterparties
- Credit valuation adjustments for specific counterparties
- Sensitivity of valuation to changes in key assumptions and inputs

⁶¹ Monoline insurers guarantee repayments on bonds.

Panel A2.1: SSG – leading-practice disclosures (continued)

Other Subprime and Alt-A Exposures⁶²

Whole loans, RMBS⁶³, derivatives, other
Detail on credit quality (such as credit rating, loan-to-value ratios, performance measures)
Breakdown of subprime mortgage exposure by vintage
Sensitivity of valuation to changes in key assumptions and inputs

Commercial Mortgage-Backed Securities

Breakdown of collateral by industry
Breakdown of collateral by geography
Change in exposure from the prior period, including sales and write-downs

Leveraged Finance

Funded exposure and unfunded commitments
Change in exposure from prior period(s), including sales and write-downs
Distribution of exposure by industry
Distribution of exposure by geography

A2.4 IASB's management commentary framework

The IASB Practice Statement *Management Commentary: A Framework for Presentation* includes guidance on risk disclosures. The principal points are:

'31 Management should disclose an entity's principal risk exposures and changes in those risks, together with its plans and strategies for bearing or mitigating those risks, as well as disclosure of the effectiveness of its risk management strategies. This disclosure helps users to evaluate the entity's risks as well as its expected outcomes. Management should distinguish the principal risks and uncertainties facing the entity, rather than listing all possible risks and uncertainties.

'32 Management should disclose its principal strategic, commercial, operational and financial risks, which are those that may significantly affect the entity's strategies and progress of the entity's value. The description of the principal risks facing the entity should cover both exposures to negative consequences and potential opportunities. Management commentary provides useful information when it discusses the principal risks and uncertainties necessary to understand management's objectives and strategies for the entity. The principal risks and uncertainties can constitute either a significant external or internal risk to the entity.'

But paragraphs 33 (on relationships) and 36 (on prospects) are also relevant:

'33 Management should identify the significant relationships that the entity has with stakeholders, how those relationships are likely to affect the performance and value of the entity, and how those relationships are managed. This type of disclosure helps users of the financial reports to understand how an entity's relationships influence the nature of its business and whether an entity's relationships expose the business to substantial risk.'

'36 Management should provide an analysis of the prospects of the entity, which may include targets for financial and non-financial measures. This information can help users of the financial reports to understand how management intends to implement its strategies for the entity over the long term. When targets are quantified, management should explain the risks and assumptions necessary for users to assess the likelihood of achieving those targets.'

⁶²Alt-A loans fail to meet traditional underwriting guidelines.

⁶³Residential mortgage-backed securities.

A2.5 International Corporate Governance Network guidelines

In December 2010 the International Corporate Governance Network issued *ICGN Corporate Risk Oversight Guidelines*. The object of the guidelines is 'to help investors assess how well a ... company's board ... is effectively overseeing risk management'. It recommends a number of disclosures by companies and its key principle in this respect is that 'The board should concisely disclose information sufficient for investors to make judgments on the quality of the board's oversight of the risk management process.' The guidelines include a number of more specific disclosure proposals in support of this central objective.

A2.6 Financial Reporting Council

In the UK, the Financial Reporting Council (FRC) issued *Effective Company Stewardship: Next Steps* in September 2011. This states that:

'the FRC has concluded that in future narrative reports, companies should:

- focus primarily on strategic risks – rather than those risks that arise naturally and without action by the company (such as volcanic interruptions of air travel or earthquake damage); and
- disclose these risks and the major operational risks inherent in their business model and their strategy for implementing that business model, explaining how they will address those risks and any obstacles that may be encountered as a result of changes in the business environment.

... The FRC believes that any description of the risks a company faces should not be made difficult to assess by being scattered about the annual report. Consequently, if a company considers that the risks it faces are best understood if discussed in the context of the company's strategy, those risks should also be included in the company's description of principal risks in the Business Review ...'

APPENDIX 3: RESEARCH EVIDENCE ON RISK REPORTING

This appendix summarises at A3.1-A3.6 the major research of which we are aware on the quality and usefulness of risk reporting. At A3.7-A3.9 we refer briefly to research on the covariance of firms' profitability, which is relevant to the assessment of risk, and on the usefulness of financial reporting in general for assessing risks in the sense of variability of returns and for predicting default.

A3.1 US

Schrand, 1997

In 'The association between stock-price interest rate sensitivity and disclosures about derivative instruments' Catherine M. Schrand looks at information on derivatives in unpublished regulatory returns of 57 public savings and loan associations from 1984 to 1988. The author finds 'evidence that off-balance-sheet derivatives activities are positively associated with lower stock-price interest rate sensitivity' and that 'on-balance-sheet exposures to interest rate changes ... are also value-relevant' (ie, show a correlation with changes in share prices).

The significance of this is that the information in the regulatory filings is analogous to disclosures proposed by FASB and the SEC in the 1990s, in SFAS 119, *Disclosures about Fair Values of Derivative Financial Instruments and Fair Values of Financial Instruments*, and the proposals that preceded FRR 48, *Disclosure of Accounting Policies for Derivative Financial Instruments etc.* 'Therefore, the results suggest that the proposed disclosures will provide value-relevant information about interest rate risk for S&Ls.'

Rajgopal, 1999

In 'Early evidence on the informativeness of the SEC's market risk disclosures: the case of commodity price risk exposure of oil and gas producers' Shivaram Rajgopal looks at commodity price risk disclosures made by 52 US public oil and gas companies between 1993 and 1996. These disclosures were made in accordance with SFAS 69, *Disclosures about Oil and Gas Producing Activities*, and SFAS 119, *Disclosures about Fair Values of Derivative Financial Instruments and Fair Values of Financial Instruments*. He finds that the disclosures are associated with the stock market's sensitivity to changes in oil and gas prices.

The author cautions that:

'Such association, by itself, does not demonstrate the incremental utility of these risk measures to investors. For example, equivalent information may be available to the market from sources other than the footnote disclosures used in the paper.'

On the basis of his findings, the author suggests that disclosures under FRR 48 are also likely to be 'significantly associated with O&G firms' stock return sensitivities to oil and gas price movements', but his study data precede actual disclosures under FRR 48.

Elmy et al, 1998

In 'A review of initial filings under the SEC's new market risk disclosure rules' Frederick J. Elmy, Louis P. LeGuyader and Thomas J. Linsmeier examine the first filings under the SEC's Financial Reporting Release (FRR) 48. They conclude that 'Overall, ... the quality of the quantitative and qualitative disclosures by registrants that were the first to comply with FRR 48 was less than satisfactory.' But they attribute this to 'the newness and complexity of the requirements'.

Roulstone, 1999

In 'Effect of SEC Financial Reporting Release No. 48 on derivative and market risk disclosures' Darren T. Roulstone compares the derivative and market risk disclosures made by 25 SEC registrants before (1996) and after (1997) FRR 48. He finds that the 1997 filings 'contained more comprehensive and specific accounting policy and market risk disclosures'. But 'the increased disclosures were not presented in accordance with SEC guidelines'. While 'the quantitative disclosures provided information on the magnitude of market risk exposures ... this magnitude was often difficult to understand due to the lack of contextual information.' Also, 'too many disclosures leave readers unsure of how changes in specific rates and prices will affect the registrant.'

Roulstone finds that, in their qualitative disclosures, some firms 'used vague, apparently "boilerplate" language to state that derivatives were used to hedge some risks, without providing details such as amounts, positions and instruments. This made it difficult to understand the registrant's risk-management goals and its ability to achieve those goals.'

Overall, Roulstone endorses Elmy, LeGuyader and Linsmeier's verdict that the quality of the disclosures under FRR 48 is 'less than satisfactory'.

Linsmeier et al, 2002

'The effect of mandated market risk disclosures on trading volume sensitivity to interest rate, exchange rate, and commodity price movements' is a paper by Thomas J. Linsmeier, Daniel B. Thornton, Mohan Venkatachalam and Michael Welker. It is based on the theory that when investors generally are better informed about the likely effects of an event on a firm's prospects, they will tend to trade its shares less than when they are poorly informed. The rationale behind this is that trading is more likely where there is uncertainty and diversity of opinion. Improved information should reduce uncertainty and diversity of opinion, and therefore reduce the volume of trading.

The authors compare trading levels at the time of changes in interest rates, exchange rates and commodity prices before and after FRR 48. They find that trading volume sensitivity to changes in interest rates, exchange rates and commodity prices declines after FRR 48 information becomes available. This is consistent with investors' being better informed on the likely effects of such changes.

The authors caution that 'Because the theoretical and empirical determinants of trading volume are not completely understood, our interpretation of the results may be vulnerable to the omission of as-yet-unidentified determinants of trading volume.'

Jorion, 2002

In 'How informative are value-at-risk disclosures?' Philippe Jorion looks at the value-at-risk (VAR) disclosures of eight major US commercial banks between 1995 and 1999 to see whether they help predict the variability of trading revenues. He finds that they do: 'Banks with large VAR measures experience much greater fluctuations in unexpected trading revenues.'

Campbell et al, 2011

In an unpublished paper, *The Information Content of Mandatory Risk Factor Disclosures in Corporate Filings*, John L. Campbell, Hsinchun Chen, Dan S. Dhaliwal, Hsin-min Lu and Logan B. Steele examine the words used in US-quoted companies' 'risk factor' disclosures in their 10-K reports between 2005 and 2008. The sample is 10,174 firm-year observations. They quantify firms' risk disclosures by counting the number of words. So, 10,000 words is regarded as twice as much disclosure as 5,000 words. They also identify key words that relate to different categories of risk (ie, financial, idiosyncratic, litigation, systematic, and tax). They take stock-price volatility as a measure of the firms' actual risks but use other proxies for some of the specific categories of risk (eg, size for litigation risk and financial leverage for financial risk).

The authors find that:

- Firms that face greater risks have longer risk disclosures. The length of these disclosures by category reflects the different types of risks that firms face. 'In other words, managers provide informative risk disclosures.'
- There is a positive association between the length of risk disclosures and post-disclosure market assessments of firm risk. This may suggest that longer risk disclosures lead investors to revise upwards their assessments of firm risk.

- However, longer risk disclosures are also associated with a lower subsequent bid-ask spread for the share price, which the authors take as a measure of information asymmetry. That is, longer disclosure may decrease information asymmetry.
- There is a negative association between the length of risk disclosures and the subsequent stock price. That is, longer risk disclosures may lead to lower stock prices.

Kravet and Muslu, 2011

In an unpublished paper, *Informativeness of Risk Disclosures in Corporate Annual Reports*, Todd Kravet and Volkan Muslu examine textual risk disclosures in US-quoted companies' 10-K reports – not just their 'risk factor' disclosures – between 1994 and 2007. The sample is 28,110 firm-year observations. They quantify firms' risk disclosures by counting the number of sentences that contain key words (such as 'risk', 'uncertain', 'may', 'might', etc), and compare year-on-year changes in the level of disclosure.

The authors find that:

Increased risk disclosures 'are associated with increased stock return volatility and trading volume around and after the [10-K] filings. The increases in risk disclosures are also associated with more dispersed earnings forecasts and forecast revisions after the filings.' These findings 'suggest that risk disclosures reveal unknown unknowns and increase the market's perception of risk and uncertainties'.

A3.2 Canada

Lajili and Zéghal, 2005

In 'A content analysis of risk management disclosures in Canadian annual reports' Kaouthar Lajili and Daniel Zéghal review the risk management disclosures in the 1999 annual reports of the constituent companies of the TSE (Toronto Stock Exchange) 300. The review covers the firms' MD&A disclosures and the notes to the accounts. The authors conclude that 'While [the] disclosure rate appears relatively high, one might question the degree of relevance and potential analytical usefulness of the information disclosed.' Risk disclosure, they state, 'persists in being general, scattered, and sometimes ambiguous'.

Lajili and Zéghal note 'the clear emphasis by Canadian companies on the down-side aspect of risk and the absence of the up-side risk potential or opportunity-seeking strategies in risk management to create economic value'. They also comment that 'it is not clear ... whether derivatives are used to reduce or increase risk exposure'.

The authors suggest that the limited value of the disclosures 'is probably intentional since the competitive pressures and proprietary information costs associated with [more useful] disclosure could be substantial'.

A3.3 Germany

Kajüter, 2004

In an unpublished paper, *Risk Disclosures of Listed Firms in Germany: A Longitudinal Study*, Peter Kajüter reviews the risk disclosures by non-financial firms in the DAX 100 index as at 31 December 2001, looking at their annual reports for the years 1999 to 2003. Risk disclosures were required for German companies throughout this period, but the initial requirement was supplemented from 2001 by an accounting standard. The disclosures are required in the management report, however, not in the accounts.

Kajüter finds that:

- the volume of risk reports more than doubled in the period under review, as did the number of risks disclosed;
- the disclosures are almost entirely focused on downside risk;
- more 'external' risks, which are common to firms in the same industry, are reported than 'internal' risks;
- 'in most cases risks are described insufficiently', with little information on potential negative impacts; and

- 'it is usually impossible to distinguish the ... most important risks from those with less relevance'.

Overall Kajüter concludes that 'the findings of this study ... reveal that most risk reports are ... deficient as regards depth and precision' and describes his findings as 'rather disappointing'.

Dobler, 2005

In *How Informative Is Risk Reporting? A Review of Disclosure Models*, Michael Dobler briefly summarises earlier research on risk reporting in Germany, comprising Kajüter's paper referred to above and two German-language papers. He states: 'Empirical evidence from Germany implies that risk disclosures just slightly improved after explicitly obliging firms to report on their risks'.

Dobler comments that (as quoted at Section 3.9 above):

'In a voluntary disclosure regime, risk reports will be of poor value for the investors first of all because the forward-looking information disclosed is non-verifiable at an ex ante stage. This allows for discretion and manipulation, and cannot be overcome, but [may be] slightly limited by regulation. Mandatory risk disclosure does not necessarily change the results obtained under voluntary disclosure. In consequence, consistent with empirical findings the value of risk reporting for its users must not be overestimated.' He adds that his paper implies that 'the value of risk reporting is generally overestimated'.

Berger and Gleissner, 2006

In *Risk Reporting and Risks Reported* Thomas Berger and Werner Gleissner of the RMCE RiskCon consultancy review the risks reported in the 2000 to 2005 annual reports of 92 German public companies. They use a scoring system to rate the reports' information content with a potential maximum score of 15. They find that the information content improves over time, from an average score of 5.2 in 2000 to 8.3 in 2005, but comment that 'this is far from being good' and that risk reporting quality is still 'at a low level'. They note that companies seem more likely to disclose risks that are outside managers' control and that they 'do not provide much quantitative information'. For 2005 the authors find an average of 10.6 risks disclosed per company.

A3.4 Italy

Beretta and Bozzolan, 2004

In 'A framework for the analysis of firm risk communication' Sergio Beretta and Saverio Bozzolan analyse risk disclosures by 85 non-financial firms quoted on the Italian Stock Exchange at the end of 2001. The authors argue that 'the quantity of disclosure is not a satisfactory proxy for the quality of disclosure'. They therefore develop measures of risk disclosure quality that reflect different dimensions of the information disclosed. There were limited requirements for risk disclosures at the time, and so the disclosures were 'almost totally voluntary'.

The authors' preliminary conclusions from the sample are:

'First, analyzed firms voluntarily disclose some information concerning their future strategies but avoid communicating about their expected impact, not only in quantitative terms, but even in economic direction (expected profit or loss). Second, voluntary disclosure appears systematically biased towards management's self-justification of expected negative impacts: the rich disclosure of the expected limitations to business coming from new regulations is a clear symptom. Third, analyzed firms prefer to disclose management's thoughts and expectations on the future rather than to communicate the decisions and actions taken in the realm of risk management.' In short, 'analyzed firms are clearly oriented towards a policy of "formal disclosure but substantial nondisclosure" of the expected impact of risk factors on future performance'.

In their discussion, the authors point out that 'the types of risks a company faces are strictly related to both the unique critical-success factors and to the typical business models of an industry'. This has implications for what types of risk disclosure are likely to be useful.

A3.5 UK

Solomon et al, 2000

In 'A conceptual framework for corporate risk disclosure emerging from the agenda for corporate governance reform' Jill Solomon, Aris Solomon, Simon Norton and Nathan Joseph report the results of a survey of 97 UK institutional investors undertaken in 1999, some years after the UK's voluntary operating and financial review guidance was introduced. The survey found that on average respondents tended to agree with the proposition 'I believe that the current state of risk disclosure by our UK investee companies is inadequate'. However, the strength of agreement with the proposition was low. Responses were on a scale of 1 to 7, with 1 indicating strong disagreement, 4 indicating a neutral response, and 7 indicating strong agreement. The mean for responses to this question was 4.5.

There was stronger agreement with the proposition 'I believe that increased corporate risk disclosure would help institutional investors in their portfolio investment decisions'. The mean for responses to this proposition, agreement with which might seem to imply a view that current risk reporting is inadequate, was 5.0.

Linsley and Shives, 2006

In 'Risk reporting: a study of risk disclosures in the annual reports of UK companies' Philip Linsley and Philip Shives analyse the risk reporting content of 79 non-financial firms in the FTSE 100, using the reports with a year-end date nearest to 1 January 2001. Their definition of risk includes 'good risk' as well as 'bad risk' and they find, amongst other things, that firms make a significantly greater number of good risk disclosures. They also find that there is statistically significant disclosure of forward-looking risk information – a result they describe as 'unexpected' in the light of previous research.

Marshall and Weetman, 2008

In *Managing Interest Rate Risk and Foreign Exchange Risk: Disclosure of Objectives, Policies and Processes*, Andrew Marshall and Pauline Weetman investigate the risk management practices and disclosures of 30 UK companies, using questionnaires and the companies' annual reports for 2004 to 2006. They find that the companies surveyed disclose about half the information available to management on their objectives, policies and processes for managing interest rate risk and foreign exchange risk. They comment that:

'we do not know whether having companies report 50% of what they know provides too much, too little, or just the right amount of information that is needed for informed decision making'.

ASB, 2009

In *A Review of Narrative Reporting by UK Listed Companies in 2008/2009* the Accounting Standards Board (ASB) analyses the non-financial reporting of 50 UK listed companies in their 2008 or 2009 annual reports.⁶⁴ It finds that '66% of the sample were technically compliant [with the UK's Business Review requirements] because they listed some risks, but in our view needed to make improvements to meet the spirit of the requirements.' It finds that 'One company had 33 risks and eight companies [ie, 16%] had 20 or more.' As the requirement is to list principal risks, the ASB considers such lists excessive. The ASB notes the tendency to report 'Generic risks that could easily be cut and pasted into any report – for example, "influenza outbreak" or "terrorism"' and to provide 'Too little detail to understand the risk'.

FRC, 2011

In *Boards and Risk: A Summary of Discussions with Companies, Investors and Advisers*, the Financial Reporting Council (FRC) summarises discussions with senior people from over 40 major listed companies and a selection of investors and advisers. The FRC reports that:

'The majority of investors who participated in the meetings felt there was scope for considerable improvement in reporting on risk and internal control. Most participants from companies acknowledged shortcomings in reporting, but many of them felt there were obstacles to more meaningful disclosure.

⁶⁴Key findings from this report also appear in the Accounting Standards Board's *Rising to the Challenge*.

'Some institutional investors said that they placed more importance on the assurance they received from discussions with boards and management than on the words in the annual report. This was particularly the case when it came to assessing the quality of risk management and internal control, for which their main source of assurance was the quality of the board... Participants from companies said that in their experience most investors rarely asked questions about risk or internal control...'

Abraham et al, 2011

Risk Reporting: Clarity, Relevance and Location is a forthcoming report by Santhosh Abraham, Claire Marston and Phil Darby, presented as a paper at the 2011 Financial Reporting and Business Communications Conference.⁶⁵ The report is based on interviews with 32 investment analysts in 2009-10 and analysis of the 2009 annual reports of 18 listed companies in the food and drink sector.

The authors find that on average the investment analysts regard both 'financial risk factors' and 'business risk factor statements' in annual reports as useful. However, there are wide differences of view within the sample group. Seven of the analysts think that 'annual-report risk disclosure is very general and therefore provides no additional relevant information.' But nine of them 'view the annual report as being of primary importance in understanding overall investment risk' (the annual report includes the financial statements). And four of them 'point out that a large list of risk factors is helpful'.

The survey of annual report risk disclosures finds that the sample companies disclose 12 risks on average. The authors comment that the 'risk information [is] general in nature', but that 'on rare occasions, a very company-specific risk is declared'.

A3.6 Banks

Linsley et al, 2006

In 'Risk disclosure: an exploratory study of UK and Canadian banks', Philip M. Linsley, Philip J. Shrivs and Mandy Crumpton examine the risk disclosures in the annual reports of nine Canadian and nine UK banks for the year end closest to 31 December 2001. They find that:

'Overall, general statements of risk management policy dominate the risk disclosures although these are not as useful to the reader as specific risk or risk management information. It is also the case that the other characteristics noted as being more useful in relation to risk information, namely quantitative and future risk information, are disclosed much less often than qualitative and past information.'

Woods et al, 2008a

In 'The value of risk reporting: a critical analysis of value-at-risk disclosures in the banking sector' Margaret Woods, Kevin Dowd and Christopher Humphrey review the value-at-risk (VaR) disclosures of six of the world's largest banks for 2001 and 2002. They also draw on evidence of VaR disclosures produced by the Basel Committee. They describe the rise of VaR as a basis for external reporting and analyse its problems and limitations. For example, VaR measurements with a 95% confidence level may be informative as to what is at stake 95% of the time, but give no indication of how much might be lost on the other 5% of occasions.

The authors conclude:

'In summary, our discussion suggests that very little can be gleaned from published VaR figures, especially when taken on their own... Major international banks seem willing to offer generic, non-sensitive VaR information to signal that their risk management practices are up to date, but they also seem increasingly reluctant to give away information that could be used to draw sensitive conclusions about their risk management and other practices. A cynic might suggest that we have the appearance of disclosure, combined with careful attempts to avoid disclosing anything of real significance.'

⁶⁵The summary here is taken from the slides used for the conference presentation.

On risk reporting more generally, they comment: 'The key to risk disclosure is to appear to be "on the ball" and give out the same vacuous information as competitors and ... vacuous information has the extra advantage of being difficult to disprove.'

Woods et al, 2008b

In 'Market risk reporting by the world's top banks: evidence on the diversity of reporting practice and the implications for international accounting harmonisation' the same three authors review market risk disclosures by 25 large international banks in their annual reports for 2000, 2003 and 2006. They use a scoring system to mark the banks' reporting against a list of 41 potential market risk disclosures. On average, they find 'a mildly increasing trend' of disclosures, but there are significant reductions in disclosure by some banks. The authors note that the four banks that show the greatest reduction all switched from local GAAP to IFRS during the survey period.

They also draw attention to:

'the case of Société Générale, which achieved a "perfect" score of 41 in 2006. This score is especially revealing in the light of the recent events at the bank, where the activities of a "rogue trader" generated direct losses of around €5 billion. This result ... emphasizes the dangers of assuming that high levels of disclosure go hand-in-hand with the existence of effective risk management systems.'

A3.7 The covariance of profitability

A firm's earnings are likely to vary during the different phases of the business cycle (and for other reasons) and the extent of their variability is one indicator of risk. Variability of earnings itself varies from industry to industry. Some industries are more variable than others, and the business cycle for a particular industry may not coincide with that for the economy as a whole. It is therefore of interest to know how far a particular business's earnings vary with changes across the economy as a whole, how far with other businesses in the same sector, and how far for idiosyncratic reasons.

Philip Brown and Ray Ball, in 'Some preliminary findings on the association between the earnings of a firm, its industry, and the economy' (1967), examine these questions for a sample of 316 US firms (451 firms for the purpose of 'the economy') between 1947 and 1965. They find that 'on average, approximately 35%-40% of the variability of a firm's annual earnings numbers can be associated with the variability of earnings numbers averaged over all firms' and that 'on average, a further 10%-15% can be associated with the industry average'. They point out, though, that industry classifications can be arbitrary and suggest that one possibility would be to define an industry in terms of covariability of earnings.

Studies of other economies or at other times would presumably yield different results; as individual firms, sectors and economies change, so would the relevant covariances.

A3.8 Accounting and the variability of returns

There was interesting research published in the late 1960s and the 1970s on financial reporting's informativeness on risk in the sense of variability of returns (in terms of movements in share prices). Indeed, if risk is defined as variability of returns, then arguably this is the key information about risk that users need to know.

Among the pioneering works are Ray Ball and Philip Brown, 'Portfolio theory and accounting' (1969); William Beaver, Paul Kettler and Myron Scholes, 'The association between market determined and accounting determined risk measures' (1970); and William Beaver and James Manegold, 'The association between market-determined and accounting-determined measures of systematic risk: some further evidence' (1975).

Stephen G. Ryan, 'A survey of research relating accounting numbers to systematic equity risk, with implications for risk disclosure policy and future research' (1997), reviews the literature extant at that time and makes recommendations for accounting practice.

Peter Pope, 'Bridging the gap between accounting and finance' (2010) notes that the early work referred to above is now 'apparently largely forgotten' and that 'The time is right for theoretical and empirical academic research to revisit the ability of accounting information to reveal risk.' As Pope notes, there is some more recent empirical work. This includes Stephen P. Baginski and James M. Wahlen, 'Residual income risk, intrinsic values, and share prices' (2003); Begoña Giner

and Carmelo Reverte, 'The risk-relevance of accounting data: evidence from the Spanish stock market' (2006); and Leslie D. Hodder, Patrick E. Hopkins and James M. Wahlen, 'Risk-relevance of fair-value income measures for commercial banks' (2006).

All this research – both in the 1960s/70s and more recently – indicates that financial reporting is informative on risk in the sense of variability of stock market returns.

A3.9 Accounting and the probability of default

There is also a significant research literature on the usefulness of accounting ratios in predicting default. In 'Have financial statements become less informative? Evidence from the ability of financial ratios to predict bankruptcy' William H. Beaver, Maureen F. McNichols and Jung-Wu Rhie (2005) note that 'It is well established that financial ratios do have predictive power up to at least five years prior to bankruptcy.' Examining US public companies from 1962 to 2002 they find 'a slight decline in the predictive ability of financial ratios' in forecasting bankruptcy. A broader and more recent survey of the subject is William H. Beaver, Maria Correia and Maureen F. McNichols, 'Financial statement analysis and the prediction of financial distress' (2010).

A well-established UK-based bankruptcy prediction model that uses accounting data is the Taffler z-score model. On this, see Vineet Agarwal and Richard J. Taffler, 'Twenty-five years of the Taffler z-score model: does it really have predictive ability?' (2007).

APPENDIX 4: RISK REPORTING AND THE FINANCIAL CRISIS

This appendix expands on the information on risk reporting and the financial crisis in Chapter 2. For the sake of completeness, some of the material given in that chapter is repeated here.

A4.1 The response to the crisis

We noted in Chapter 1 that demands for improved risk reporting have intensified since the financial crisis. Those who have made calls of this sort include the Financial Stability Forum (FSF), the European Commission, and, in the UK, the House of Commons Treasury Committee, Sir David Walker in his review of corporate governance in financial institutions and the Financial Reporting Council.⁶⁶ Such calls reflect a widely shared view that managers, investors and regulators all underestimated the risks that key financial services businesses were taking on. Better risk reporting, it is thought, should allow interested parties in future to understand risks better, help to prevent excessive risk-taking, and so make both future crises and individual business failures less likely.

The call for better risk reporting following the crisis reflects an understandable view that risk reporting before the crisis was inadequate. To some extent this may reflect a common perception, which we discussed in Chapters 2 and 3, that risk reporting in general is inadequate. But it must also reflect a view that, in financial institutions specifically, risk reporting failed to give adequate warnings that problems were imminent or even conceivable.

Some steps to improve quantitative disclosures by financial institutions have already been taken. Risk reporting requirements for financial instruments have been strengthened, internationally through the revised version of IFRS 7, *Financial Instruments: Disclosures*, issued in March 2009, and in the US through amendments to US GAAP. And banks' risk disclosures in many jurisdictions have also improved since the onset of the crisis through implementation and expansion of the Basel II Pillar 3 requirements, which specify disclosures to facilitate the exercise of market discipline on banks.

A4.2 Possible explanations

If risk reporting ahead of the crisis was indeed inadequate, there are very broadly three possible explanations for this. They are not mutually exclusive and it may be found that each of them helps to explain some part of the complex pattern of events in the many and diverse institutions around the world that were affected by the crisis. The three broad possibilities are:

- Risk reporting requirements were inadequate.
- Risk reporting requirements were adequate, but managers, although aware of the risks, did not report them.
- Managers were generally unaware of the risks or significantly underestimated them. In which case, to some extent, it would have been irrelevant what the risk reporting requirements were.

As we have indicated, the general view at present seems to be that there was a widespread underestimation of risk, which would point to the third possibility as a likely explanation of the inadequacy of risk reporting. But it also seems likely that requirements for quantitative, analytical risk disclosures were inadequate. These are matters that require further empirical investigation, looking at both risk reporting and risk assessment ahead of the crisis, and at how they changed during the crisis.

⁶⁶References are given in Chapter 1.

Panel A4.1: Crashes, booms and risk

In a letter to the *Financial Times* published on 10 December 2010, Professor Avinash D. Persaud wrote:

'[C]rashes are not random; they always follow booms. And booms are not caused by people doing things they know are risky, but people doing things they perceive as safe; so safe as to justify doubling up and betting the house.'

A4.3 Research findings

There seems to date, however, to have been little research on risk reporting and the financial crisis. The one major study of which we are aware is *UK Bank Risk Disclosures in the Period Through to the Onset of the Global Financial Crisis* by Philip Linsley of the University of York.⁶⁷ This looks at the risk disclosures of eight UK banks in their annual reports for the period 2002-2008. Five of the eight were subsequently rescued, directly or indirectly, by the British government. A sixth, though not in financial distress, thought it prudent at the peak of the crisis to sell itself to a larger bank.

Key findings of the study include:

'[A] risk narrative is identifiable for each of the sample banks, but ... it is hidden. Consequently, substantial effort is required to piece together the overall narrative. There is no evidence that there is deliberate intent on the part of the banks to make the risk narrative inaccessible...'⁶⁸

'In all cases prior to the crisis the narratives portray the banks as having a sound awareness of the risk environment and a propensity to adapt their risk management approaches as the risk environment changes. They display a confidence in their ability to manage the risks they are confronted with and there is no forewarning that a crisis may be imminent within these narratives.

'The analysis of the tone of the risk narratives indicates that there is an increasing optimism present in the risk narratives as the pre-crisis period progresses... The mood of optimism noted in respect of the pre-crisis risk disclosures dissipates post-crisis...

'[T]he risk- and risk management-related information that formed the basis of the risk narratives identified in the study is widely dispersed throughout the annual report. Therefore, the identification of a risk narrative for each bank is only possible if a reader is prepared to spend considerable time searching for relevant risk disclosures and then analysing key risk themes. Further, it would be difficult to identify the risk narrative if an annual report is read in isolation as the risk narratives only become discernible when a sequence of annual reports are examined covering a period of some years. The presentation of key risk factors that is present in many annual reports tends to be a rehearsal of generalised risks that face the overall banking sector and this does not aid in understanding the risk narrative of the individual bank.'

A4.4 Other investigations

There is a large and growing literature on the crisis. Although relatively little seems to have been done to investigate the quality of risk reporting, there has been significantly more work on the quality of risk assessment ahead of the crisis. This is not primarily academic research, but the findings of banking regulators and other authorities, which are at least to some extent based on their access to information that is not publicly available.

Two important reports from the Senior Supervisors Group (SSG) of international banking regulators are:

- *Observations on Risk Management Practices during the Recent Market Turbulence* (6 March 2008). As the date of the report indicates, it was prepared before the crisis had reached its peak. It is based on an analysis of 11 of the world's largest banking and securities firms, with contributions from five more firms at a roundtable held in February 2008.

⁶⁷A study supported by ICAEW's charitable trusts for research.

⁶⁸The idea of a risk narrative is an interesting one and fits with the proposition, discussed earlier (Section 4.4.1), that risk disclosures need to be brought together so that they give a self-sufficient and coherent view. The case for such an approach is perhaps particularly strong for banks.

- *Risk Management Lessons from the Global Banking Crisis* (21 October 2009). This is a more general review, looking back on the crisis.

In the first of these reports, the SSG concludes that:

'The predominant source of losses for firms in the survey through year-end was the firms' concentrated exposure to securitizations of US subprime mortgage-related credit. In particular, some firms made strategic decisions to retain large exposures to super-senior tranches of collateralized debt obligations that far exceeded the firms' understanding of the risks inherent in such instruments...

'Another risk management challenge concerned firms' understanding and control over their potential balance sheet growth and liquidity needs. For example, some firms failed to price properly the risk that exposures to certain off-balance-sheet vehicles might need to be funded on the balance sheet precisely when it became difficult or expensive to raise such funds externally.'

The SSG's second report, while consistent with its earlier one, goes more widely in identifying risk management failures:

'The events of 2008 clearly exposed the vulnerabilities of financial firms whose business models depended too heavily on uninterrupted access to secured financing markets, often at excessively high leverage levels. This dependence reflected an unrealistic assessment of liquidity risks of concentrated positions ...

'Our report highlights a number of areas of weakness that require further work by ... firms to address, including the following (in addition to the liquidity risk management issues described above):

- the failure of some boards of directors and senior managers to establish, measure and adhere to a level of risk acceptable to the firm; ...
- inadequate and often fragmented technological infrastructures that hindered effective risk identification and measurement; and
- institutional arrangements that conferred status and influence on risk takers at the expense of independent risk managers and control personnel.'

A report from the FSF (now the Financial Stability Board – FSB) in April 2008 identifies a number of major failures of risk assessment as contributing to the crisis.⁶⁹ The problems identified in the report include:

- Before the crisis, there was a 'global trend of low risk premia and low expectations of future volatility'.
- Banks 'misjudged the liquidity and concentration risks that a deterioration in general economic conditions would pose'.
- Banks 'misjudged the risks that were created by their explicit and implicit commitments to [off-balance sheet funding and investment vehicles], including the reputational risks arising from the sponsorship of the vehicles'.
- Banks 'misjudged the level of risks [on loans to households and businesses, including loans for buy-outs by private equity firms], particularly these instruments' common exposure to broad factors such as a weakening housing market or a fall in the market liquidity of high-yield corporate debt'.

Other investigations by governments and regulators around the world have arrived at similar findings. We discuss below what conclusions we might draw from this in relation to risk reporting.

A4.5 Discussion

A4.5.1 Philip Linsley's study

Does Philip Linsley's *UK Bank Risk Disclosures* report show that there was a failure of risk reporting ahead of the crisis? It seems clear that, before the crisis, the banks in the sample disclosed no

⁶⁹ *Report of the Financial Stability Forum on Enhancing Market and Institutional Resilience*. Although this report was issued before the crisis reached its peak, subsequent statements by the Forum/Board do not indicate that its analysis of the causes of the crisis has subsequently changed.

indication of the problems to come.⁷⁰ But whether this means that there was a failure in risk reporting is another matter. The study is based primarily on an examination of annual reports, though the firms' press releases were also covered. It is impossible on the basis of such purely external evidence to know how well firms' external disclosures accurately reflected their internal views on risk, though we have no reason to doubt the integrity of the disclosures examined. But this limitation does mean that studies of this sort cannot tell us whether the absence of any warning of potential problems ahead was because managers were aware of the risks but failed to report them or because they were just unaware of the risks. It would only be possible for researchers to investigate this question if they had access to banks' internal records and it is probably unrealistic to expect that, in the ordinary course of events, they ever would be given access in this way, especially on such a sensitive issue, unless they have the support of bank regulators.

While banking regulators and other authorities will often have positions to defend, their access to evidence means that their investigations may offer a better chance of understanding how well banks understood their risks ahead of the crisis. As we have noted, the consensus among relevant authorities is that banks did not understand their risks properly.

A4.5.2 Were risk reporting requirements adequate?

It seems likely that in important respects, risk reporting requirements ahead of the crisis were inadequate. This is a judgement made with the benefit of hindsight and is not intended to be a criticism of those responsible for setting the requirements.

In firms' financial reporting, there appears to have been significant understatement of risk, particularly in the US, because of the extensive use of off balance sheet vehicles.⁷¹ Indeed, the chairman of the IASB has argued that:

'The current credit crisis has to a large extent been caused by a lack of transparency in the financial markets. Huge risks were allowed to build up on and off balance sheet without being noticed.'⁷²

US GAAP requirements in this respect were looser than those of IFRS. The relevant US GAAP requirements have subsequently been tightened up, as have those of IFRS. The fact that a liability is off balance sheet does not necessarily mean that users are unaware of it. Indeed, there is research suggesting that the stock market views securitised assets and liabilities held off balance sheet as though they were on the firm's balance sheet. But users may not always know enough about off balance sheet items to arrive at such a view.⁷³

Before the crisis, insufficient analysis of financial reporting items was given to allow users of the accounts to make a proper assessment of risks. The *US Financial Crisis Inquiry Report (FCIR)* indicates that when in the spring of 2007 banks first disclosed the reliability of the measurements of their financial instruments reported at fair value, analysed by three levels of measurement input (and liquidity), the information came as a surprise to the market:

'The sum of more illiquid Level 2 and 3 assets at [financial companies] was "eye-popping in terms of the amount of leverage the banks and investment banks had," according to Jim Chanos, a New York hedge fund manager. Chanos said that the new disclosures also revealed for the first time that many firms retained large exposures from securitizations. "You clearly didn't get the magnitude, and the market didn't grasp the magnitude until the spring of '07, when the figures began to be published, and then it was as if someone rang a bell, because almost immediately upon the publication of these numbers, journalists began writing about it, and hedge funds began talking about it, and people began speaking about it in the marketplace."⁷⁴

⁷⁰Indicators of market dislocation were disclosed in accounts for the calendar year 2007. See, eg, the supplementary memorandum by John P. Connolly, Deloitte, in the report of the House of Lords Select Committee on Economic Affairs, *Auditors: Market Concentration and Their Role*, vol 2, at p232: comments on audits for the year ended 31 December 2007. By this point the crisis was already under way. But it became worse during 2008 and so reports on 2007 may well have provided useful indicators of further difficulties to come.

⁷¹S. P. Kothari, Karthik Ramanna and Douglas J. Skinner, 'Implications for GAAP from an analysis of positive research in accounting', argue that there was 'a failure of the balance sheet to achieve one of its fundamental economic objectives – to provide outsiders with a clear view of the entity's obligations'.

⁷²Hans Hoogervorst, 9 February 2011, speech at a conference organised by the European Commission, 'Financial reporting and auditing – a time for change?'

⁷³See Wayne R. Landsman, Kenneth V. Peasnell and Catherine Shakespeare, 'Are asset securitizations sales or loans?' The authors note the limitations of the information actually disclosed by firms undertaking securitisations.

⁷⁴National Commission on the Causes of the Financial and Economic Crisis in the United States, *The Financial Crisis Inquiry Report*, p234.

As the quotation indicates, at least some gaps in risk reporting were repaired in the US as the crisis was about to emerge. Similar requirements were subsequently imposed under IFRS after the crisis had struck. But it seems likely that additional analysis would have been useful in allowing users to make a proper assessment of risk.⁷⁵ We mention elsewhere (Appendix 2 and A4.5.4 below) specific proposals from the SSG designed to improve risk disclosures, which have subsequently been largely adopted.

A4.5.3 Failure to report known risks?

Did banks fail to meet reporting requirements for risks of which they were aware?

Judging from the information available to date, firms' financial reporting of risk seems generally to have been in accordance with most of the relevant requirements,⁷⁶ though it is possible that future inquiries, litigation and disciplinary proceedings will identify exceptions to this generalisation. It has been suggested, though, that US banks' disclosures may not have been fully compliant with two relevant provisions of US GAAP⁷⁷:

- SFAS 5, *Accounting for Contingencies*, requires firms to disclose as contingencies losses that are reasonably possible – that is, the chance of the loss is more than remote but less than likely. As the crisis emerged, one would have expected increasingly extensive disclosures by banks under this requirement, but they do not appear to have been made.
- SFAS 107, *Disclosures about Fair Value of Financial Instruments*, requires firms to disclose 'all significant concentrations of credit risk arising from all financial instruments'. Banks' disclosures under this requirement appear to have been poor.

For risk reporting outside the financial statements, it also seems to be likely, on the information available to date, that firms' disclosures generally complied with requirements. However, again there were exceptions. In the UK, in July 2010, the finance director of Northern Rock during the period from February 2007 to February 2008 was disciplined by the Financial Services Authority for reporting (outside the financial statements) misleading information on impaired loans. In the US, *FCIR* notes that in September 2004 the Chief Executive Officer of Countrywide Financial believed that the firm's lending policies could have 'catastrophic consequences'. He expressed similar concerns in August 2005.⁷⁸ These concerns were not reflected in Countrywide's public risk reporting. The US Senate report, *Wall Street and the Financial Crisis: Anatomy of a Financial Crisis* (WSFC) examines the collapse of Washington Mutual. This is another instance where public risk reporting may have been inadequate (see Panel A4.2).

Panel A4.2: Washington Mutual

WSFC notes that Washington Mutual, though it held itself out to be a prudent lender, adopted what its own managers called a 'High Risk Lending Strategy' in January 2005.⁷⁹ Shortly afterwards, the company's CEO commented in an internal email, 'I have never seen such a high risk housing market'.⁸⁰

WSFC does not refer to the company's risk disclosures, but the phrase 'high risk' does not appear in its 2005 annual report. However, the annual report does state:

'If unemployment were to rise and either a slowdown in housing price appreciation or outright declines in housing prices were to occur, borrowers might have difficulty repaying their loans. As a result, the Company could experience higher credit losses in its mortgage and home equity portfolios, which could adversely affect its earnings.'

⁷⁵This is also the conclusion of Mary E. Barth and Wayne R. Landsman, 'How did financial reporting contribute to the financial crisis?', which provides a useful summary of relevant research.

⁷⁶Lehman Brothers is one possible exception. See the examiner's report of Anton R. Valukas.

⁷⁷The comments here are based on remarks by Stephen Ryan in a panel session on 'Financial market regulation and opportunities for accounting research' at the American Accounting Association annual meeting in Denver in August 2011.

⁷⁸*FCIR*, pp xxii and 108.

⁷⁹WSFC, pp 48 and 58.

⁸⁰WSFC, pp 67-68.

Panel A4.2: Washington Mutual (continued)

It also states, 'Certain residential loans have features that may result in increased credit risk when compared to residential loans without those features.' It then discloses, if the reader adds up the numbers, that 45% of its loans are of this sort. The report further indicates that the risks associated with these loans are mitigated by, among other things, rising house prices and early repayment. The report does not spell this out, but early repayment would presumably result from either sale of the property or remortgaging.

While Washington Mutual's disclosures hardly amount to a full and frank avowal that it is pursuing a high risk lending strategy, and they do not share with readers the CEO's personal assessment of the housing market, a skilled advocate could perhaps make a case that its disclosures were not actively misleading.

Its risk management disclosures seem more clearly deficient. *WSFC* claims that Washington Mutual was 'lacking in effective risk management',⁸¹ and the evidence in the report appears to support the allegation. The company's public reporting conveys the opposite impression.

WSFC and *FCIR* do not mention other instances quite like these, so it is difficult to know whether they are isolated cases or examples of a widespread problem.

FCIR also makes the general statement that 'Lenders made loans that they knew borrowers could not afford and that could cause massive losses to investors in mortgage securities'.⁸² It would be reasonable to expect that, where the loans remained on the originator's balance sheet, such risks would have been reported. The fact that the lenders would expect to – and did – retain significant stakes in the loans could be seen as evidence that they thought the risks were in fact significantly lower than the *FCIR*, looking back on the crisis, judges them to have been.⁸³

There are separate but related questions as to whether the buyers of mortgage securities understood the risks (clearly, in some cases, they did not) and whether the originators of the securities disclosed the risks in the supporting issuance documentation (again, at least in some cases, they did not – see Panel A4.3). While these are not financial reporting questions, they have important implications for financial reporting, as the investors' understanding (or ignorance) of the risks involved will have affected their own financial reporting as well as their risk disclosures outside the accounts. It also needs to be borne in mind that:

- the risks involved in making loans to subprime borrowers may be compensated for by higher interest rates or higher collateral;
- investors may have placed reliance on rating agencies' assessments of the securities and on insurance against losses on them.

So for various reasons the assets may not have been regarded as particularly risky.

In the event, all the safeguards failed. But at the time most people thought such an outcome highly improbable, so even in cases that appear in retrospect to be obviously high risk, it is quite plausible that the banks' public reporting of risk accurately reflected their perceptions.

Panel A4.3: Inadequate disclosure to investors

In some cases, the securitisation process seems to have been dependent on investors' not knowing that the securities were risky, while their originators did. See *WSFC*, Chapters 3, 5 and 6. '[Washington Mutual] securitized loans that it had identified as likely to go delinquent, without disclosing its analysis to investors to whom it sold the securities, and also securitized loans tainted by fraudulent information, without notifying purchasers of the fraud that was discovered and known to the bank': *WSFC*, p116.

In 2008 Countrywide Financial was acquired by Bank of America. In 2011 Bank of America provided \$14bn in its accounts to meet claims by investors alleging that the documentation for mortgage-backed securities issued by Countrywide Financial 'contained materially false and misleading statements and omitted material information'.

⁸¹*WSFC*, p75.

⁸²At pxxii.

⁸³The securities were sliced into different tranches with different degrees of risk. The originator would usually retain the riskiest slice to give some reassurance to investors in the other tranches. Lenders assumed that borrowers could afford the loans because they would be able to repay them either from the properties' future sale proceeds (which required that the properties' values not fall) or by remortgaging ('pass the parcel').

We have not seen in the investigations of other authorities any examples in addition to those of Countrywide and Washington Mutual of chief executives or those in similar positions expressing concerns at significant known risks, which are not then reflected in the firm's public reporting. Also, a momentary expression of view by a CEO is not necessarily the same thing as an institution's considered view.

So far, therefore, there is only limited evidence of managers possibly misreporting risks, as they saw them, outside the financial statements, although those that have been identified are important in their own right because of the size of the institutions involved and their subsequent failures. There is also evidence suggesting that, in terms of protecting their own interests, managers behaved as though they were genuinely unaware of the risks of impending disaster. This comes from research finding that:

[US] Bank CEOs did not reduce their holdings of shares in anticipation of the crisis or during the crisis; there is also no evidence that they hedged their equity exposure. Consequently, they suffered extremely large wealth losses as a result of the crisis.⁸⁴

As there have now been a number of investigations, it seems reasonable to suppose that in the period leading up to the crisis most banks accurately reported the qualitative risks that they faced as they saw them. But it would be useful to investigate this matter further if it is possible – perhaps with the support of regulators – to gain access to the relevant internal records.

Panel A4.4: Publicising internal risk dialogues

In *UK Bank Risk Disclosures* Philip Linsley suggests that banks should disclose their internal 'risk dialogues'. The information in *FCIR* and *WSFC* on dissenting views on risk within both Countrywide Financial and Washington Mutual indicates that such dialogues, if made public, would probably be of great interest. The SSG's October 2009 report (see above) refers to risk managers' lack of status and influence, and this hints at differences of view within banks ahead of the crisis.

Such differences of view must be a constant feature of life in banks. It is a risk officer's job to prevent unduly risky courses of action, to ensure that risks are mitigated where this is possible, and to warn colleagues of potential downsides to their current positions and proposed actions. This creates an almost inevitable tension within the institution between those who have differing views on which risks it is appropriate to take. There is no simple formula that can determine how these tensions should be resolved in any particular case. The skill of management collectively is to arrive at the right balance between taking risks and avoiding (or controlling) them.

Firms work hard to present a consistent message to the world. Publicising internal dialogues would be a major departure from current practice, and it would be necessary to consider what the consequences of such publicity might be. For example, in practice would it encourage or discourage the expression of dissenting views within firms?

A4.5.4 Underestimation of risks?

Risk reporting before the crisis was almost certainly misleading in the sense that it reflected the banks' own assessments of risks and these assessments were themselves significantly mistaken. We do not make this point as a criticism of the banks concerned. On the contrary, as the reports by banking regulators and other authorities point out, there was a common underestimation of risk among financial services firms, investors, rating agencies, regulators and governments. Banks shared in the common delusion and their risk reporting reflected it.

As *FCIR* comments, 'It appeared to financial institutions, investors, and regulators alike that risk had been conquered'.⁸⁵

This applied to subprime exposures as much as to any other risk. In September 2007, Chuck Prince, Chief Executive Officer of Citigroup, learnt that the bank had \$40 billion of assets based on subprime mortgages. He told the Financial Crisis Inquiry Commission that it was of no significance that he had not known of this any earlier:

'It wouldn't have been useful for someone to come to me and say, "Now, we have got \$2 trillion on the balance sheet of assets. I want to point out to you there is a one in a billion chance that this \$40 billion could go south."

⁸⁴Rüdiger Fahlenbrach and René Stulz, *Bank CEO Incentives and the Credit Crisis*.

⁸⁵At pxxiv.

That would not have been useful information. There is nothing I can do with that, because there is that level of chance on everything.’⁸⁶

Two points of interest in these remarks are that subprime assets were regarded as no riskier than anything else and that the level of inescapable risk for any asset was estimated to be no more than one in a billion.

But there is a good deal of information that financial services firms already disclose that is relevant to risk, yet does not depend on management’s perception of risk. Many of the disclosures required by IFRS 7, *Financial Instruments: Disclosures*, which are reproduced in Appendix 1, provide examples of this sort of information. Some of the disclosures required by the standard are what might be regarded as conventional descriptive risk reporting (eg, the entity’s objectives, policies and processes for managing risks). But some of them are relatively objective, quantitative information⁸⁷ that allows users to form their own views on the entity’s risks. Disclosures of this sort include analyses of assets that are overdue (‘past due’), maturity analyses, and sensitivity analyses.

Another example is the recommendations for banks in the SSG’s 2008 report, *Leading-Practice Disclosures for Selected Exposures*, which are reproduced in Appendix 2. Almost all the recommended disclosures in this report are hard, quantified information. There is very little that depends on subjective views of risk. The SSG’s recommendations were endorsed by the FSF and have now mostly been incorporated into the Basel II, Pillar 3 disclosure requirements.⁸⁸

The need for specific disclosures of the type required by IFRS 7 and recommended by the SSG is likely to change from time to time. The requirements of IFRS 7 were extended in the light of the financial crisis, and the SSG report is an attempt to learn from how some banks responded to it by improving their disclosures on certain items. But the items for which the recent crisis revealed a need for more information may become less important, while other items – unimportant in this crisis – may emerge as important in the future. It is therefore desirable that requirements for specific disclosures should be kept under constant review and that reporting institutions should communicate information that they recognise to be important, even when there is no specific requirement to do so. This implies a principles-based approach as well as specific requirements. The FSF made important recommendations in this respect in its 2008 report referred to earlier:

‘[I]nvestors, financial industry representatives and auditors should work together to provide risk disclosures that are most relevant to the market conditions at the time of the disclosure. To this end:

- Investors, industry representatives and auditors should develop principles that should form the basis for useful risk disclosures.
- Investors, industry representatives and auditors should meet together, on a semi-annual basis, to discuss the key risks faced by the financial sector and to identify the types of risk disclosures that would be most relevant and useful to investors at that time.’

In a 2011 report the FSB (successor to the FSF) notes that these proposals have not been acted on and it accordingly makes a fresh proposal:

‘The FSB should facilitate work by investors, industry representatives and auditors to take the 2008 FSF recommendations forward by encouraging them to develop principles for useful risk disclosures as market conditions and risk profiles change.’⁸⁹

The FSB adds that if this new approach does not succeed, ‘a more prescriptive approach by securities market regulators, prudential authorities or accounting standard-setters may prove necessary’. The 2011 report also makes the point that ‘Transparency is often better served by clearer explanations than by more detailed numerical analysis.’

⁸⁶ *FCIR*, p260. On 15 October 2007 Citigroup reported \$1.8bn in subprime write-downs for the quarter to 30 September. On 4 November it reported a further fall in value of subprime assets of between \$8bn and \$11bn, and the retirement with immediate effect of Mr Prince.

⁸⁷ They may not be completely objective even when quantified. The analysis of fair value measurements into Levels 1, 2 and 3, for example, contains a subjective element. IFRS 7 requires that measurements are classified as Level 1, 2 or 3 depending on ‘the lowest level of input that is significant to the fair value measurement in its entirety’. The judgement of significance is subjective. And many Level 3 measurements are highly subjective.

⁸⁸ As noted in the FSB’s *Thematic Review on Risk Disclosure Practices* at p20, n32.

⁸⁹ *Thematic Review on Risk Disclosure Practices*.

As a consequence of the financial crisis, banking supervisors have required selected banks to conduct stress tests to check the adequacy of their capital in the event of various specified negative developments. Some of the information from these stress tests has been published.⁹⁰ This provides useful information on risk, though the EU's tests have been criticised for not being tough enough in their assumptions (eg, on sovereign debt risk) and the market may therefore not take the results of the tests at face value. None the less, although their usefulness will depend on the assumptions that underlie the tests, the information provided by such exercises seems to be precisely the sort of thing that those who want better risk reporting by banks (and insurers) are after. The discussion in Panel A4.5 of Lehman Brothers' risk reporting also suggests the sort of stress-test information that might well provide useful risk disclosures. How would a bank's balance sheet look, for example, in the event of a 5% fall in property prices?

It would therefore be useful to explore stress testing information as an additional form of risk reporting and to investigate precisely what data would be relevant and how much could be disclosed. However, the costs of preparing the information would also have to be taken into account in deciding how best to proceed. This idea has already been implemented to some extent in the US, where the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 mandates stress tests for banks and requires summary results of the tests to be published; the market would no doubt find detailed results more useful.

Panel A4.5: Lehman Brothers' risk reporting

Robert S. Kaplan's paper 'Accounting scholarship that advances knowledge and practice' is based on his plenary address to the 2010 annual meeting of the American Accounting Association. In the paper he briefly discusses Lehman Brothers' risk disclosures made in 2008. These included the statement that:

'In the event of changes in market conditions, such as interest or foreign exchange rates, equity, fixed income, commodity or *real estate valuations*, liquidity, availability of credit or volatility, our business could be adversely affected in many ways ... Further declines in real estate values in the US and continuing credit and liquidity concerns could further reduce our level of mortgage loan originations and increase our mortgage inventory while adversely affecting its value' [emphasis added by Kaplan].

Kaplan comments:

'Does this sound like the risk exposure of a huge financial institution that would file for bankruptcy less than two months after this 10-K submission? Yet this was the "risk disclosure" in the 2008 second quarter filing of Lehman Brothers, a financial institution born in the South in the 1850s. Lehman survived the US Civil War, World War I, the Great Depression of the 1930s, and World War II. It built its capital during the great post-World War II global expansion, and somehow failed after a 5 percent decline in US real estate prices. After 40+ years of academic research on capital markets and financial economics, is Lehman's 10-K disclosure the best we can offer to quantify and disclose a company's risk exposure? I hope not.'

In his address, Kaplan added the pertinent comment:

'If Lehman Brothers had said that "We are holding this large asset of mortgage-based securities and our ability to have our assets higher than our liabilities is contingent on housing prices, which in the last six years have increased from three times median income to four times median income in the United States, not starting a mean reversion back to three times median income. Should that occur, our assets will soon be worth less than our liabilities" – that would be an interesting risk disclosure.'

⁹⁰See Board of Governors of the Federal Reserve System, *The Supervisory Capital Assessment Program: Overview of Results*; Committee of European Banking Supervisors [now the European Banking Authority], *Aggregate Outcome of the 2010 EU Wide Stress Test Exercise Coordinated by CEBS in Cooperation with the ECB*; and European Banking Authority, *European Banking Authority 2011 EU-Wide Stress Test Aggregate Report*.

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BIBLIOGRAPHY

- Abraham, Santhosh, Marston, Claire, and Darby, Phil, *Risk Reporting: Clarity, Relevance and Location*, Edinburgh: Institute of Chartered Accountants of Scotland, 2011 (forthcoming).
- Accounting Standards Board, *Operating and Financial Review*, Milton Keynes: Accountancy Books, 1993.
- Accounting Standards Board, *Operating and Financial Review* (revised), Kingston upon Thames: ASB Publications, 2003.
- Accounting Standards Board, *Operating and Financial Review* (Reporting Statement), Kingston upon Thames: ASB Publications, 2006.
- Accounting Standards Board, *A Review of Narrative Reporting by UK Listed Companies in 2008/2009*, London: Financial Reporting Council, 2009.
- Accounting Standards Board, *Rising to the Challenge: A Review of Narrative Reporting by UK Listed Companies*, London: Financial Reporting Council, 2009.
- Accounting Standards Board, *Cutting Clutter: Combating Clutter in Annual Reports*, London: Financial Reporting Council, 2011.
- Agarwal, Vineet, and Taffler, Richard J., 'Twenty-five years of the Taffler z-score model: does it really have predictive ability?', *Accounting and Business Research*, vol 37 (2007), pp285-300.
- American Institute of Certified Public Accountants, *Report of the Task Force on Risks and Uncertainties*, New York: AICPA, 1987.
- American Institute of Certified Public Accountants, Special Committee on Financial Reporting, *Improving Business Reporting – A Customer Focus*, New York: AICPA, 1994.
- Arthur Andersen & Co, Arthur Young, Coopers & Lybrand, Deloitte Haskins & Sells, Ernst & Whinney, Peat, Marwick, Mitchell & Co and Touche Ross & Co, *The Future Relevance, Reliability, and Credibility of Financial Information*, 1986.
- Baginski, Stephen P., and Wahlen, James M., 'Residual income risk, intrinsic values, and share prices', *The Accounting Review*, vol 78 (2003), pp327-51.
- Ball, Ray, and Brown, Philip, 'Portfolio theory and accounting', *Journal of Accounting Research*, vol 7 (1969), pp300-23.
- Barron, Ori E., Kile, Charles O. and O'Keefe, Terrence B., 'MD&A quality as measured by the SEC and analysts' earnings forecasts', *Contemporary Accounting Research*, vol 16 (1999), pp75-109.
- Barth, Mary E., and Landsman, Wayne R., 'How did financial reporting contribute to the financial crisis?', *European Accounting Review*, vol 19 (2010), pp399-423.
- Beasley, Mark S., Branson, Bruce C., and Hancock, Bonnie V., *Developing Key Risk Indicators to Strengthen Enterprise Risk Management*, Durham, North Carolina: COSO, 2010.
- Beaver, William H., Correia, Maria, and McNichols, Maureen F., 'Financial statement analysis and the prediction of financial distress', *Foundations and Trends in Accounting*, vol 5 (2010), pp99-173.
- Beaver, William, Kettler, Paul, and Scholes, Myron, 'The association between market determined and accounting determined risk measures', *The Accounting Review*, vol 45 (1970), pp654-82.
- Beaver, William H., McNichols, Maureen F., and Rhie, Jung-Wu, 'Have financial statements become less informative? Evidence from the ability of financial ratios to predict bankruptcy', *Review of Accounting Studies*, vol 10 (2005), pp93-122.
- Beaver, William, and Manegold, James, 'The association between market-determined and accounting-determined measures of systematic risk: some further evidence', *Journal of Financial and Quantitative Analysis*, vol 10 (1975), pp231-84.

- Beretta, Sergio, and Bozzolan, Saverio, 'A framework for the analysis of firm risk communication', *The International Journal of Accounting*, vol 39 (2004), pp265-88.
- Berger, Thomas, and Gleissner, Werner, *Risk Reporting and Risks Reported: A Study on German HDAX-listed Companies 2000 to 2005*, Nürnberg: RMCE, 2006.
- Black Sun, *The Business Model – Is It the Missing Link?*, London: Black Sun, 2011.
- Board of Governors of the Federal Reserve System, *The Supervisory Capital Assessment Program: Overview of Results*, Washington, DC: BGFERS, 2009.
- Boritz, J. Efrim, *Approaches to Dealing with Risk and Uncertainty*, Toronto: Canadian Institute of Chartered Accountants, 1990.
- Botosan, Christine A., 'Disclosure level and the cost of equity capital', *The Accounting Review*, vol 72 (1997), pp323-49.
- Botosan, Christine A., 'Disclosure and the cost of capital: what do we know?', *Accounting and Business Research*, vol 36 (2006), *International Accounting Policy Forum* special issue, pp31-40.
- Botosan, Christine A., and Plumlee, Marlene A., 'A re-examination of disclosure level and the expected cost of equity capital', *Journal of Accounting Research*, vol 40 (2002), pp21-40.
- Bozzolan, Saverio, Trombetta, Marco, and Beretta, Sergio, 'Forward-looking disclosures, financial verifiability and analysts' forecasts: a study of cross-listed European firms', *European Accounting Review*, vol 18 (2009), pp435-73.
- Brown, Philip, and Ball, Ray, 'Some preliminary findings on the association between the earnings of a firm, its industry, and the economy', *Empirical Research in Accounting, Selected Studies, 1967*, pp55-77, supplement to *Journal of Accounting Research*, vol 5 (1967).
- Bryan, Stephen H., 'Incremental information content of required disclosures contained in management discussion and analysis', *The Accounting Review*, vol 72 (1997), pp285-301.
- Campbell, John L., Chen, Hsinchun, Dhaliwal, Dan S., Lu, Hsin-min, and Steele, Logan B., *The Information Content of Mandatory Risk Factor Disclosures in Corporate Filings*, 2011 (unpublished but available at www.ssrn.com).
- Clarkson, Peter M., Kao, Jennifer L., and Richardson, Gordon D., 'Evidence that management discussion and analysis (MD&A) is part of a firm's overall disclosure package', *Contemporary Accounting Research*, vol 16 (1999), pp111-34.
- Committee of European Banking Supervisors [now the European Banking Authority], *Aggregate Outcome of the 2010 EU Wide Stress Test Exercise Coordinated by CEBS in Cooperation with the ECB*, London: CEBS, 2010.
- Department for Business, Innovation and Skills, *The Future of Narrative Reporting*, London: BIS, 2011.
- Dobler, Michael, *How Informative Is Risk Reporting? A Review of Disclosure Models*, Munich: Munich School of Management, 2005.
- Dobler, Michael, 'National and international developments on risk reporting: may the German Accounting Standard 5 lead the way internationally?', *German Law Journal*, vol 6 (2005), pp1191-1200.
- Elmy, Frederick J., LeGuyader, Louis P., and Linsmeier, Thomas J., 'A review of initial filings under the SEC's new market risk disclosure rules', *The Journal of Corporate Accounting and Finance*, Summer 1998, pp33-45.
- European Banking Authority, *European Banking Authority 2011 EU-Wide Stress Test Aggregate Report*, London: EBA, 2011.
- European Commission, *Corporate Governance in Financial Institutions and Remuneration Policies* (Green Paper), Brussels: EC, 2010.
- Fahlenbrach, Rüdiger, and Stulz, René, *Bank CEO Incentives and the Credit Crisis* (working paper), Zurich: National Centre of Competence in Research – Financial Valuation and Risk Management, 2009.
- Financial Reporting Council, *Internal Control: Revised Guidance for Directors on the Combined Code*, London: FRC, 2005.
- Financial Reporting Council, *Effective Company Stewardship: Enhancing Corporate Reporting and Audit*, London: FRC, 2011.
- Financial Reporting Council, *Effective Company Stewardship: Next Steps*, London: FRC, 2011.

- Financial Reporting Council, *Boards and Risk: A Summary of Discussions with Companies, Investors and Advisers*, London: FRC, 2011.
- Financial Stability Board, *Thematic Review on Risk Disclosure Practices: Peer Review Report*, Basel: FSB, 2011.
- Financial Stability Forum, *Report of the Financial Stability Forum on Enhancing Market and Institutional Resilience*, Basel: FSF, 2008.
- Giner, Begoña, and Reverte, Carmelo, 'The risk-relevance of accounting data: evidence from the Spanish stock market', *Journal of International Financial Management and Accounting*, vol 17 (2006), pp175-207.
- Hodder, Leslie, Koonce, Lisa, and McAnally, Mary Lea, 'SEC market risk disclosures: implications for judgment and decision making', *Accounting Horizons*, vol 15 (2001), pp49-70.
- Hodder, Leslie D., Hopkins, Patrick E., and Wahlen, James M., 'Risk-relevance of fair-value income measures for commercial banks', *The Accounting Review*, vol 81 (2006), pp337-75.
- House of Commons Treasury Committee, *Banking Crisis: Reforming Corporate Governance and Pay in the City*, London: The Stationery Office, 2009.
- House of Lords Select Committee on Economic Affairs, *Auditors: Market Concentration and Their Role*, London: The Stationery Office, 2011.
- ICAEW, *Financial Reporting of Risk: Proposals for a Statement of Business Risk*, London: ICAEW, 1997.
- ICAEW, *Inside Out: Reporting on Shareholder Value*, London: ICAEW, 1999.
- ICAEW, *Internal Control: Guidance for Directors on the Combined Code*, London: ICAEW, 1999.
- ICAEW, *No Surprises: The Case for Better Risk Reporting*, London: ICAEW, 1999.
- ICAEW, *No Surprises: Working for Better Risk Reporting*, London: ICAEW, 2002.
- ICAEW, *Prospective Financial Information: Guidance for UK Directors*, London: ICAEW, 2003.
- ICAEW, *Measurement in Financial Reporting*, London, 2006.
- ICAEW, *Developments in New Reporting Models*, London: ICAEW, 2009.
- ICAEW, *Audit of Banks: Lessons from the Crisis*, London: ICAEW, 2010.
- ICAEW, *Business Models in Accounting: The Theory of the Firm and Financial Reporting*, London: ICAEW, 2010.
- International Accounting Standards Board, *Provisions, Contingent Liabilities and Contingent Assets (IAS 37)*, London: IASC Foundation, 2008.
- International Accounting Standards Board, *Presentation of Financial Statements (IAS 1)*, London: IASC Foundation, 2009.
- International Accounting Standards Board, *Financial Instruments: Disclosures (IFRS 7)*, London: IASC Foundation, 2009.
- International Accounting Standards Board, *Management Commentary: A Framework for Presentation*, London: IFRS Foundation, 2010.
- International Corporate Governance Network, *ICGN Corporate Risk Oversight Guidelines*, London: ICGN, 2010.
- Johnson, Sarah, 'SEC pushes companies for more risk information', *CFO.com*, 2 August 2010.
- Jorgensen, Bjorn N., and Kirschenheiter, Michael T., 'Discretionary risk disclosures', *The Accounting Review*, vol 78 (2003), pp449-69.
- Jorion, Philippe, 'How informative are value-at-risk disclosures?', *The Accounting Review*, vol 77 (2002), pp911-31.
- Kajüter, Peter, *Risk Disclosures of Listed Firms in Germany: A Longitudinal Study, 2004* (unpublished working paper).
- Kaplan, Robert S., 'Accounting scholarship that advances professional knowledge and practice', *The Accounting Review*, vol 86 (2011), pp367-83.
- Kay, John, 'Don't blame luck when your models misfire', *Financial Times*, 2 March 2011, p13.
- Knight, Frank H., *Risk, Uncertainty, and Profit*, London: The London School of Economics and Political Science, 1933 [1921].

Kothari, S. P., Ramanna, Karthik, and Skinner, Douglas J., 'Implications for GAAP from an analysis of positive research in accounting', *Journal of Accounting and Economics*, vol 50 (2010), pp246-86.

Kravet, Todd, and Muslu, Volkan, *Informativeness of Risk Disclosures in Corporate Annual Reports*, 2011 (unpublished but available at www.ssrn.com).

Lajili, Kaouther, and Zéghal, Daniel, 'A content analysis of risk management disclosures in Canadian annual reports', *Canadian Journal of Administrative Sciences*, vol 22 (2005), pp125-42.

Landsman, Wayne R., Peasnell, Kenneth V., and Shakespeare, Catherine, 'Are asset securitizations sales or loans?', *The Accounting Review*, vol 83 (2008), pp1251-72.

Lang, Mark H., and Lundholm, Russell J., 'Corporate disclosure policy and analyst behavior', *The Accounting Review*, vol 71 (1996), pp467-92.

Lewis, Michael, *The Big Short*, London: Penguin, 2011.

Linsley, Philip M., *UK Bank Risk Disclosures in the Period Through to the Onset of the Global Financial Crisis*, London: ICAEW, 2011.

Linsley, Philip M., and Shrivs, Philip J., 'Risk management and reporting risk in the UK', *Journal of Risk*, vol 3 (2000), pp115-29.

Linsley, Philip M., and Shrivs, Philip J., 'Risk reporting: a study of risk disclosures in the annual reports of UK companies', *The British Accounting Review*, vol 38 (2006), pp387-404.

Linsley, Philip M., Shrivs, Philip J., and Crumpton, Mandy, 'Risk disclosure: an exploratory study of UK and Canadian banks', *Journal of Banking Regulation*, vol 7 (2006), pp268-82.

Linsmeier, Thomas J., and Pearson, Neil D., 'Quantitative disclosures of market risk in the SEC release', *Accounting Horizons*, vol 11 (2007), pp107-35.

Linsmeier, Thomas J., Thornton, Daniel B., Venkatachalam, Mohan, and Welker, Michael, 'The effect of mandated market risk disclosures on trading volume sensitivity to interest rate, exchange rate, and commodity price movements', *The Accounting Review*, vol 77 (2002), pp343-77.

Macdonald, W. A., (chairman), *Report of the Commission to Study the Public's Expectations of Audits*, Toronto: Canadian Institute of Chartered Accountants, 1988.

Marshall, Andrew, and Weetman, Pauline, *Managing Interest Rate Risk and Foreign Exchange Risk: Disclosure of Objectives, Policies and Processes*, London: ICAEW, 2008.

National Commission on the Causes of the Financial and Economic Crisis in the United States, *The Financial Crisis Inquiry Report*, Washington DC: US Government Printing Office, 2011.

Pope, Peter F., 'Bridging the gap between accounting and finance', *The British Accounting Review*, vol 42 (2010), pp88-102.

Power, Michael, *The Risk Management of Everything*, London: ICAEW, 2004.

Power, Michael, 'The risk management of nothing', *Accounting, Organizations and Society*, vol 34 (2009), pp849-55.

PricewaterhouseCoopers, *Guide to Forward-Looking Information*, London: PwC, 2007.

Rajgopal, Shivaram, 'Early evidence on the informativeness of the SEC's market risk disclosures: the case of commodity price risk exposure of oil and gas producers', *The Accounting Review*, vol 74 (1999), pp251-80.

Ricciardi, Victor, *A Risk Perception Primer: A Narrative Research Review of the Risk Perception Literature in Behavioral Accounting and Behavioral Finance*, 2004 (unpublished but available at www.ssrn.com).

Roulstone, Darren T., 'Effect of SEC Financial Reporting Release No. 48 on derivative and market risk disclosures', *Accounting Horizons*, vol 13 (1999), pp343-63.

Ryan, Stephen G., 'A survey of research relating accounting numbers to systematic equity risk, with implications for risk disclosure policy and future research', *Accounting Horizons*, vol 11 (1997), pp82-95.

Schrand, Catherine M., 'The association between stock-price interest rate sensitivity and disclosures about derivative instruments', *The Accounting Review*, vol 72 (1997), pp87-109.

Schrand, Catherine M., and Elliott, John A., 'Risk and financial reporting: a summary of the discussion at the 1997 AAA/FASB conference', *Accounting Horizons*, vol 12 (1998), pp271-82.

- Scott, Mike, 'Putting people, planet and profit into the annual report', *Financial Times, FTfm* supplement, 29 November 2010.
- Securities and Exchange Commission, *SEC Interpretation: Management's Discussion and Analysis of Financial Condition and Results of Operations; Certain Investment Company Disclosures*, Washington: SEC, 1989.
- Senior Supervisors Group, *Leading-Practice Disclosures for Selected Exposures*, no place: SSG, 2008.
- Senior Supervisors Group, *Observations on Risk Management Practices during the Recent Market Turbulence*, no place: SSG, 2008.
- Senior Supervisors Group, *Risk Management Lessons from the Global Banking Crisis of 2008*, no place: SSG, 2009.
- Solomon, Jill F., Solomon, Aris, Norton, Simon D., and Joseph, Nathan L., 'A conceptual framework for corporate risk disclosure emerging from the agenda for corporate governance reform', *The British Accounting Review*, vol 32 (2000), pp447-78.
- Spira, Laura F., and Page, Michael, 'Regulation by disclosure: the case of internal control', *Journal of Management and Governance*, vol 14 (2010), pp409-33.
- Stanford, Wendy, 'How to declutter reporting', *FS Focus* (published by ICAEW), May 2011, pp10-11.
- Taleb, Nassim Nicholas, *Foiled by Randomness: The Hidden Role of Chance in Life and in the Markets*, New York: Texere, 2004.
- Taleb, Nassim Nicholas, *The Black Swan: The Impact of the Highly Improbable*, London: Allen Lane, 2007.
- Treadway, Jr., James C., (chairman), *Report of the National Commission on Fraudulent Financial Reporting*, National Commission on Fraudulent Financial Reporting, 1987.
- US Senate Permanent Subcommittee on Investigations, *Wall Street and the Financial Crisis: Anatomy of a Financial Collapse*, Washington DC: US Senate, 2011.
- Valukas, Anton R., *In re Lehman Brothers Holdings Inc et al*, New York: United States Bankruptcy Court Southern District of New York, 2010.
- Walker, Sir David, *A Review of Corporate Governance in UK Banks and Other Financial Industry Entities*, London: HM Treasury, 2009.
- Woods, Margaret, Dowd, Kevin, and Humphrey, Christopher, 'The value of risk reporting: a critical analysis of value-at-risk disclosures in the banking sector', *International Journal of Financial Services Management*, vol 3 (2008), pp45-64.
- Woods, Margaret, Dowd, Kevin, and Humphrey, Christopher, 'Market risk reporting by the world's top banks: evidence on the diversity of reporting practice and the implications for international accounting harmonisation', *Revista de Contabilidad – Spanish Accounting Review*, vol 11 (2008), no 2, pp9-42.



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TAB G

RISK REPORTING

APPENDIX C

Task Force on Climate Related Financial
Disclosures [TCFD] Final Report:

Recommendations of the Task Force on
Climate-related Financial Disclosures

June 2017

DECEMBER 2018

Final Report

Recommendations of the Task Force on Climate-related Financial Disclosures

June 15, 2017

Mr. Mark Carney
Chairman
Financial Stability Board
Bank for International Settlements
Centralbahnplatz 2
CH-4002 Basel
Switzerland

Dear Chairman Carney,

On behalf of the Task Force on Climate-related Financial Disclosures, I am pleased to present this final report setting out our recommendations for helping businesses disclose climate-related financial information.

As you know, warming of the planet caused by greenhouse gas emissions poses serious risks to the global economy and will have an impact across many economic sectors. It is difficult for investors to know which companies are most at risk from climate change, which are best prepared, and which are taking action.

The Task Force's report establishes recommendations for disclosing clear, comparable and consistent information about the risks and opportunities presented by climate change. Their widespread adoption will ensure that the effects of climate change become routinely considered in business and investment decisions. Adoption of these recommendations will also help companies better demonstrate responsibility and foresight in their consideration of climate issues. That will lead to smarter, more efficient allocation of capital, and help smooth the transition to a more sustainable, low-carbon economy.

The industry Task Force spent 18 months consulting with a wide range of business and financial leaders to hone its recommendations and consider how to help companies better communicate key climate-related information. The feedback we received in response to the Task Force's draft report confirmed broad support from industry and others, and involved productive dialogue among companies and banks, insurers, and investors. This was and remains a collaborative process, and as these recommendations are implemented, we hope that this dialogue and feedback continues.

Since the Task Force began its work, we have also seen a significant increase in demand from investors for improved climate-related financial disclosures. This comes amid unprecedented support among companies for action to tackle climate change.

I want to thank the Financial Stability Board for its leadership in promoting better disclosure of climate-related financial risks, and for its support of the Task Force's work. I am also grateful to the Task Force members and Secretariat for their extensive contributions and dedication to this effort.

The risk climate change poses to businesses and financial markets is real and already present. It is more important than ever that businesses lead in understanding and responding to these risks—and seizing the opportunities—to build a stronger, more resilient, and sustainable global economy.

Sincerely,

A handwritten signature in black ink, appearing to read "Michael R. Bloomberg". The signature is fluid and cursive, with a long, sweeping tail on the final letter.

Michael R. Bloomberg

Executive Summary

Financial Markets and Transparency

One of the essential functions of financial markets is to price risk to support informed, efficient capital-allocation decisions. Accurate and timely disclosure of current and past operating and financial results is fundamental to this function, but it is increasingly important to understand the governance and risk management context in which financial results are achieved. The financial crisis of 2007-2008 was an important reminder of the repercussions that weak corporate governance and risk management practices can have on asset values. This has resulted in increased demand for transparency from organizations on their governance structures, strategies, and risk management practices. Without the right information, investors and others may incorrectly price or value assets, leading to a misallocation of capital.

Increasing transparency makes markets more efficient and economies more stable and resilient.

—Michael R. Bloomberg

Financial Implications of Climate Change

One of the most significant, and perhaps most misunderstood, risks that organizations face today relates to climate change. While it is widely recognized that continued emission of greenhouse gases will cause further warming of the planet and this warming could lead to damaging economic and social consequences, the exact timing and severity of physical effects are difficult to estimate. The large-scale and long-term nature of the problem makes it uniquely challenging, especially in the context of economic decision making. Accordingly, many organizations incorrectly perceive the implications of climate change to be long term and, therefore, not necessarily relevant to decisions made today.

The potential impacts of climate change on organizations, however, are not only physical and do not manifest only in the long term. To stem the disastrous effects of climate change within this century, nearly 200 countries agreed in December 2015 to reduce greenhouse gas emissions and accelerate the transition to a lower-carbon economy. The reduction in greenhouse gas emissions implies movement away from fossil fuel energy and related physical assets. This coupled with rapidly declining costs and increased deployment of clean and energy-efficient technologies could have significant, near-term financial implications for organizations dependent on extracting, producing, and using coal, oil, and natural gas. While such organizations may face significant climate-related risks, they are not alone. In fact, climate-related risks and the expected transition to a lower-carbon economy affect most economic sectors and industries. While changes associated with a transition to a lower-carbon economy present significant risk, they also create significant opportunities for organizations focused on climate change mitigation and adaptation solutions.

For many investors, climate change poses significant financial challenges and opportunities, now and in the future. The expected transition to a lower-carbon economy is estimated to require around \$1 trillion of investments a year for the foreseeable future, generating new investment opportunities.¹ At the same time, the risk-return profile of organizations exposed to climate-related risks may change significantly as such organizations may be more affected by physical impacts of climate change, climate policy, and new technologies. In fact, a 2015 study estimated the value at risk, as a result of climate change, to the total global stock of manageable assets as

¹ International Energy Agency, *World Energy Outlook Special Briefing for COP21*, 2015.

ranging from \$4.2 trillion to \$43 trillion between now and the end of the century.² The study highlights that “much of the impact on future assets will come through weaker growth and lower asset returns across the board.” This suggests investors may not be able to avoid climate-related risks by moving out of certain asset classes as a wide range of asset types could be affected. Both investors and the organizations in which they invest, therefore, should consider their longer-term strategies and most efficient allocation of capital. Organizations that invest in activities that may not be viable in the longer term may be less resilient to the transition to a lower-carbon economy; and their investors will likely experience lower returns. Compounding the effect on longer-term returns is the risk that present valuations do not adequately factor in climate-related risks because of insufficient information. As such, long-term investors need adequate information on how organizations are preparing for a lower-carbon economy.

Furthermore, because the transition to a lower-carbon economy requires significant and, in some cases, disruptive changes across economic sectors and industries in the near term, financial policymakers are interested in the implications for the global financial system, especially in terms of avoiding financial dislocations and sudden losses in asset values. Given such concerns and the potential impact on financial intermediaries and investors, the G20 Finance Ministers and Central Bank Governors asked the Financial Stability Board to review how the financial sector can take account of climate-related issues. As part of its review, the Financial Stability Board identified the need for better information to support informed investment, lending, and insurance underwriting decisions and improve understanding and analysis of climate-related risks and opportunities. Better information will also help investors engage with companies on the resilience of their strategies and capital spending, which should help promote a smooth rather than an abrupt transition to a lower-carbon economy.

Task Force on Climate-related Financial Disclosures

To help identify the information needed by investors, lenders, and insurance underwriters to appropriately assess and price climate-related risks and opportunities, the Financial Stability Board established an industry-led task force: the Task Force on Climate-related Financial Disclosures (Task Force). The Task Force was asked to develop voluntary, consistent climate-related financial disclosures that would be useful to investors, lenders, and insurance underwriters in understanding material risks. The 32-member Task Force is global; its members were selected by the Financial Stability Board and come from various organizations, including large banks, insurance companies, asset managers, pension funds, large non-financial companies, accounting and consulting firms, and credit rating agencies. In its work, the Task Force drew on member expertise, stakeholder engagement, and existing climate-related disclosure regimes to develop a singular, accessible framework for climate-related financial disclosure.

The Task Force developed four widely adoptable recommendations on climate-related financial disclosures that are applicable to organizations across sectors and jurisdictions (Figure 1). Importantly, the Task Force’s recommendations apply to financial-sector organizations, including banks, insurance companies, asset managers, and asset owners. Large asset owners and asset managers sit at the top of the investment chain and, therefore, have an

Figure 1

Key Features of Recommendations

- Adoptable by all organizations
- Included in financial filings
- Designed to solicit decision-useful, forward-looking information on financial impacts
- Strong focus on risks and opportunities related to transition to lower-carbon economy

² The Economist Intelligence Unit, “The Cost of Inaction: Recognising the Value at Risk from Climate Change,” 2015. Value at risk measures the loss a portfolio may experience, within a given time horizon, at a particular probability, and the stock of manageable assets is defined as the total stock of assets held by non-bank financial institutions. Bank assets were excluded as they are largely managed by banks themselves.

important role to play in influencing the organizations in which they invest to provide better climate-related financial disclosures.

In developing and finalizing its recommendations, the Task Force solicited input throughout the process.³ First, in April 2016, the Task Force sought public comment on the scope and high-level objectives of its work. As the Task Force developed its disclosure recommendations, it continued to solicit feedback through hundreds of industry interviews, meetings, and other touchpoints. Then, in December 2016, the Task Force issued its draft recommendations and sought public comment on the recommendations as well as certain key issues, receiving over 300 responses. This final report reflects the Task Force's consideration of industry and other public feedback received throughout 2016 and 2017. [Section E](#) contains a summary of key issues raised by the industry as well as substantive changes to the report since December.

Disclosure in Mainstream Financial Filings

The Task Force recommends that preparers of climate-related financial disclosures provide such disclosures in their mainstream (i.e., public) annual financial filings. In most G20 jurisdictions, companies with public debt or equity have a legal obligation to disclose material information in their financial filings—including material climate-related information. The Task Force believes climate-related issues are or could be material for many organizations, and its recommendations should be useful to organizations in complying more effectively with existing disclosure obligations.⁴ In addition, disclosure in mainstream financial filings should foster shareholder engagement and broader use of climate-related financial disclosures, thus promoting a more informed understanding of climate-related risks and opportunities by investors and others. The Task Force also believes that publication of climate-related financial information in mainstream annual financial filings will help ensure that appropriate controls govern the production and disclosure of the required information. More specifically, the Task Force expects the governance processes for these disclosures would be similar to those used for existing public financial disclosures and would likely involve review by the chief financial officer and audit committee, as appropriate.

Importantly, organizations should make financial disclosures in accordance with their national disclosure requirements. If certain elements of the recommendations are incompatible with national disclosure requirements for financial filings, the Task Force encourages organizations to disclose those elements in other official company reports that are issued at least annually, widely distributed and available to investors and others, and subject to internal governance processes that are the same or substantially similar to those used for financial reporting.

Core Elements of Climate-Related Financial Disclosures

The Task Force structured its recommendations around four thematic areas that represent core elements of how organizations operate: governance, strategy, risk management, and metrics and targets ([Figure 2](#), p. v). The four overarching recommendations are supported by recommended disclosures that build out the framework with information that will help investors and others understand how reporting organizations assess climate-related risks and opportunities.⁵ In addition, there is guidance to support all organizations in developing climate-related financial disclosures consistent with the recommendations and recommended disclosures. The guidance assists preparers by providing context and suggestions for implementing the recommended disclosures. For the financial sector and certain non-financial sectors, *supplemental* guidance was developed to highlight important sector-specific considerations and provide a fuller picture of potential climate-related financial impacts in those sectors.

³ See [Appendix 2: Task Force Objectives and Approach](#) for more information.

⁴ The Task Force encourages organizations where climate-related issues could be material in the future to begin disclosing climate-related financial information outside financial filings to facilitate the incorporation of such information into financial filings once climate-related issues are determined to be material.

⁵ See [Figure 4](#) on p. 14 for the Task Force's recommendations and recommended disclosures.

Figure 2

Core Elements of Recommended Climate-Related Financial Disclosures



Governance

The organization's governance around climate-related risks and opportunities

Strategy

The actual and potential impacts of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning

Risk Management

The processes used by the organization to identify, assess, and manage climate-related risks

Metrics and Targets

The metrics and targets used to assess and manage relevant climate-related risks and opportunities

Climate-Related Scenarios

One of the Task Force's key recommended disclosures focuses on the resilience of an organization's strategy, taking into consideration different climate-related scenarios, including a 2° Celsius or lower scenario.⁶ An organization's disclosure of how its strategies might change to address potential climate-related risks and opportunities is a key step to better understanding the potential implications of climate change on the organization. The Task Force recognizes the use of scenarios in assessing climate-related issues and their potential financial implications is relatively recent and practices will evolve over time, but believes such analysis is important for improving the disclosure of decision-useful, climate-related financial information.

Conclusion

Recognizing that climate-related financial reporting is still evolving, the Task Force's recommendations provide a foundation to improve investors' and others' ability to appropriately assess and price climate-related risk and opportunities. The Task Force's recommendations aim to be ambitious, but also practical for near-term adoption. The Task Force expects to advance the quality of mainstream financial disclosures related to the potential effects of climate change on organizations today and in the future and to increase investor engagement with boards and senior management on climate-related issues.

Improving the quality of climate-related financial disclosures begins with organizations' willingness to adopt the Task Force's recommendations. Organizations already reporting climate-related information under other frameworks may be able to disclose under this framework immediately and are strongly encouraged to do so. Those organizations in early stages of evaluating the impact of climate change on their businesses and strategies can begin by disclosing climate-related issues as they relate to governance, strategy, and risk management practices. The Task Force recognizes the challenges associated with measuring the impact of climate change, but believes that by moving climate-related issues into mainstream annual financial filings, practices and techniques will evolve more rapidly. Improved practices and techniques, including data analytics, should further improve the quality of climate-related financial disclosures and, ultimately, support more appropriate pricing of risks and allocation of capital in the global economy.

⁶ A 2° Celsius (2°C) scenario lays out an energy system deployment pathway and an emissions trajectory consistent with limiting the global average temperature increase to 2°C above the pre-industrial average. The Task Force is not recommending organizations use a specific 2°C scenario.

Contents

Letter from Michael R. Bloomberg	i
Executive Summary	ii
A Introduction.....	1
1. Background	1
2. The Task Force's Remit.....	2
B Climate-Related Risks, Opportunities, and Financial Impacts	5
1. Climate-Related Risks	5
2. Climate-Related Opportunities	6
3. Financial Impacts	8
C Recommendations and Guidance.....	13
1. Overview of Recommendations and Guidance.....	13
2. Implementing the Recommendations	17
3. Guidance for All Sectors.....	19
D Scenario Analysis and Climate-Related Issues	25
1. Overview of Scenario Analysis	25
2. Exposure to Climate-Related Risks	26
3. Recommended Approach to Scenario Analysis	27
4. Applying Scenario Analysis	29
5. Challenges and Benefits of Conducting Scenario Analysis.....	30
E Key Issues Considered and Areas for Further Work	32
1. Relationship to Other Reporting Initiatives	33
2. Location of Disclosures and Materiality.....	33
3. Scenario Analysis	35
4. Data Availability and Quality and Financial Impact	35
5. GHG Emissions Associated with Investments	36
6. Remuneration	37
7. Accounting Considerations.....	37
8. Time Frames for Short, Medium, and Long Term.....	38
9. Scope of Coverage	38
10. Organizational Ownership.....	39
F Conclusion	41
Appendix 1: Task Force Members	44
Appendix 2: Task Force Objectives and Approach	46
Appendix 3: Fundamental Principles for Effective Disclosure	51
Appendix 4: Select Disclosure Frameworks	54
Appendix 5: Glossary and Abbreviations.....	62
Appendix 6: References	65

A Introduction

A Introduction

1. Background

It is widely recognized that continued emission of greenhouse gases will cause further warming of the Earth and that warming above 2° Celsius (2°C), relative to the pre-industrial period, could lead to catastrophic economic and social consequences.⁷ As evidence of the growing recognition of the risks posed by climate change, in December 2015, nearly 200 governments agreed to strengthen the global response to the threat of climate change by “holding the increase in the global average temperature to well below 2°C above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5°C above pre-industrial levels,” referred to as the Paris Agreement.⁸ The large-scale and long-term nature of the problem makes it uniquely challenging, especially in the context of economic decision making. Moreover, the current understanding of the potential financial risks posed by climate change—to companies, investors, and the financial system as a whole—is still at an early stage.

There is a growing demand for decision-useful, climate-related information by a range of participants in the financial markets.⁹ Creditors and investors are increasingly demanding access to risk information that is consistent, comparable, reliable, and clear. There has also been increased focus, especially since the financial crisis of 2007-2008, on the negative impact that weak corporate governance can have on shareholder value, resulting in increased demand for transparency from organizations on their risks and risk management practices, including those related to climate change.

The growing demand for decision-useful, climate-related information has resulted in the development of several climate-related disclosure standards. Many of the existing standards, however, focus on disclosure of climate-related information, such as greenhouse gas (GHG) emissions and other sustainability metrics. Users of such climate-related disclosures commonly cite the lack of information on the financial implications around the climate-related aspects of an organization's business as a key gap. Users also cite inconsistencies in disclosure practices, a lack of context for information, use of boilerplate, and non-comparable reporting as major obstacles to incorporating climate-related risks and opportunities (collectively referred to as climate-related issues) as considerations in their investment, lending, and insurance underwriting decisions over the medium and long term.¹⁰ In addition, evidence suggests that the lack of consistent information hinders investors and others from considering climate-related issues in their asset valuation and allocation processes.¹¹

In general, inadequate information about risks can lead to a mispricing of assets and misallocation of capital and can potentially give rise to concerns about financial stability since markets can be vulnerable to abrupt corrections.¹² Recognizing these concerns, the G20 (Group of 20) Finance Ministers and Central Bank Governors requested that the Financial Stability Board (FSB) “convene public- and private-sector participants to review how the financial sector can take account of climate-related issues.”¹³ In response to the G20's request, the FSB held a meeting of public- and private-sector representatives in September 2015 to consider the implications of climate-related issues for the financial sector. “Participants exchanged views on the existing work of the financial sector, authorities, and standard setters in this area and the challenges they face,

⁷ Intergovernmental Panel on Climate Change, *Fifth Assessment Report*, Cambridge University Press, 2014.

⁸ United Nations Framework Convention on Climate Change, “*The Paris Agreement*,” December 2015.

⁹ Avery Fellow, “*Investors Demand Climate Risk Disclosure*,” Bloomberg, February 2013.

¹⁰ Sustainability Accounting Standards Board (SASB), *SASB Climate Risk Technical Bulletin#: TB001-10182016*, October 2016.

¹¹ Mercer LLC, *Investing in a Time of Climate Change*, 2015.

¹² Mark Carney, “*Breaking the tragedy of the horizon—climate change and financial stability*,” September 29, 2015.

¹³ “*Communiqué from the G20 Finance Ministers and Central Bank Governors Meeting in Washington, D.C. April 16-17, 2015*,” April 2015.

A
Introduction

B
Climate-Related Risks,
Opportunities, and
Financial Impacts

C
Recommendations and
Guidance

D
Scenario Analysis and
Climate-Related Issues

E
Key Issues Considered and
Areas for Further Work

F
Conclusion

Appendices

areas for possible further work, and the possible roles the FSB and others could play in taking that work forward. The discussions continually returned to a common theme: the need for better information.”¹⁴

In most G20 jurisdictions, companies with public debt or equity have a legal obligation to disclose material risks in their financial reports—including material climate-related risks. However, the absence of a standardized framework for disclosing climate-related financial risks makes it difficult for organizations to determine what information should be included in their filings and how it should be presented. Even when reporting similar climate-related information, disclosures are often difficult to compare due to variances in mandatory and voluntary frameworks. The resulting fragmentation in reporting practices and lack of focus on financial impacts have prevented investors, lenders, insurance underwriters, and other users of disclosures from accessing complete information that can inform their economic decisions. Furthermore, because financial-sector organizations’ disclosures depend, in part, on those from the companies in which they invest or lend, regulators face challenges in using financial-sector organizations’ existing disclosures to determine system-wide exposures to climate-related risks.

In response, the FSB established the industry-led Task Force on Climate-related Financial Disclosures (TCFD or Task Force) in December 2015 to design a set of recommendations for consistent “disclosures that will help financial market participants understand their climate-related risks.”¹⁵ See [Box 1](#) (p. 3) for more information on the Task Force.

2. The Task Force’s Remit

The FSB called on the Task Force to develop climate-related disclosures that “could promote more informed investment, credit [or lending], and insurance underwriting decisions” and, in turn, “would enable stakeholders to understand better the concentrations of carbon-related assets in the financial sector and the financial system’s exposures to climate-related risks.”^{16,17} The FSB noted that disclosures by the financial sector in particular would “foster an early assessment of these risks” and “facilitate market discipline.” Such disclosures would also “provide a source of data that can be analyzed at a systemic level, to facilitate authorities’ assessments of the materiality of any risks posed by climate change to the financial sector, and the channels through which this is most likely to be transmitted.”¹⁸

The FSB also emphasized that “any disclosure recommendations by the Task Force would be voluntary, would need to incorporate the principle of materiality and would need to weigh the balance of costs and benefits.”¹⁹ As a result, in devising a principle-based framework for voluntary disclosure, the Task Force sought to balance the needs of the users of disclosures with the challenges faced by the preparers. The FSB further stated that the Task Force’s climate-related financial disclosure recommendations should not “add to the already well developed body of existing disclosure schemes.”²⁰ In response, the Task Force drew from existing disclosure frameworks where possible and appropriate.

The FSB also noted the Task Force should determine whether the target audience of users of climate-related financial disclosures should extend beyond investors, lenders, and insurance underwriters. Investors, lenders, and insurance underwriters (“primary users”) are the appropriate target audience. These primary users assume the financial risk and reward of the

¹⁴ FSB, “[FSB to establish Task Force on Climate-related Financial Disclosures](#),” December 4, 2015.

¹⁵ Ibid.

¹⁶ FSB, “[Proposal for a Disclosure Task Force on Climate-Related Risks](#),” November 9, 2015.

¹⁷ The term carbon-related assets is not well defined, but is generally considered to refer to assets or organizations with relatively high direct or indirect GHG emissions. The Task Force believes further work is needed on defining carbon-related assets and potential financial impacts.

¹⁸ FSB, “[Proposal for a Disclosure Task Force on Climate-Related Risks](#),” November 9, 2015.

¹⁹ Ibid.

²⁰ Ibid.

A Introduction

B Climate-Related Risks, Opportunities, and Financial Impacts

C Recommendations and Guidance

D Scenario Analysis and Climate-Related Issues

E Key Issues Considered and Areas for Further Work

F Conclusion

Appendices

decisions they make. The Task Force recognizes that many other organizations, including credit rating agencies, equity analysts, stock exchanges, investment consultants, and proxy advisors also use climate-related financial disclosures, allowing them to push information through the credit and investment chain and contribute to the better pricing of risks by investors, lenders, and insurance underwriters. These organizations, in principle, depend on the same types of information as primary users.

This report presents the Task Force's recommendations for climate-related financial disclosures and includes supporting information on climate-related risks and opportunities, scenario analysis, and industry feedback that the Task Force considered in developing and then finalizing its recommendations. In addition, the Task Force developed a "stand-alone" document—[Implementing the Recommendations of the Task Force on Climate-related Financial Disclosures](#) (Annex)—for organizations to use when preparing disclosures consistent with the recommendations. The Annex provides supplemental guidance for the financial sector as well as for non-financial groups potentially most affected by climate change and the transition to a lower-carbon economy. The supplemental guidance assists preparers by providing additional context and suggestions for implementing the recommended disclosures.

The Task Force's recommendations provide a foundation for climate-related financial disclosures and aim to be ambitious, but also practical for near-term adoption. The Task Force expects that reporting of climate-related risks and opportunities will evolve over time as organizations, investors, and others contribute to the quality and consistency of the information disclosed.

- A Introduction
- B Climate-Related Risks, Opportunities, and Financial Impacts
- C Recommendations and Guidance
- D Scenario Analysis and Climate-Related Issues
- E Key Issues Considered and Areas for Further Work
- F Conclusion
- Appendices

Box 1

Task Force on Climate-related Financial Disclosures

The Task Force membership, first announced on January 21, 2016, has international representation and spans various types of organizations, including banks, insurance companies, asset managers, pension funds, large non-financial companies, accounting and consulting firms, and credit rating agencies—a unique collaborative partnership between the users and preparers of financial reports.

In its work, the Task Force drew on its members' expertise, stakeholder engagement, and existing climate-related disclosure regimes to develop a singular, accessible framework for climate-related financial disclosure. See Appendix 1 for a list of the Task Force members and Appendix 2 for more information on the Task Force's approach.

The Task Force is comprised of 32 global members representing a broad range of economic sectors and financial markets and a careful balance of users and preparers of climate-related financial disclosures.



B Climate-Related Risks, Opportunities, and Financial Impacts

B Climate-Related Risks, Opportunities, and Financial Impacts

Through its work, the Task Force identified a growing demand by investors, lenders, insurance underwriters, and other stakeholders for decision-useful, climate-related financial information. Improved disclosure of climate-related risks and opportunities will provide investors, lenders, insurance underwriters, and other stakeholders with the metrics and information needed to undertake robust and consistent analyses of the potential financial impacts of climate change.

The Task Force found that while several climate-related disclosure frameworks have emerged across different jurisdictions in an effort to meet the growing demand for such information, there is a need for a standardized framework to promote alignment across existing regimes and G20 jurisdictions and to provide a common framework for climate-related financial disclosures. An important element of such a framework is the consistent categorization of climate-related risks and opportunities. As a result, the Task Force defined categories for climate-related risks and climate-related opportunities. The Task Force's recommendations serve to encourage organizations to evaluate and disclose, as part of their annual financial filing preparation and reporting processes, the climate-related risks and opportunities that are most pertinent to their business activities. The main climate-related risks and opportunities that organizations should consider are described below and in [Tables 1 and 2](#) (pp. 10-11).

A
Introduction

B
Climate-Related Risks,
Opportunities, and
Financial Impacts

C
Recommendations and
Guidance

D
Scenario Analysis and
Climate-Related Issues

E
Key Issues Considered and
Areas for Further Work

F
Conclusion

Appendices

1. Climate-Related Risks

The Task Force divided climate-related risks into two major categories: (1) risks related to the *transition* to a lower-carbon economy and (2) risks related to the *physical* impacts of climate change.

a. Transition Risks

Transitioning to a lower-carbon economy may entail extensive policy, legal, technology, and market changes to address mitigation and adaptation requirements related to climate change. Depending on the nature, speed, and focus of these changes, transition risks may pose varying levels of financial and reputational risk to organizations.

Policy and Legal Risks

Policy actions around climate change continue to evolve. Their objectives generally fall into two categories—policy actions that attempt to constrain actions that contribute to the adverse effects of climate change or policy actions that seek to promote adaptation to climate change. Some examples include implementing carbon-pricing mechanisms to reduce GHG emissions, shifting energy use toward lower emission sources, adopting energy-efficiency solutions, encouraging greater water efficiency measures, and promoting more sustainable land-use practices. The risk associated with and financial impact of policy changes depend on the nature and timing of the policy change.²¹

Another important risk is litigation or legal risk. Recent years have seen an increase in climate-related litigation claims being brought before the courts by property owners, municipalities, states, insurers, shareholders, and public interest organizations.²² Reasons for such litigation include the failure of organizations to mitigate impacts of climate change, failure to adapt to climate change, and the insufficiency of disclosure around material financial risks. As the value of loss and damage arising from climate change grows, litigation risk is also likely to increase.

²¹ Organizations should assess not only the potential direct effects of policy actions on their operations, but also the potential second and third order effects on their supply and distribution chains.

²² Peter Seley, "Emerging Trends in Climate Change Litigation," *Law 360*, March 7, 2016.

A	Introduction
B	Climate-Related Risks, Opportunities, and Financial Impacts
C	Recommendations and Guidance
D	Scenario Analysis and Climate-Related Issues
E	Key Issues Considered and Areas for Further Work
F	Conclusion
	Appendices

Technology Risk

Technological improvements or innovations that support the transition to a lower-carbon, energy-efficient economic system can have a significant impact on organizations. For example, the development and use of emerging technologies such as renewable energy, battery storage, energy efficiency, and carbon capture and storage will affect the competitiveness of certain organizations, their production and distribution costs, and ultimately the demand for their products and services from end users. To the extent that new technology displaces old systems and disrupts some parts of the existing economic system, winners and losers will emerge from this “creative destruction” process. The timing of technology development and deployment, however, is a key uncertainty in assessing technology risk.

Market Risk

While the ways in which markets could be affected by climate change are varied and complex, one of the major ways is through shifts in supply and demand for certain commodities, products, and services as climate-related risks and opportunities are increasingly taken into account.

Reputation Risk

Climate change has been identified as a potential source of reputational risk tied to changing customer or community perceptions of an organization’s contribution to or detractor from the transition to a lower-carbon economy.

b. Physical Risks

Physical risks resulting from climate change can be event driven (acute) or longer-term shifts (chronic) in climate patterns. Physical risks may have financial implications for organizations, such as direct damage to assets and indirect impacts from supply chain disruption. Organizations’ financial performance may also be affected by changes in water availability, sourcing, and quality; food security; and extreme temperature changes affecting organizations’ premises, operations, supply chain, transport needs, and employee safety.

Acute Risk

Acute physical risks refer to those that are event-driven, including increased severity of extreme weather events, such as cyclones, hurricanes, or floods.

Chronic Risk

Chronic physical risks refer to longer-term shifts in climate patterns (e.g., sustained higher temperatures) that may cause sea level rise or chronic heat waves.

2. Climate-Related Opportunities

Efforts to mitigate and adapt to climate change also produce opportunities for organizations, for example, through resource efficiency and cost savings, the adoption of low-emission energy sources, the development of new products and services, access to new markets, and building resilience along the supply chain. Climate-related opportunities will vary depending on the region, market, and industry in which an organization operates. The Task Force identified several areas of opportunity as described below.

a. Resource Efficiency

There is growing evidence and examples of organizations that have successfully reduced operating costs by improving efficiency across their production and distribution processes, buildings, machinery/appliances, and transport/mobility—in particular in relation to energy efficiency but also including broader materials, water, and waste management.²³ Such actions can

²³ UNEP and Copenhagen Centre for Energy Efficiency, *Best Practices and Case Studies for Industrial Energy Efficiency Improvement*, February 16, 2016.

result in direct cost savings to organizations' operations over the medium to long term and contribute to the global efforts to curb emissions.²⁴ Innovation in technology is assisting this transition; such innovation includes developing efficient heating solutions and circular economy solutions, making advances in LED lighting technology and industrial motor technology, retrofitting buildings, employing geothermal power, offering water usage and treatment solutions, and developing electric vehicles.²⁵

b. Energy Source

According to the International Energy Agency (IEA), to meet global emission-reduction goals, countries will need to transition a major percentage of their energy generation to low emission alternatives such as wind, solar, wave, tidal, hydro, geothermal, nuclear, biofuels, and carbon capture and storage.²⁶ For the fifth year in a row, investments in renewable energy capacity have exceeded investments in fossil fuel generation.²⁷ The trend toward decentralized clean energy sources, rapidly declining costs, improved storage capabilities, and subsequent global adoption of these technologies are significant. Organizations that shift their energy usage toward low emission energy sources could potentially save on annual energy costs.²⁸

c. Products and Services

Organizations that innovate and develop new low-emission products and services may improve their competitive position and capitalize on shifting consumer and producer preferences. Some examples include consumer goods and services that place greater emphasis on a product's carbon footprint in its marketing and labeling (e.g., travel, food, beverage and consumer staples, mobility, printing, fashion, and recycling services) and producer goods that place emphasis on reducing emissions (e.g., adoption of energy-efficiency measures along the supply chain).

d. Markets

Organizations that pro-actively seek opportunities in new markets or types of assets may be able to diversify their activities and better position themselves for the transition to a lower-carbon economy. In particular, opportunities exist for organizations to access new markets through collaborating with governments, development banks, small-scale local entrepreneurs, and community groups in developed and developing countries as they work to shift to a lower-carbon economy.²⁹ New opportunities can also be captured through underwriting or financing green bonds and infrastructure (e.g., low-emission energy production, energy efficiency, grid connectivity, or transport networks).

e. Resilience

The concept of climate resilience involves organizations developing adaptive capacity to respond to climate change to better manage the associated risks and seize opportunities, including the ability to respond to transition risks and physical risks. Opportunities include improving efficiency, designing new production processes, and developing new products. Opportunities related to resilience may be especially relevant for organizations with long-lived fixed assets or extensive supply or distribution networks; those that depend critically on utility and infrastructure networks or natural resources in their value chain; and those that may require longer-term financing and investment.

²⁴ Environmental Protection Agency Victoria (EPA Victoria), "[Resource Efficiency Case Studies: Lower your Impact.](#)"

²⁵ As described by Pearce and Turner, circular economy refers to a system in which resource input and waste, emission, and energy leakage are minimized. This can be achieved through long-lasting design, maintenance, repair, reuse, remanufacturing, refurbishing, and recycling. This is in contrast to a linear economy which is a "take, make, dispose" model of production.

²⁶ IEA, "[Global energy investment down 8% in 2015 with flows signaling move towards cleaner energy,](#)" September 14, 2016.

²⁷ Frankfurt School-United Nations Environmental Programme Centre and Bloomberg New Energy Finance, "[Global Trends in Renewable Energy Investment 2017,](#)" 2017.

²⁸ Ceres, "[Power Forward 3.0: How the largest US companies are capturing business value while addressing climate change,](#)" 2017.

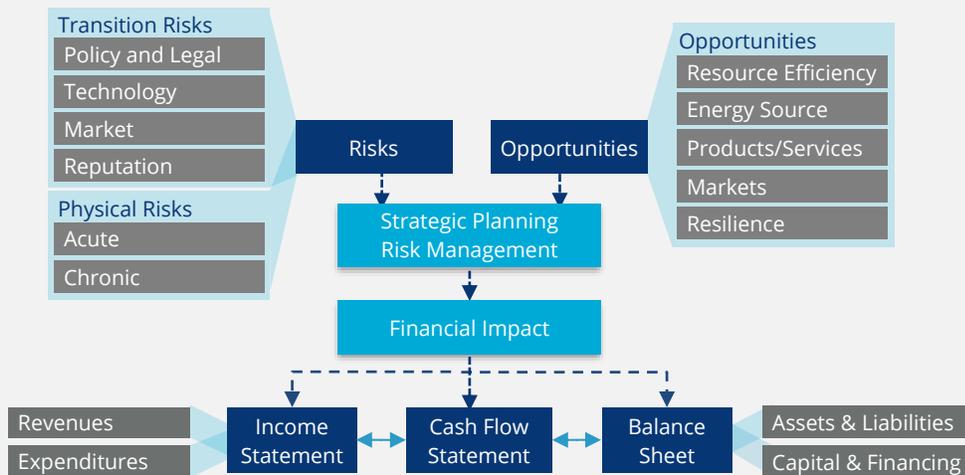
²⁹ G20 Green Finance Study Group. *G20 Green Finance Synthesis Report*. 2016. The proposal to launch the Green Finance Study Group was adopted by the G20 Finance Ministers and Central Bank Deputies in December 2015.

3. Financial Impacts

Better disclosure of the financial impacts of climate-related risks and opportunities on an organization is a key goal of the Task Force’s work. In order to make more informed financial decisions, investors, lenders, and insurance underwriters need to understand how climate-related risks and opportunities are likely to impact an organization’s future financial position as reflected in its income statement, cash flow statement, and balance sheet as outlined in Figure 1. While climate change affects nearly all economic sectors, the level and type of exposure and the impact of climate-related risks differs by sector, industry, geography, and organization.³⁰

Figure 1

Climate-Related Risks, Opportunities, and Financial Impact



A
Introduction

B
Climate-Related Risks,
Opportunities, and
Financial Impacts

C
Recommendations and
Guidance

D
Scenario Analysis and
Climate-Related Issues

E
Key Issues Considered and
Areas for Further Work

F
Conclusion

Appendices

Fundamentally, the financial impacts of climate-related issues on an organization are driven by the specific climate-related risks and opportunities to which the organization is exposed and its strategic and risk management decisions on managing those risks (i.e., mitigate, transfer, accept, or control) and seizing those opportunities. The Task Force has identified four major categories, described in Figure 2 (p. 9), through which climate-related risks and opportunities may affect an organization’s current and future financial positions.

The financial impacts of climate-related issues on organizations are not always clear or direct, and, for many organizations, identifying the issues, assessing potential impacts, and ensuring material issues are reflected in financial filings may be challenging. Key reasons for this are likely because of (1) limited knowledge of climate-related issues within organizations; (2) the tendency to focus mainly on near-term risks without paying adequate attention to risks that may arise in the longer term; and (3) the difficulty in quantifying the financial effects of climate-related issues.³¹ To assist organizations in identifying climate-related issues and their impacts, the Task Force developed Table 1 (p. 10), which provides examples of climate-related risks and their potential financial impacts, and Table 2 (p. 11), which provides examples of climate-related opportunities and their potential financial impacts. In addition, Section A.4 in the Annex provides more information on the major categories of financial impacts—revenues, expenditures, assets and liabilities, and capital and financing—that are likely to be most relevant for specific industries.

³⁰ SASB research demonstrates that 72 out of 79 Sustainable Industry Classification System (SICS™) industries are significantly affected in some way by climate-related risk.

³¹ World Business Council for Sustainable Development, “Sustainability and enterprise risk management: The first step towards integration.” January 18, 2017.

Figure 2

Major Categories of Financial Impact

Income Statement	Balance Sheet
<p>Revenues. Transition and physical risks may affect demand for products and services. Organizations should consider the potential impact on revenues and identify potential opportunities for enhancing or developing new revenues. In particular, given the emergence and likely growth of carbon pricing as a mechanism to regulate emissions, it is important for affected industries to consider the potential impacts of such pricing on business revenues.</p> <p>Expenditures. An organization's response to climate-related risks and opportunities may depend, in part, on the organization's cost structure. Lower-cost suppliers may be more resilient to changes in cost resulting from climate-related issues and more flexible in their ability to address such issues. By providing an indication of their cost structure and flexibility to adapt, organizations can better inform investors about their investment potential.</p> <p>It is also helpful for investors to understand capital expenditure plans and the level of debt or equity needed to fund these plans. The resilience of such plans should be considered bearing in mind organizations' flexibility to shift capital and the willingness of capital markets to fund organizations exposed to significant levels of climate-related risks. Transparency of these plans may provide greater access to capital markets or improved financing terms.</p>	<p>Assets and Liabilities. Supply and demand changes from changes in policies, technology, and market dynamics related to climate change could affect the valuation of organizations' assets and liabilities. Use of long-lived assets and, where relevant, reserves may be particularly affected by climate-related issues. It is important for organizations to provide an indication of the potential climate-related impact on their assets and liabilities, particularly long-lived assets. This should focus on existing and committed future activities and decisions requiring new investment, restructuring, write-downs, or impairment.</p> <p>Capital and Financing. Climate-related risks and opportunities may change the profile of an organization's debt and equity structure, either by increasing debt levels to compensate for reduced operating cash flows or for new capital expenditures or R&D. It may also affect the ability to raise new debt or refinance existing debt, or reduce the tenor of borrowing available to the organization. There could also be changes to capital and reserves from operating losses, asset write-downs, or the need to raise new equity to meet investment.</p>

The Task Force encourages organizations to undertake both historical and forward-looking analyses when considering the potential financial impacts of climate change, with greater focus on forward-looking analyses as the efforts to mitigate and adapt to climate change are without historical precedent. This is one of the reasons the Task Force believes scenario analysis is important for organizations to consider incorporating into their strategic planning or risk management practices.

A
Introduction

B
Climate-Related Risks, Opportunities, and Financial Impacts

C
Recommendations and Guidance

D
Scenario Analysis and Climate-Related Issues

E
Key Issues Considered and Areas for Further Work

F
Conclusion

Appendices

Table 1

Examples of Climate-Related Risks and Potential Financial Impacts

Type	Climate-Related Risks ³²	Potential Financial Impacts
Transition Risks	Policy and Legal <ul style="list-style-type: none"> – Increased pricing of GHG emissions – Enhanced emissions-reporting obligations – Mandates on and regulation of existing products and services – Exposure to litigation 	<ul style="list-style-type: none"> – Increased operating costs (e.g., higher compliance costs, increased insurance premiums) – Write-offs, asset impairment, and early retirement of existing assets due to policy changes – Increased costs and/or reduced demand for products and services resulting from fines and judgments
	Technology <ul style="list-style-type: none"> – Substitution of existing products and services with lower emissions options – Unsuccessful investment in new technologies – Costs to transition to lower emissions technology 	<ul style="list-style-type: none"> – Write-offs and early retirement of existing assets – Reduced demand for products and services – Research and development (R&D) expenditures in new and alternative technologies – Capital investments in technology development – Costs to adopt/deploy new practices and processes
	Market <ul style="list-style-type: none"> – Changing customer behavior – Uncertainty in market signals – Increased cost of raw materials 	<ul style="list-style-type: none"> – Reduced demand for goods and services due to shift in consumer preferences – Increased production costs due to changing input prices (e.g., energy, water) and output requirements (e.g., waste treatment) – Abrupt and unexpected shifts in energy costs – Change in revenue mix and sources, resulting in decreased revenues – Re-pricing of assets (e.g., fossil fuel reserves, land valuations, securities valuations)
	Reputation <ul style="list-style-type: none"> – Shifts in consumer preferences – Stigmatization of sector – Increased stakeholder concern or negative stakeholder feedback 	<ul style="list-style-type: none"> – Reduced revenue from decreased demand for goods/services – Reduced revenue from decreased production capacity (e.g., delayed planning approvals, supply chain interruptions) – Reduced revenue from negative impacts on workforce management and planning (e.g., employee attraction and retention) – Reduction in capital availability
	Acute <ul style="list-style-type: none"> – Increased severity of extreme weather events such as cyclones and floods 	<ul style="list-style-type: none"> – Reduced revenue from decreased production capacity (e.g., transport difficulties, supply chain interruptions) – Reduced revenue and higher costs from negative impacts on workforce (e.g., health, safety, absenteeism) – Write-offs and early retirement of existing assets (e.g., damage to property and assets in “high-risk” locations)
	Chronic <ul style="list-style-type: none"> – Changes in precipitation patterns and extreme variability in weather patterns – Rising mean temperatures – Rising sea levels 	<ul style="list-style-type: none"> – Increased operating costs (e.g., inadequate water supply for hydroelectric plants or to cool nuclear and fossil fuel plants) – Increased capital costs (e.g., damage to facilities) – Reduced revenues from lower sales/output – Increased insurance premiums and potential for reduced availability of insurance on assets in “high-risk” locations
	Physical Risks	

A
Introduction

B
Climate-Related Risks, Opportunities, and Financial Impacts

C
Recommendations and Guidance

D
Scenario Analysis and Climate-Related Issues

E
Key Issues Considered and Areas for Further Work

F
Conclusion

Appendices

³² The sub-category risks described under each major category are not mutually exclusive, and some overlap exists.

Table 2

Examples of Climate-Related Opportunities and Potential Financial Impacts

Type	Climate-Related Opportunities ³³	Potential Financial Impacts
Resource Efficiency	<ul style="list-style-type: none"> – Use of more efficient modes of transport – Use of more efficient production and distribution processes – Use of recycling – Move to more efficient buildings – Reduced water usage and consumption 	<ul style="list-style-type: none"> – Reduced operating costs (e.g., through efficiency gains and cost reductions) – Increased production capacity, resulting in increased revenues – Increased value of fixed assets (e.g., highly rated energy-efficient buildings) – Benefits to workforce management and planning (e.g., improved health and safety, employee satisfaction) resulting in lower costs
Energy Source	<ul style="list-style-type: none"> – Use of lower-emission sources of energy – Use of supportive policy incentives – Use of new technologies – Participation in carbon market – Shift toward decentralized energy generation 	<ul style="list-style-type: none"> – Reduced operational costs (e.g., through use of lowest cost abatement) – Reduced exposure to future fossil fuel price increases – Reduced exposure to GHG emissions and therefore less sensitivity to changes in cost of carbon – Returns on investment in low-emission technology – Increased capital availability (e.g., as more investors favor lower-emissions producers) – Reputational benefits resulting in increased demand for goods/services
Products and Services	<ul style="list-style-type: none"> – Development and/or expansion of low emission goods and services – Development of climate adaptation and insurance risk solutions – Development of new products or services through R&D and innovation – Ability to diversify business activities – Shift in consumer preferences 	<ul style="list-style-type: none"> – Increased revenue through demand for lower emissions products and services – Increased revenue through new solutions to adaptation needs (e.g., insurance risk transfer products and services) – Better competitive position to reflect shifting consumer preferences, resulting in increased revenues
Markets	<ul style="list-style-type: none"> – Access to new markets – Use of public-sector incentives – Access to new assets and locations needing insurance coverage 	<ul style="list-style-type: none"> – Increased revenues through access to new and emerging markets (e.g., partnerships with governments, development banks) – Increased diversification of financial assets (e.g., green bonds and infrastructure)
Resilience	<ul style="list-style-type: none"> – Participation in renewable energy programs and adoption of energy-efficiency measures – Resource substitutes/diversification 	<ul style="list-style-type: none"> – Increased market valuation through resilience planning (e.g., infrastructure, land, buildings) – Increased reliability of supply chain and ability to operate under various conditions – Increased revenue through new products and services related to ensuring resiliency

A
Introduction

B
Climate-Related Risks,
Opportunities, and
Financial Impacts

C
Recommendations and
Guidance

D
Scenario Analysis and
Climate-Related Issues

E
Key Issues Considered and
Areas for Further Work

F
Conclusion

Appendices

³³ The opportunity categories are not mutually exclusive, and some overlap exists.

C Recommendations and Guidance

C Recommendations and Guidance

1. Overview of Recommendations and Guidance

To fulfill its remit, the Task Force developed four widely adoptable recommendations on climate-related financial disclosures applicable to organizations across sectors and jurisdictions. In developing its recommendations, the Task Force considered the challenges for preparers of disclosures as well as the benefits of such disclosures to investors, lenders, and insurance underwriters. To achieve this balance, the Task Force engaged in significant outreach and consultation with users and preparers of disclosures and drew upon existing climate-related disclosure regimes. The insights gained from the outreach and consultations directly informed the development of the recommendations.

The Task Force structured its recommendations around four thematic areas that represent core elements of how organizations operate—governance, strategy, risk management, and metrics and targets. The four overarching recommendations are supported by key climate-related financial disclosures—referred to as recommended disclosures—that build out the framework with information that will help investors and others understand how reporting organizations think about and assess climate-related risks and opportunities. In addition, there is guidance to support all organizations in developing climate-related financial disclosures consistent with the recommendations and recommended disclosures as well as *supplemental* guidance for specific sectors. The structure is depicted in [Figure 3](#) below, and the Task Force's recommendations and supporting recommended disclosures are presented in [Figure 4](#) (p. 14).

- A Introduction
- B Climate-Related Risks, Opportunities, and Financial Impacts
- C Recommendations and Guidance**
- D Scenario Analysis and Climate-Related Issues
- E Key Issues Considered and Areas for Further Work
- F Conclusion
- Appendices



The Task Force's supplemental guidance is included in the [Annex](#) and covers the financial sector as well as non-financial industries potentially most affected by climate change and the transition to a lower-carbon economy (referred to as non-financial groups). The supplemental guidance provides these preparers with additional context and suggestions for implementing the recommended disclosures and should be used in conjunction with the guidance for all sectors.

Figure 4

Recommendations and Supporting Recommended Disclosures

Governance	Strategy	Risk Management	Metrics and Targets
<p>Disclose the organization's governance around climate-related risks and opportunities.</p>	<p>Disclose the actual and potential impacts of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning where such information is material.</p>	<p>Disclose how the organization identifies, assesses, and manages climate-related risks.</p>	<p>Disclose the metrics and targets used to assess and manage relevant climate-related risks and opportunities where such information is material.</p>
<p>Recommended Disclosures</p>	<p>Recommended Disclosures</p>	<p>Recommended Disclosures</p>	<p>Recommended Disclosures</p>
<p>a) Describe the board's oversight of climate-related risks and opportunities.</p>	<p>a) Describe the climate-related risks and opportunities the organization has identified over the short, medium, and long term.</p>	<p>a) Describe the organization's processes for identifying and assessing climate-related risks.</p>	<p>a) Disclose the metrics used by the organization to assess climate-related risks and opportunities in line with its strategy and risk management process.</p>
<p>b) Describe management's role in assessing and managing climate-related risks and opportunities.</p>	<p>b) Describe the impact of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning.</p>	<p>b) Describe the organization's processes for managing climate-related risks.</p>	<p>b) Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks.</p>
	<p>c) Describe the resilience of the organization's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario.</p>	<p>c) Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organization's overall risk management.</p>	<p>c) Describe the targets used by the organization to manage climate-related risks and opportunities and performance against targets.</p>

Figure 5 provides a mapping of the recommendations (governance, strategy, risk management, and metrics and targets) and recommended disclosures (a, b, c) for which supplemental guidance was developed for the financial sector and non-financial groups.

- Financial Sector.** The Task Force developed supplemental guidance for the financial sector, which it organized into four major industries largely based on activities performed. The four industries are banks (lending), insurance companies (underwriting), asset managers (asset management), and asset owners, which include public- and private-sector pension plans, endowments, and foundations (investing).³⁴ The Task Force believes that disclosures by the financial sector could foster an early assessment of climate-related risks and opportunities, improve pricing of climate-related risks, and lead to more informed capital allocation decisions.
- Non-Financial Groups.** The Task Force developed supplemental guidance for non-financial industries that account for the largest proportion of GHG emissions, energy usage, and water usage. These industries were organized into four groups (i.e., non-financial groups)—Energy; Materials and Buildings; Transportation; and Agriculture, Food, and Forest Products—based on similarities in climate-related risks as shown in Box 2 (p. 16). While this supplemental guidance focuses on a subset of non-financial industries, organizations in other industries with similar business activities may wish to review and consider the issues and topics contained in the supplemental guidance.

A
Introduction

B
Climate-Related Risks,
Opportunities, and
Financial Impacts

C
Recommendations and
Guidance

D
Scenario Analysis and
Climate-Related Issues

E
Key Issues Considered and
Areas for Further Work

F
Conclusion

Appendices

Figure 5

Supplemental Guidance for Financial Sector and Non-Financial Groups

Industries and Groups		Governance		Strategy			Risk Management			Metrics and Targets		
		a)	b)	a)	b)	c)	a)	b)	c)	a)	b)	c)
Financial	Banks			■			■			■		
	Insurance Companies				■	■	■	■		■		
	Asset Owners				■	■	■	■		■	■	
	Asset Managers				■		■	■		■	■	
Non-Financial	Energy				■	■				■		
	Transportation				■	■				■		
	Materials and Buildings				■	■				■		
	Agriculture, Food, and Forest Products				■	■				■		

³⁴ The use of the term “insurance companies” in this report includes re-insurers.

Box 2

Determination of Non-Financial Groups

In an effort to focus supplemental guidance on those non-financial sectors and industries with the highest likelihood of climate-related financial impacts, the Task Force assessed three factors most likely to be affected by both transition risk (policy and legal, technology, market, and reputation) and physical risk (acute and chronic)—GHG emissions, energy usage, and water usage.

The underlying premise in using these three factors is that climate-related physical and transition risks will likely manifest themselves primarily and broadly in the form of constraints on GHG emissions, effects on energy production and usage, and effects on water availability, usage, and quality. Other factors, such as waste management and land use, are also important, but may not be as determinative across a wide range of industries or may be captured in one of the primary categories.

In taking this approach, the Task Force consulted a number of sources regarding the ranking of various sectors and industries according to these three factors. The various rankings were used to determine an overall set of sectors and industries that have significant exposure to transition or physical risks related to GHG emissions, energy, or water. The sectors and industries were grouped into four categories of industries that have similar economic activities and climate-related exposures.

These four groups and their associated industries are intended to be indicative of the economic activities associated with these industries rather than definitive industry categories. Other industries with similar activities and climate-related exposures should consider the supplemental guidance as well.

The Task Force validated its approach using a variety of sources, including:

- 1 The TCFD Phase I report public consultation, soliciting more than 200 responses which ranked Energy, Utilities, Materials, Industrials and Consumer Staples/Discretionary, in that order, as the Global Industry Classification Standard (GICS) sectors most important for disclosure guidelines to cover.
- 2 Numerous sector-specific disclosure guidance documents to understand various breakdowns by economic activity, sector, and industries, including from the following sources: CDP, GHG Protocol, Global Real Estate Sustainability Benchmark (GRESB), Global Reporting Initiative (GRI), Institutional Investors Group on Climate Change (IIGCC), IPIECA (the global oil and gas industry association for environmental and social issues), and the Sustainability Accounting Standards Board (SASB).
- 3 The Intergovernmental Panel on Climate Change (IPCC) report “Climate Change 2014 – Mitigation of Climate Change” that provides an analysis of global direct and indirect emissions by economic sector. The IPCC analysis highlights the dominant emissions-producing sectors as Energy; Industry; Agriculture, Forestry, and Other Land Use; and Transportation and Buildings (Commercial and Residential).
- 4 Research and documentation from non-governmental organizations (NGOs) and industry organizations that provide information on which industries have the highest exposures to climate change, including those from Cambridge Institute of Sustainability Leadership, China’s National Development and Reform Commission (NDRC), Environmental Resources Management (ERM), IEA, Moody’s, S&P Global Ratings, and WRI/UNEPFI.

Based on its assessment, the Task Force identified the four groups and their associated industries, listed in the table below, as those that would most benefit from supplemental guidance.

Energy	Transportation	Materials and Buildings	Agriculture, Food, and Forest Products
<ul style="list-style-type: none"> – Oil and Gas – Coal – Electric Utilities 	<ul style="list-style-type: none"> – Air Freight – Passenger Air Transportation – Maritime Transportation – Rail Transportation – Trucking Services – Automobiles and Components 	<ul style="list-style-type: none"> – Metals and Mining – Chemicals – Construction Materials – Capital Goods – Real Estate Management and Development 	<ul style="list-style-type: none"> – Beverages – Agriculture – Packaged Foods and Meats – Paper and Forest Products

2. Implementing the Recommendations

a. Scope of Coverage

To promote more informed investing, lending, and insurance underwriting decisions, the Task Force recommends all organizations with public debt or equity implement its recommendations. Because climate-related issues are relevant for other types of organizations as well, the Task Force encourages all organizations to implement these recommendations. In particular, the Task Force believes that asset managers and asset owners, including public- and private-sector pension plans, endowments, and foundations, should implement its recommendations so that their clients and beneficiaries may better understand the performance of their assets, consider the risks of their investments, and make more informed investment choices.

b. Location of Disclosures and Materiality

The Task Force recommends that organizations provide climate-related financial disclosures in their mainstream (i.e., public) annual financial filings.³⁵ In most G20 jurisdictions, public companies have a legal obligation to disclose material information in their financial filings—including material climate-related information; and the Task Force's recommendations are intended to help organizations meet existing disclosure obligations more effectively.³⁶ The Task Force's recommendations were developed to apply broadly across sectors and jurisdictions and should not be seen as superseding national disclosure requirements. Importantly, organizations should make financial disclosures in accordance with their national disclosure requirements. If certain elements of the recommendations are incompatible with national disclosure requirements for financial filings, the Task Force encourages organizations to disclose those elements in other official company reports that are issued at least annually, widely distributed and available to investors and others, and subject to internal governance processes that are the same or substantially similar to those used for financial reporting.

The Task Force recognizes that most information included in financial filings is subject to a materiality assessment. However, because climate-related risk is a non-diversifiable risk that affects nearly all industries, many investors believe it requires special attention. For example, in assessing organizations' financial and operating results, many investors want insight into the governance and risk management context in which such results are achieved. The Task Force believes disclosures related to its Governance and Risk Management recommendations directly address this need for context and should be included in annual financial filings.

For disclosures related to the Strategy and Metrics and Targets recommendations, the Task Force believes organizations should provide such information in annual financial filings when the information is deemed material. Certain organizations—those in the four non-financial groups that have more than one billion U.S. dollar equivalent (USDE) in annual revenue—should consider disclosing such information in other reports when the information is not deemed material and not included in financial filings.³⁷ Because these organizations are more likely than others to be financially impacted over time, investors are interested in monitoring how these organizations' strategies evolve.

³⁵ Financial filings refer to the annual reporting packages in which organizations are required to deliver their audited financial results under the corporate, compliance, or securities laws of the jurisdictions in which they operate. While reporting requirements differ internationally, financial filings generally contain financial statements and other information such as governance statements and management commentary.

³⁶ The Task Force encourages organizations where climate-related issues could be material in the future to begin disclosing climate-related financial information outside financial filings to facilitate the incorporation of such information into financial filings once climate-related issues are determined to be material.

³⁷ The Task Force chose a one billion USDE annual revenue threshold because it captures organizations responsible for over 90 percent of Scope 1 and 2 GHG emissions in the industries represented by the four non-financial groups (about 2,250 organizations out of roughly 15,000).

A	Introduction
B	Climate-Related Risks, Opportunities, and Financial Impacts
C	Recommendations and Guidance
D	Scenario Analysis and Climate-Related Issues
E	Key Issues Considered and Areas for Further Work
F	Conclusion
	Appendices

The Task Force recognizes reporting by asset managers and asset owners is intended to satisfy the needs of clients, beneficiaries, regulators, and oversight bodies and follows a format that is generally different from corporate financial reporting. For purposes of adopting the Task Force's recommendations, asset managers and asset owners should use their existing means of financial reporting to their clients and beneficiaries where relevant and where feasible. Likewise, asset managers and asset owners should consider materiality in the context of their respective mandates and investment performance for clients and beneficiaries.³⁸

The Task Force believes that climate-related financial disclosures should be subject to appropriate internal governance processes. Since these disclosures should be included in annual financial filings, the governance processes should be similar to those used for existing financial reporting and would likely involve review by the chief financial officer and audit committee, as appropriate. The Task Force recognizes that some organizations may provide some or all of their climate-related financial disclosures in reports other than financial filings. This may occur because the organizations are not required to issue public financial reports (e.g., some asset managers and asset owners). In such situations, organizations should follow internal governance processes that are the same or substantially similar to those used for financial reporting.

- A Introduction
- B Climate-Related Risks, Opportunities, and Financial Impacts
- C Recommendations and Guidance**
- D Scenario Analysis and Climate-Related Issues
- E Key Issues Considered and Areas for Further Work
- F Conclusion
- Appendices

c. Principles for Effective Disclosures

To underpin its recommendations and help guide current and future developments in climate-related financial reporting, the Task Force developed seven principles for effective disclosure (Figure 6), which are described more fully in Appendix 3. When used by organizations in preparing their climate-related financial disclosures, these principles can help achieve high-quality and decision-useful disclosures that enable users to understand the impact of climate change on organizations. The Task Force encourages organizations to consider these principles as they develop climate-related financial disclosures.

The Task Force's disclosure principles are largely consistent with internationally accepted frameworks for financial reporting and are generally applicable to most providers of financial disclosures. The principles are designed to assist organizations in making clear the linkages between climate-related issues and their governance, strategy, risk management, and metrics and targets.

Figure 6

Principles for Effective Disclosures

- 1 Disclosures should represent relevant information
- 2 Disclosures should be specific and complete
- 3 Disclosures should be clear, balanced, and understandable
- 4 Disclosures should be consistent over time
- 5 Disclosures should be comparable among companies within a sector, industry, or portfolio
- 6 Disclosures should be reliable, verifiable, and objective
- 7 Disclosures should be provided on a timely basis

³⁸ The Task Force recommends asset managers and asset owners include carbon footprinting information in their reporting to clients and beneficiaries, as described in Section D of the Annex, to support the assessment and management of climate-related risks.

3. Guidance for All Sectors

The Task Force has developed guidance to support all organizations in developing climate-related financial disclosures consistent with its recommendations and recommended disclosures. The guidance assists preparers by providing context and suggestions for implementing the recommended disclosures. Recognizing organizations have differing levels of capacity to disclose under the recommendations, the guidance provides descriptions of the types of information that should be disclosed or considered.

a. Governance

Investors, lenders, insurance underwriters, and other users of climate-related financial disclosures (collectively referred to as “investors and other stakeholders”) are interested in understanding the role an organization’s board plays in overseeing climate-related issues as well as management’s role in assessing and managing those issues. Such information supports evaluations of whether climate-related issues receive appropriate board and management attention.

A
Introduction

B
Climate-Related Risks,
Opportunities, and
Financial Impacts

C
**Recommendations and
Guidance**

D
Scenario Analysis and
Climate-Related Issues

E
Key Issues Considered and
Areas for Further Work

F
Conclusion

Appendices

Governance

Disclose the organization’s governance around climate-related risks and opportunities.

Recommended Disclosure a)

Describe the board’s oversight of climate-related risks and opportunities.

Guidance for All Sectors

In describing the board’s oversight of climate-related issues, organizations should consider including a discussion of the following:

- processes and frequency by which the board and/or board committees (e.g., audit, risk, or other committees) are informed about climate-related issues,
- whether the board and/or board committees consider climate-related issues when reviewing and guiding strategy, major plans of action, risk management policies, annual budgets, and business plans as well as setting the organization’s performance objectives, monitoring implementation and performance, and overseeing major capital expenditures, acquisitions, and divestitures, and
- how the board monitors and oversees progress against goals and targets for addressing climate-related issues.

Recommended Disclosure b)

Describe management’s role in assessing and managing climate-related risks and opportunities.

Guidance for All Sectors

In describing management’s role related to the assessment and management of climate-related issues, organizations should consider including the following information:

- whether the organization has assigned climate-related responsibilities to management-level positions or committees; and, if so, whether such management positions or committees report to the board or a committee of the board and whether those responsibilities include assessing and/or managing climate-related issues,
- a description of the associated organizational structure(s),
- processes by which management is informed about climate-related issues, and
- how management (through specific positions and/or management committees) monitors climate-related issues.

b. Strategy

Investors and other stakeholders need to understand how climate-related issues may affect an organization's businesses, strategy, and financial planning over the short, medium, and long term. Such information is used to inform expectations about the future performance of an organization.

Strategy

Disclose the actual and potential impacts of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning where such information is material.

Recommended Disclosure a)

Describe the climate-related risks and opportunities the organization has identified over the short, medium, and long term.

Guidance for All Sectors

Organizations should provide the following information:

- a description of what they consider to be the relevant short-, medium-, and long-term time horizons, taking into consideration the useful life of the organization's assets or infrastructure and the fact that climate-related issues often manifest themselves over the medium and longer terms,
- a description of the specific climate-related issues for each time horizon (short, medium, and long term) that could have a material financial impact on the organization, and
- a description of the process(es) used to determine which risks and opportunities could have a material financial impact on the organization.

Organizations should consider providing a description of their risks and opportunities by sector and/or geography, as appropriate. In describing climate-related issues, organizations should refer to [Tables 1 and 2](#) (pp. 10-11).

Recommended Disclosure b)

Describe the impact of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning.

Guidance for All Sectors

Building on recommended disclosure (a), organizations should discuss how identified climate-related issues have affected their businesses, strategy, and financial planning.

Organizations should consider including the impact on their businesses and strategy in the following areas:

- Products and services
- Supply chain and/or value chain
- Adaptation and mitigation activities
- Investment in research and development
- Operations (including types of operations and location of facilities)

Organizations should describe how climate-related issues serve as an input to their financial planning process, the time period(s) used, and how these risks and opportunities are prioritized. Organizations' disclosures should reflect a holistic picture of the interdependencies among the factors that affect their ability to create value over time. Organizations should also consider including in their disclosures the impact on financial planning in the following areas:

- Operating costs and revenues
- Capital expenditures and capital allocation
- Acquisitions or divestments
- Access to capital

If climate-related scenarios were used to inform the organization's strategy and financial planning, such scenarios should be described.

A	Introduction
B	Climate-Related Risks, Opportunities, and Financial Impacts
C	Recommendations and Guidance
D	Scenario Analysis and Climate-Related Issues
E	Key Issues Considered and Areas for Further Work
F	Conclusion
	Appendices

Strategy

Disclose the actual and potential impacts of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning where such information is material.

Recommended Disclosure c)

Describe the resilience of the organization's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario.

Guidance for All Sectors

Organizations should describe how resilient their strategies are to climate-related risks and opportunities, taking into consideration a transition to a lower-carbon economy consistent with a 2°C or lower scenario and, where relevant to the organization, scenarios consistent with increased physical climate-related risks.

Organizations should consider discussing:

- where they believe their strategies may be affected by climate-related risks and opportunities;
- how their strategies might change to address such potential risks and opportunities; and
- the climate-related scenarios and associated time horizon(s) considered.

Refer to [Section D](#) for information on applying scenarios to forward-looking analysis.

c. Risk Management

Investors and other stakeholders need to understand how an organization's climate-related risks are identified, assessed, and managed and whether those processes are integrated into existing risk management processes. Such information supports users of climate-related financial disclosures in evaluating the organization's overall risk profile and risk management activities.

Risk Management

Disclose how the organization identifies, assesses, and manages climate-related risks.

Recommended Disclosure a)

Describe the organization's processes for identifying and assessing climate-related risks.

Guidance for All Sectors

Organizations should describe their risk management processes for identifying and assessing climate-related risks. An important aspect of this description is how organizations determine the relative significance of climate-related risks in relation to other risks.

Organizations should describe whether they consider existing and emerging regulatory requirements related to climate change (e.g., limits on emissions) as well as other relevant factors considered.

Organizations should also consider disclosing the following:

- processes for assessing the potential size and scope of identified climate-related risks and
- definitions of risk terminology used or references to existing risk classification frameworks used.

Recommended Disclosure b)

Describe the organization's processes for managing climate-related risks.

Guidance for All Sectors

Organizations should describe their processes for managing climate-related risks, including how they make decisions to mitigate, transfer, accept, or control those risks. In addition, organizations should describe their processes for prioritizing climate-related risks, including how materiality determinations are made within their organizations.

In describing their processes for managing climate-related risks, organizations should address the risks included in [Tables 1 and 2](#) (pp. 10-11), as appropriate.

A
Introduction

B
Climate-Related Risks,
Opportunities, and
Financial Impacts

C
Recommendations and
Guidance

D
Scenario Analysis and
Climate-Related Issues

E
Key Issues Considered and
Areas for Further Work

F
Conclusion

Appendices

Risk Management

Disclose how the organization identifies, assesses, and manages climate-related risks.

Recommended Disclosure c)

Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organization's overall risk management.

Guidance for All Sectors

Organizations should describe how their processes for identifying, assessing, and managing climate-related risks are integrated into their overall risk management.

d. Metrics and Targets

Investors and other stakeholders need to understand how an organization measures and monitors its climate-related risks and opportunities. Access to the metrics and targets used by an organization allows investors and other stakeholders to better assess the organization's potential risk-adjusted returns, ability to meet financial obligations, general exposure to climate-related issues, and progress in managing or adapting to those issues. They also provide a basis upon which investors and other stakeholders can compare organizations within a sector or industry.

Metrics and Targets

Disclose the metrics and targets used to assess and manage relevant climate-related risks and opportunities where such information is material.

Recommended Disclosure a)

Disclose the metrics used by the organization to assess climate-related risks and opportunities in line with its strategy and risk management process.

Guidance for All Sectors

Organizations should provide the key metrics used to measure and manage climate-related risks and opportunities, as described in [Tables 1 and 2](#) (pp. 10-11). Organizations should consider including metrics on climate-related risks associated with water, energy, land use, and waste management where relevant and applicable.

Where climate-related issues are material, organizations should consider describing whether and how related performance metrics are incorporated into remuneration policies.

Where relevant, organizations should provide their internal carbon prices as well as climate-related opportunity metrics such as revenue from products and services designed for a lower-carbon economy.

Metrics should be provided for historical periods to allow for trend analysis. In addition, where not apparent, organizations should provide a description of the methodologies used to calculate or estimate climate-related metrics.

Recommended Disclosure b)

Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks.

Guidance for All Sectors

Organizations should provide their Scope 1 and Scope 2 GHG emissions and, if appropriate, Scope 3 GHG emissions and the related risks.³⁹

GHG emissions should be calculated in line with the GHG Protocol methodology to allow for aggregation and comparability across organizations and jurisdictions.⁴⁰ As appropriate, organizations should consider providing related, generally accepted industry-specific GHG efficiency ratios.⁴¹

GHG emissions and associated metrics should be provided for historical

A
Introduction

B
Climate-Related Risks,
Opportunities, and
Financial Impacts

C
Recommendations and
Guidance

D
Scenario Analysis and
Climate-Related Issues

E
Key Issues Considered and
Areas for Further Work

F
Conclusion

Appendices

³⁹ Emissions are a prime driver of rising global temperatures and, as such, are a key focal point of policy, regulatory, market, and technology responses to limit climate change. As a result, organizations with significant emissions are likely to be impacted more significantly by transition risk than other organizations. In addition, current or future constraints on emissions, either directly by emission restrictions or indirectly through carbon budgets, may impact organizations financially.

⁴⁰ While challenges remain, the GHG Protocol methodology is the most widely recognized and used international standard for calculating GHG emissions. Organizations may use national reporting methodologies if they are consistent with the GHG Protocol methodology.

⁴¹ For industries with high energy consumption, metrics related to emission intensity are important to provide. For example, emissions per unit of economic output (e.g., unit of production, number of employees, or value-added) is widely used. See the [Annex](#) for examples of metrics.

Metrics and Targets

Disclose the metrics and targets used to assess and manage relevant climate-related risks and opportunities where such information is material.

periods to allow for trend analysis. In addition, where not apparent, organizations should provide a description of the methodologies used to calculate or estimate the metrics.

Recommended Disclosure c)

Describe the targets used by the organization to manage climate-related risks and opportunities and performance against targets.

Guidance for All Sectors

Organizations should describe their key climate-related targets such as those related to GHG emissions, water usage, energy usage, etc., in line with anticipated regulatory requirements or market constraints or other goals. Other goals may include efficiency or financial goals, financial loss tolerances, avoided GHG emissions through the entire product life cycle, or net revenue goals for products and services designed for a lower-carbon economy.

In describing their targets, organizations should consider including the following:

- whether the target is absolute or intensity based,
- time frames over which the target applies,
- base year from which progress is measured, and
- key performance indicators used to assess progress against targets.

Where not apparent, organizations should provide a description of the methodologies used to calculate targets and measures.

A
Introduction

B
Climate-Related Risks,
Opportunities, and
Financial Impacts

C
**Recommendations and
Guidance**

D
Scenario Analysis and
Climate-Related Issues

E
Key Issues Considered and
Areas for Further Work

F
Conclusion

Appendices

D Scenario Analysis and Climate- Related Issues

D Scenario Analysis and Climate-Related Issues

Some organizations are affected by risks associated with climate change today. However, for many organizations, the most significant effects of climate change are likely to emerge over the medium to longer term and their timing and magnitude are uncertain. This uncertainty presents challenges for individual organizations in understanding the potential effects of climate change on their businesses, strategies, and financial performance. To appropriately incorporate the potential effects in their planning processes, organizations need to consider how their climate-related risks and opportunities may evolve and the potential implications under different conditions. One way to do this is through scenario analysis.

Scenario analysis is a well-established method for developing strategic plans that are more flexible or robust to a range of plausible future states. The use of scenario analysis for assessing the potential business implications of climate-related risks and opportunities, however, is relatively recent. While several organizations use scenario analysis to assess the potential impact of climate change on their businesses, only a subset have disclosed their assessment of forward-looking implications publicly, either in sustainability reports or financial filings.⁴²

The disclosure of organizations' forward-looking assessments of climate-related issues is important for investors and other stakeholders in understanding how vulnerable individual organizations are to transition and physical risks and how such vulnerabilities are or would be addressed. As a result, the Task Force believes that organizations should use scenario analysis to assess potential business, strategic, and financial implications of climate-related risks and opportunities and disclose those, as appropriate, in their annual financial filings.

Scenario analysis is an important and useful tool for understanding the strategic implications of climate-related risks and opportunities.

This section provides additional information on using scenario analysis as a tool to assess potential implications of climate-related risks and opportunities. In addition, a technical supplement, [The Use of Scenario Analysis in Disclosure of Climate-Related Risks and Opportunities](#), on the Task Force's website provides further information on the types of climate-related scenarios, the application of scenario analysis, and the key challenges in implementing scenario analysis.

1. Overview of Scenario Analysis

Scenario analysis is a process for identifying and assessing the potential implications of a range of plausible future states under conditions of uncertainty. Scenarios are hypothetical constructs and not designed to deliver precise outcomes or forecasts. Instead, scenarios provide a way for organizations to consider how the future might look if certain trends continue or certain conditions are met. In the case of climate change, for example, scenarios allow an organization to explore and develop an understanding of how various combinations of climate-related risks, both transition and physical risks, may affect its businesses, strategies, and financial performance over time.

Scenario analysis can be qualitative, relying on descriptive, written narratives, or quantitative, relying on numerical data and models, or some combination of both. Qualitative scenario analysis

⁴² Some organizations in the energy sector and some large investors have made public disclosures describing the results of their climate-related scenario analysis, including discussing how the transition might affect their current portfolios. In some instances, this information was published in financial filings.

explores relationships and trends for which little or no numerical data is available, while quantitative scenario analysis can be used to assess measurable trends and relationships using models and other analytical techniques.⁴³ Both rely on scenarios that are internally consistent, logical, and based on explicit assumptions and constraints that result in plausible future development paths.

As summarized in [Figure 7](#), there are several reasons why scenario analysis is a useful tool for organizations in assessing the potential implications of climate-related risks and opportunities.

Figure 7

Reasons to Consider Using Scenario Analysis for Climate Change

- 1 Scenario analysis can help organizations consider issues, like climate change, that have the following characteristics:
 - Possible outcomes that are highly uncertain (e.g., the **physical** response of the climate and ecosystems to higher levels of GHG emissions in the atmosphere)
 - Outcomes that will play out over the medium to longer term (e.g., timing, distribution, and mechanisms of the **transition** to a lower-carbon economy)
 - Potential disruptive effects that, due to uncertainty and complexity, are substantial
- 2 Scenario analysis can enhance organizations' strategic conversations about the future by considering, in a more structured manner, what may unfold that is different from business-as-usual. Importantly, it broadens decision makers' thinking across a range of plausible scenarios, including scenarios where climate-related impacts can be significant.
- 3 Scenario analysis can help organizations frame and assess the potential range of plausible business, strategic, and financial impacts from climate change and the associated management actions that may need to be considered in strategic and financial plans. This may lead to more robust strategies under a wider range of uncertain future conditions.
- 4 Scenario analysis can help organizations identify indicators to monitor the external environment and better recognize when the environment is moving toward a different scenario state (or to a different stage along a scenario path). This allows organizations the opportunity to reassess and adjust their strategies and financial plans accordingly.⁴⁴
- 5 Scenario analysis can assist investors in understanding the robustness of organizations' strategies and financial plans and in comparing risks and opportunities across organizations.

A
Introduction

B
Climate-Related Risks,
Opportunities, and
Financial Impacts

C
Recommendations and
Guidance

D
**Scenario Analysis and
Climate-Related Issues**

E
Key Issues Considered and
Areas for Further Work

F
Conclusion

Appendices

2. Exposure to Climate-Related Risks

The effects of climate change on specific sectors, industries, and individual organizations are highly variable. It is important, therefore, that all organizations consider applying a basic level of scenario analysis in their strategic planning and risk management processes. Organizations more significantly affected by transition risk (e.g., fossil fuel-based industries, energy-intensive manufacturers, and transportation activities) and/or physical risk (e.g., agriculture, transportation

⁴³ For example, see Mark D. A. Rounsevell, Marc J. Metzger, *Developing qualitative scenario storylines for environmental change assessment*, WIREs Climate Change 2010, 1: 606-619. doi: 10.1002/wcc.63, 2010 and Oliver Fricko, et. al., *Energy sector water use implications of a 2° C climate policy*, Environmental Research Letters, 11: 1-10, 2016.

⁴⁴ J.N. Maack, *Scenario analysis: a tool for task managers*, Social Analysis: selected tools and techniques, Social Development Papers, Number 36, the World Bank, June 2001, Washington, DC.

and building infrastructure, insurance, and tourism) should consider a more in-depth application of scenario analysis.

a. Exposure to Transition Risks

Transition risk scenarios are particularly relevant for resource-intensive organizations with high GHG emissions within their value chains, where policy actions, technology, or market changes aimed at emissions reductions, energy efficiency, subsidies or taxes, or other constraints or incentives may have a particularly direct effect.

A key type of transition risk scenario is a so-called 2°C scenario, which lays out a pathway and an emissions trajectory consistent with holding the increase in the global average temperature to 2°C above pre-industrial levels. In December 2015, nearly 200 governments agreed to strengthen the global response to the threat of climate change by “holding the increase in the global average temperature to well below 2°C above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5°C above pre-industrial levels,” referred to as the Paris Agreement.⁴⁵ As a result, a 2°C scenario provides a common reference point that is generally aligned with the objectives of the Paris Agreement and will support investors’ evaluation of the potential magnitude and timing of transition-related implications for individual organizations; across different organizations within a sector; and across different sectors.

b. Exposure to Physical Risks

A wide range of organizations are exposed to climate-related physical risks. Physical climate-related scenarios are particularly relevant for organizations exposed to acute or chronic climate change, such as those with:

- long-lived, fixed assets;
- locations or operations in climate-sensitive regions (e.g., coastal and flood zones);
- reliance on availability of water; and
- value chains exposed to the above.

Physical risk scenarios generally identify extreme weather threats of moderate or higher risk before 2030 and a larger number and range of physical threats between 2030 and 2050. Although most climate models deliver scenario results for physical impacts beyond 2050, organizations typically focus on the consequences of physical risk scenarios over shorter time frames that reflect the lifetimes of their respective assets or liabilities, which vary across sectors and organizations.

3. Recommended Approach to Scenario Analysis

The Task Force believes that all organizations exposed to climate-related risks should consider (1) using scenario analysis to help inform their strategic and financial planning processes and (2) disclosing how resilient their strategies are to a range of plausible climate-related scenarios. The Task Force recognizes that, for many organizations, scenario analysis is or would be a largely qualitative exercise. However, organizations with more significant exposure to transition risk and/or physical risk should undertake more rigorous qualitative and, if relevant, quantitative scenario analysis with respect to key drivers and trends that affect their operations.

A critical aspect of scenario analysis is the selection of a set of scenarios (not just one) that covers a reasonable variety of future outcomes, both favorable and unfavorable. In this regard, the Task Force recommends organizations use a 2°C or lower scenario in addition to two or three other

⁴⁵ United Nations Framework Convention on Climate Change. “[The Paris Agreement](#),” December 2015.

scenarios most relevant to their circumstances, such as scenarios related to Nationally Determined Contributions (NDCs), physical climate-related scenarios, or other challenging scenarios.⁴⁶ In jurisdictions where NDCs are a commonly accepted guide for an energy and/or emissions pathway, NDCs may constitute particularly useful scenarios to include in an organization's suite of scenarios for conducting climate-related scenario analysis.

For an organization in the initial stages of implementing scenario analysis or with limited exposure to climate-related issues, the Task Force recommends disclosing how resilient, qualitatively or directionally, the organization's strategy and financial plans may be to a range of relevant climate change scenarios. This information helps investors, lenders, insurance underwriters, and other stakeholders understand the robustness of an organization's forward-looking strategy and financial plans across a range of possible future states.

Organizations with more significant exposure to climate-related issues should consider disclosing key assumptions and pathways related to the scenarios they use to allow users to understand the analytical process and its limitations. In particular, it is important to understand the critical parameters and assumptions that materially affect the conclusions drawn. As a result, the Task Force believes that organizations with significant climate-related exposures should *strive* to disclose the elements described in [Figure 8](#).

A
Introduction

B
Climate-Related Risks,
Opportunities, and
Financial Impacts

C
Recommendations and
Guidance

**D
Scenario Analysis and
Climate-Related Issues**

E
Key Issues Considered and
Areas for Further Work

F
Conclusion

Appendices

Figure 8

Disclosure Considerations for Non-Financial Organizations

Organizations with more significant exposure to climate-related issues should consider disclosing key aspects of their scenario analysis, such as the ones described below.

- 1 The scenarios used, including the 2°C or lower scenario⁴⁷
- 2 Critical input parameters, assumptions, and analytical choices for the scenarios used, including such factors as:
 - Assumptions about possible technology responses and timing (e.g., evolution of products/services, the technology used to produce them, and costs to implement)
 - Assumptions made around potential differences in input parameters across regions, countries, asset locations, and/or markets
 - Approximate sensitivities to key assumptions
- 3 Time frames used for scenarios, including short-, medium-, and long-term milestones (e.g., how organizations consider timing of potential future implications under the scenarios used)
- 4 Information about the resiliency of the organization's strategy, including strategic performance implications under the various scenarios considered, potential qualitative or directional implications for the organization's value chain, capital allocation decisions, research and development focus, and potential material financial implications for the organization's operating results and/or financial position

⁴⁶ The Task Force's technical supplement, [The Use of Scenario Analysis in Disclosure of Climate-Related Risks and Opportunities](#) provides more information on scenario inputs, analytical assumptions and choices, and assessment and presentation of potential impacts.

⁴⁷ The objective of the Paris Agreement is to hold the increase in the global average temperature to well below 2°C above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5°C. The IEA is developing a 1.5°C scenario that organizations may find useful.

4. Applying Scenario Analysis

While the Task Force recognizes the complexities of scenario analysis and the potential resources needed to conduct it, organizations are encouraged to use scenario analysis to assess climate-related risks and opportunities. For organizations just beginning to use scenario analysis, a qualitative approach that progresses and deepens over time may be appropriate.⁴⁸ Greater rigor and sophistication in the use of data and quantitative models and analysis may be warranted for organizations with more extensive experience in conducting scenario analysis. Organizations may decide to use existing external scenarios and models (e.g., those provided by third-party vendors) or develop their own, in-house modeling capabilities. The choice of approach will depend on an organization's needs, resources, and capabilities.

In conducting scenario analysis, organizations should *strive* to achieve:

- transparency around parameters, assumptions, analytical approaches, and time frames;
- comparability of results across different scenarios and analytical approaches;
- adequate documentation for the methodology, assumptions, data sources, and analytics;
- consistency of methodology year over year;
- sound governance over scenario analysis conduct, validation, approval, and application; and
- effective disclosure of scenario analysis that will inform and promote a constructive dialogue between investors and organizations on the range of potential impacts and resilience of the organization's strategy under various plausible climate-related scenarios.

In applying scenario analysis, organizations should consider general implications for their strategies, capital allocation, and costs and revenues, both at an enterprise-wide level and at the level of specific regions and markets where specific implications of climate change for the organization are likely to arise. Financial-sector organizations should consider using scenario analysis to evaluate the potential impact of climate-related scenarios on individual assets or investments, investments or assets in a particular sector or region, or underwriting activities.

The Task Force's supplemental guidance recognizes that organizations will be at different levels of experience in using scenario analysis. However, it is important for organizations to use scenario analysis and develop the necessary organizational skills and capabilities to assess climate-related risks and opportunities, with the expectation that organizations will evolve and deepen their use of scenario analysis over time. The objective is to assist investors and other stakeholders in better understanding:

- the degree of robustness of the organization's strategy and financial plans under different plausible future states of the world;
- how the organization may be positioning itself to take advantage of opportunities and plans to mitigate or adapt to climate-related risks; and
- how the organization is challenging itself to think strategically about longer-term climate-related risks and opportunities.

A
Introduction

B
Climate-Related Risks,
Opportunities, and
Financial Impacts

C
Recommendations and
Guidance

D
**Scenario Analysis and
Climate-Related Issues**

E
Key Issues Considered and
Areas for Further Work

F
Conclusion

Appendices

⁴⁸ Organizations considering undertaking scenario analysis may wish to conduct various sensitivity analyses around key climate factors as a precursor to scenario analysis, recognizing that sensitivity analysis and scenario analysis are different, but complementary, processes.

5. Challenges and Benefits of Conducting Scenario Analysis

Scenario analysis is a well-established method for developing strategic plans that are more flexible and robust to a range of plausible future states. As previously discussed (Figure 7, p. 26) it is particularly useful for assessing issues with possible outcomes that are highly uncertain, that play out over the medium to longer term, and that are potentially disruptive. Scenario analysis can help to better frame strategic issues, assess the range of potential management actions that may be needed, engage more productively in strategic conversations, and identify indicators to monitor the external environment. Importantly, climate-related scenario analysis can provide the foundation for more effective engagement with investors on an organization's strategic and business resiliency.

Conducting climate-related scenario analysis, however, is not without challenges. First, most scenarios have been developed for global and macro assessments of potential climate-related impacts that can inform policy makers. These climate-related scenarios do not always provide the ideal level of transparency, range of data outputs, and functionality of tools that would facilitate their use in a business or investment context.

Second, the availability and granularity of data can be a challenge for organizations attempting to assess various energy and technology pathways or carbon constraints in different jurisdictions and geographic locations.

Third, the use of climate-related scenario analysis to assess potential business implications is still at an early stage. Although a handful of the largest organizations and investors are using climate-related scenario analysis as part of their strategic planning and risk management processes, many organizations are just beginning to explore its use. Sharing experiences and approaches to climate-related scenario analysis across organizations, therefore, is critical to advancing the use of climate-related scenario analysis. Organizations may be able to play an important role in this regard by facilitating information and experience exchanges among themselves; collectively developing tools, data sets, and methodologies; and working to set standards. Organizations across many different sectors will inevitably need to learn by doing. Some may seek guidance from other industry participants and experts on how to apply climate-related scenarios to make forward-looking analyses of climate-related risks and opportunities.

Addressing these challenges and advancing the use of climate-related scenario analysis will require further work. These challenges, however, are not insurmountable and can be addressed. Organizations should undertake scenario analysis in the near term to capture the important benefits for assessing climate-related risks and opportunities and improve their capabilities as tools and data progress over time.

A
Introduction

B
Climate-Related Risks,
Opportunities, and
Financial Impacts

C
Recommendations and
Guidance

D
**Scenario Analysis and
Climate-Related Issues**

E
Key Issues Considered and
Areas for Further Work

F
Conclusion

Appendices

E Key Issues Considered and Areas for Further Work

E Key Issues Considered and Areas for Further Work

The diverse perspectives of Task Force members as well as outreach efforts, including two public consultations, resulting in over 500 responses, hundreds of industry interviews, several focus groups, and multiple webinars, provided valuable insight into the challenges that different organizations—both financial and non-financial—may encounter in preparing disclosures consistent with the Task Force’s recommendations. The Task Force considered these issues and others in developing and then finalizing its recommendations and sought to balance the burden of disclosure on preparers with the need for consistent and decision-useful information for users (i.e., investors, lenders, and insurance underwriters). This section describes the key issues considered by the Task Force, significant public feedback received by the Task Force related to those issues, the ultimate disposition of the issues, and, in some cases, areas where further work may be warranted. [Figure 9](#) summarizes areas the Task Force identified, through its own analysis as well as through public feedback, as warranting further research and analysis or the development of methodologies and standards.

A
Introduction

B
Climate-Related Risks,
Opportunities, and
Financial Impacts

C
Recommendations and
Guidance

D
Scenario Analysis and
Climate-Related Issues

E
**Key Issues Considered
and Areas for Further
Work**

F
Conclusion

Appendices

Figure 9

Key Areas for Further Work

Relationship to Other Reporting Initiatives	Encourage standard setting organizations and others to actively work toward greater alignment of frameworks and to support adoption
Scenario Analysis	Further develop applicable 2°C or lower transition scenarios and supporting outputs, tools, and user interfaces
	Develop broadly accepted methodologies, datasets, and tools for scenario-based evaluation of physical risk by organizations
	Make datasets and tools publicly available and provide commonly available platforms for scenario analysis
Data Availability and Quality and Financial Impact	Undertake further research and analysis to better understand and measure how climate-related issues translate into potential financial impacts for organizations in financial and non-financial sectors
	Improve data quality and further develop standardized metrics for the financial sector, including better defining carbon-related assets and developing metrics that address a broader range of climate-related risks and opportunities
	Increase organizations’ understanding of climate-related risks and opportunities
Example Disclosures⁴⁹	Provide example disclosures to assist preparers in developing disclosures consistent with the Task Force’s recommendations

⁴⁹ In response to the second consultation, organizations asked for example disclosures to gain a better understanding of how the recommended information may be disclosed. The Task Force acknowledges the development of these examples as an area of further work.

1. Relationship to Other Reporting Initiatives

Through the Task Force’s outreach efforts, some organizations expressed concern that multiple disclosure frameworks and mandatory reporting requirements increase the administrative burden of disclosure efforts. Specifically, the additional time, cost, and effort required to analyze and disclose new climate-related information could penalize those with less capacity to respond.

The Task Force considered existing voluntary and mandatory climate-related reporting frameworks in developing its recommendations and provides information in the [Annex](#) on the alignment of existing frameworks, including those developed by the CDP (formerly the Carbon Disclosure Project), Climate Disclosure Standards Board (CDSB), the Global Reporting Initiative (GRI), the International Integrated Reporting Council (IIRC), and the Sustainability Accounting Standards Board (SASB), with the Task Force’s recommended disclosures. The Task Force expects preparers disclosing climate-related information under other regimes will be able to use existing processes and content when developing disclosures based on the Task Force’s recommendations.

The Task Force’s recommendations provide a common set of principles that should help existing disclosure regimes come into closer alignment over time. Preparers, users, and other stakeholders share a common interest in encouraging such alignment as it relieves a burden for reporting entities, reduces fragmented disclosure, and provides greater comparability for users. The Task Force also encourages standard setting bodies to support adoption of the recommendations and alignment with the recommended disclosures.

2. Location of Disclosures and Materiality

In considering possible reporting venues, the Task Force reviewed existing regimes for climate-related disclosures across G20 countries. While many G20 countries have rules or regulatory guidance that require climate-related disclosure for organizations, most are *not* explicitly focused on climate-related *financial* information.⁵⁰ In addition, the locations of these disclosures vary significantly and range from surveys sent to regulators to sustainability reports to annual financial filings (see [Appendix 4](#)).

The Task Force also reviewed financial filing requirements applicable to public companies across G20 countries and found that in most G20 countries, issuers have a legal obligation to disclose material information in their financial reports—which includes material, climate-related information. Such reporting may take the form of a general disclosure of material information, but many jurisdictions require disclosure of material information in specific sections of the financial filing (e.g., in a discussion on risk factors).⁵¹

Based on its review, the Task Force determined that preparers of climate-related financial disclosures should provide such disclosures in their mainstream (i.e., public) annual financial filings.⁵² The Task Force believes publication of climate-related financial information in mainstream financial filings will foster broader utilization of such disclosures, promoting an informed understanding of climate-related issues by investors and others, and support shareholder engagement. Importantly, in determining whether information is material, the Task Force believes organizations should determine materiality for climate-related issues consistent with how they determine the materiality of other information included in their financial filings. In addition, the Task Force cautions organizations against prematurely concluding that climate-

A
Introduction

B
Climate-Related Risks,
Opportunities, and
Financial Impacts

C
Recommendations and
Guidance

D
Scenario Analysis and
Climate-Related Issues

E
**Key Issues Considered
and Areas for Further
Work**

F
Conclusion

Appendices

⁵⁰ Organization for Economic Co-operation and Development (OECD) and CDSB, *Climate Change Disclosure in G20 Countries: Stocktaking of Corporate Reporting Schemes*, November 18, 2015.

⁵¹ N. Ganci, S. Hammer, T. Reilly, and P. Rodel, *Environmental and Climate Change Disclosure under the Securities Laws: A Multijurisdictional Survey*, Debevoise & Plimpton, March 2016.

⁵² To the extent climate-related disclosures are provided outside of financial filings, organizations are encouraged to align the release of such reports with their financial filings.

related risks and opportunities are not material based on perceptions of the longer-term nature of some climate-related risks.

As part of the Task Force’s second public consultation, some organizations expressed concern about disclosing information in financial filings that is not clearly tied to an assessment of materiality. The Task Force recognizes organizations’ concerns about disclosing information in annual financial filings that is not clearly tied to an assessment of materiality. However, the Task Force believes disclosures related to the Governance and Risk Management recommendations should be provided in annual financial filings. Because climate-related risk is a non-diversifiable risk that affects nearly all sectors, many investors believe it requires special attention. For example, in assessing organizations’ financial and operating results, many investors want insight into the governance and risk management context in which such results are achieved. The Task Force believes disclosures related to its Governance and Risk Management recommendations directly address this need for context and should be included in annual financial filings.

For disclosures related to the Strategy and Metrics and Targets recommendations, the Task Force believes organizations should provide such information in annual financial filings when the information is deemed material. Certain organizations—those in the four non-financial groups that have more than one billion USDE in annual revenue—should consider disclosing information related to these recommendations in other reports when the information is not deemed material and not included in financial filings.^{53,54} Because these organizations are more likely than others to be affected financially over time due to their significant GHG emissions or energy or water dependencies, investors are interested in monitoring how the organizations’ strategies evolve.

In addition, the Task Force recognizes reporting by asset managers and asset owners to their clients and beneficiaries, respectively, generally occurs outside mainstream financial filings (Figure 10). For purposes of adopting the Task Force’s recommendations, asset managers and asset owners should use their existing channels of financial reporting to their clients and beneficiaries where relevant and feasible. Likewise, asset managers and asset owners should consider materiality in the context of their respective mandates and investment performance for clients and beneficiaries.

Figure 10

Reporting by Asset Owners

The financial reporting requirements and practices of asset owners vary widely and differ from what is required of organizations with public debt or equity. Some asset owners have no public reporting, while others provide extensive public reporting. For purposes of adopting the Task Force’s recommendations, asset owners should use their existing channels of financial reporting to their beneficiaries and others where relevant and feasible.

Reporting by Asset Managers

Reporting to clients by asset managers also takes different forms, depending on the requirements of the client and the types of investments made. For example, an investor in a mutual fund might receive quarterly, or download from the asset manager’s website, a “fund fact sheet” that reports, among other information, the top holdings by value, the top performers by returns, and the carbon footprint of the portfolio against a stated benchmark. An investor in a segregated account might receive more detailed reporting, including items such as the aggregate carbon intensity of the portfolio compared with a benchmark, the portfolio’s exposure to green revenue (and how this changes over time), or insight into portfolio positioning under different climate scenarios. The Task Force appreciates that climate-related risk reporting by asset managers is in the very early stages and encourages progress and innovation by the industry.

A
Introduction

B
Climate-Related Risks,
Opportunities, and
Financial Impacts

C
Recommendations and
Guidance

D
Scenario Analysis and
Climate-Related Issues

E
**Key Issues Considered
and Areas for Further
Work**

F
Conclusion

Appendices

⁵³ The Task Force chose a one billion USDE annual revenue threshold because it captures organizations responsible for over 90% of Scope 1 and 2 GHG emissions in the industries represented by the four non-financial groups (about 2,250 organizations out of roughly 15,000).

⁵⁴ “Other reports” should be official company reports that are issued at least annually, widely distributed and available to investors and others, and subject to internal governance processes that are substantially similar to those used for financial reporting.

3. Scenario Analysis

As part of the Task Force's second public consultation, many organizations said scenario analysis is a useful tool to help assess risks and understand potential implications of climate change; however, they also identified areas where the Task Force's recommendations and guidance could be improved. In particular, organizations asked the Task Force to identify standardized climate-related scenarios for organizations to use and clarify the information related to scenarios that should be disclosed. They also noted expectations around disclosures and climate-related scenario analysis should be proportionate to the size of the reporting entity and not onerous for smaller organizations. In addition, some organizations noted that the disclosures related to strategy could put organizations at greater risk of litigation given the high degree of uncertainty around the future timing and magnitude of climate-related impacts.

In finalizing its recommendations and guidance, the Task Force clarified organizations should describe how resilient their strategies are to climate-related risks and opportunities, taking into consideration a transition to a lower-carbon economy consistent with a 2°C or lower scenario and, where relevant, scenarios consistent with more extreme physical risks. To address concerns about proportionality, the Task Force established a threshold for organizations in the four non-financial groups that should perform more robust scenario analysis and disclose additional information on the resiliency of their strategies.

On the issue of recommending specific standardized or reference climate-related scenarios for organizations to use, Task Force members agreed that while such an approach is intuitively appealing, it is not a practical solution at this time. Existing, publicly available climate-related scenarios are not structured or defined in such a way that they can be easily applied consistently across different industries or across organizations within an industry.

The Task Force recognizes that incorporating scenario analysis into strategic planning processes will improve over time as organizations "learn by doing." To facilitate progress in this area, the Task Force encourages further work as follows:

- further developing 2°C or lower transition scenarios that can be applied to specific industries and geographies along with supporting outputs, tools, and user interfaces;
- developing broadly accepted methodologies, data sets, and tools for scenario-based evaluation of physical risk by organizations;
- making these data sets and tools publicly available to facilitate use by organizations, reduce organizational transaction costs, minimize gaps between jurisdictions in terms of technical expertise, enhance comparability of climate-related risk assessments by organizations, and help ensure comparability for investors; and
- creating more industry specific (financial and non-financial) guidance for preparers and users of climate-related scenarios.

4. Data Availability and Quality and Financial Impact

The Task Force developed supplemental guidance for the four non-financial groups that account for the largest proportion of GHG emissions, energy usage, and water usage; and, as part of that supplemental guidance, the Task Force included several illustrative metrics around factors that may be indicative of potential financial implications for climate-related risks and opportunities. As part of the second public consultation, several organizations provided feedback on the illustrative metrics, and common themes included (1) improving the comparability and consistency of the metrics, (2) clarifying the links among the metrics, climate-related risks and opportunities, and potential financial implications, (3) simplifying the metrics, and (4) providing additional guidance on the metrics, including how to calculate key metrics. Organizations also raised concerns about

A
Introduction

B
Climate-Related Risks,
Opportunities, and
Financial Impacts

C
Recommendations and
Guidance

D
Scenario Analysis and
Climate-Related Issues

E
**Key Issues Considered
and Areas for Further
Work**

F
Conclusion

Appendices

the lack of standardized data and metrics in the financial sector, which complicates preparers' ability to develop decision-useful metrics and users' ability to compare metrics across organizations.

The Task Force recognizes these concerns as well as broader challenges related to data availability and quality, as described below.

- The gaps in emissions measurement methodologies, including Scope 3 emissions and product life-cycle emissions methodologies, make reliable and accurate estimates difficult.^{55,56}
- The lack of robust and cost-effective tools to quantify the potential impact of climate-related risks and opportunities at the asset and project level makes aggregation across an organization's activities or investment portfolios problematic and costly.
- The need to consider the variability of climate-related impacts across and within different sectors and markets further complicates the process (and magnifies the cost) of assessing potential climate-related financial impacts.
- The high degree of uncertainty around the timing and magnitude of climate-related risks makes it difficult to determine and disclose the potential impacts with precision.

In finalizing its supplemental guidance, the Task Force addressed the redundancy of the metrics; simplified the non-financial illustrative metrics tables; ensured consistent terminology was used; and clarified the links between the metrics, climate-related risks and opportunities, and potential financial implications. In addition, the Task Force encourages further research and analysis by sector and industry experts to (1) better understand and measure how climate-related issues translate into potential financial impacts; (2) develop standardized metrics for the financial sector, including better defining carbon-related assets; and (3) increase organizations' understanding of climate-related risks and opportunities. As it relates to the broader challenges with data quality and availability, the Task Force encourages preparers to include in their disclosures a description of gaps, limitations, and assumptions made as part of their assessment of climate-related issues.

5. GHG Emissions Associated with Investments

In its supplemental guidance for asset owners and asset managers issued on December 14, 2016, the Task Force asked such organizations to provide GHG emissions associated with each fund, product, or investment strategy normalized for every million of the reporting currency invested. As part of the Task Force's public consultation as well as in discussions with preparers, some asset owners and asset managers expressed concern about reporting on GHG emissions related to their own or their clients' investments given the current data challenges and existing accounting guidance on how to measure and report GHG emissions associated with investments. In particular, they voiced concerns about the accuracy and completeness of the reported data and limited application of the metric to asset classes beyond public equities. Organizations also highlighted that GHG emissions associated with investments cannot be used as a sole indicator for investment decisions (i.e., additional metrics are needed) and that the metric can fluctuate with share price movements since it uses investors' proportional share of total equity.⁵⁷

In consideration of the feedback received, the Task Force has replaced the GHG emissions associated with investments metric in the supplemental guidance for asset owners and asset managers with a weighted average carbon intensity metric. The Task Force believes the weighted

⁵⁵ Scope 3 emissions are all indirect emissions that occur in the value chain of the reporting company, including both upstream and downstream emissions. See Greenhouse Gas Protocol, "Calculation Tools, FAQ."

⁵⁶ Product life cycle emissions are all the emissions associated with the production and use of a specific product, including emissions from raw materials, manufacture, transport, storage, sale, use, and disposal. See Greenhouse Gas Protocol, "Calculation Tools, FAQ."

⁵⁷ Because the metric uses investors' proportional share of total equity, increases in the underlying companies' share prices, *all else equal*, will result in a decrease in the carbon footprinting number even though GHG emissions are unchanged.

average carbon intensity metric, which measures exposure to carbon-intensive companies, addresses many of the concerns raised. For example, the metric can be applied across asset classes, is fairly simple to calculate, and does not use investors' proportional share of total equity and, therefore, is not sensitive to share price movements.

The Task Force acknowledges the challenges and limitations of current carbon footprinting metrics, including that such metrics should not necessarily be interpreted as risk metrics. Nevertheless, the Task Force views the reporting of weighted average carbon intensity as a first step and expects disclosure of this information to prompt important advancements in the development of decision-useful, climate-related risk metrics. In this regard, the Task Force encourages asset owners and asset managers to provide other metrics they believe are useful for decision making along with a description of the methodology used. The Task Force recognizes that some asset owners and asset managers may be able to report the weighted average carbon intensity and other metrics on only a portion of their investments given data availability and methodological issues. Nonetheless, increasing the number of organizations reporting this type of information should help speed the development of better climate-related risk metrics.

A
Introduction

B
Climate-Related Risks,
Opportunities, and
Financial Impacts

C
Recommendations and
Guidance

D
Scenario Analysis and
Climate-Related Issues

E
**Key Issues Considered
and Areas for Further
Work**

F
Conclusion

Appendices

6. Remuneration

In the supplemental guidance for the Energy Group, the Task Force asked such organizations to consider disclosing whether and how performance metrics, including links to remuneration policies, take into consideration climate-related risks and opportunities. As part of its second public consultation, the Task Force asked whether the guidance should extend to organizations beyond those in the Energy group and, if so, to which types of organizations. The majority of organizations that commented on this issue responded that the guidance should be extended to other organizations; and many suggested that the guidance should apply to organizations more likely to be affected by climate-related risks. In consideration of the feedback received, the Task Force revised its guidance to ask organizations, where climate-related risks are material, to consider describing whether and how related performance metrics are incorporated into remuneration policies.

7. Accounting Considerations

As part of its work, the Task Force considered the interconnectivity of its recommendations with existing financial statement and disclosure requirements. The Task Force determined that the two primary accounting standard setting bodies, the International Accounting Standards Board (IASB) and the Financial Accounting Standards Board (FASB), have issued standards to address risks and uncertainties affecting companies. Both International Accounting Standard (IAS) 37 "Provisions, Contingent Liabilities and Contingent Assets" and Accounting Standards Codification (ASC) 450 "Contingencies" provide guidance on how to account for and disclose contingencies. Additionally, IAS 36 "Impairment of Assets" and ASC 360 "Long-lived Asset Impairment" provide guidance on assessing the impairment of long-lived assets. The disclosures of both contingencies and management's assessment and evaluation of long-lived assets for potential impairment are critically important in assisting stakeholders in understanding an organization's ability to meet future reported earnings and cash flow goals.

In most G20 countries, financial executives will likely recognize that the Task Force's disclosure recommendations should result in more quantitative financial disclosures, particularly disclosure of metrics, about the financial impact that climate-related risks have or could have on an organization. Specifically, asset impairments may result from assets adversely impacted by the effects of climate change and/or additional liabilities may need to be recorded to account for regulatory fines and penalties resulting from enhanced regulatory standards. Additionally, cash flows from operations, net income, and access to capital could all be impacted by the effects of

climate-related risks (and opportunities). Therefore, financial executives (e.g., chief financial officers, chief accounting officers, and controllers) should be involved in the organization's evaluation of climate-related risks and opportunities and the efforts undertaken to manage the risks and maximize the opportunities. Finally, careful consideration should be given to the linkage between scenario analyses performed to assess the resilience of an organization's strategy to climate-related risks and opportunities (as suggested in the Task Force's recommendations) and assumptions underlying cash flow analyses used to assess asset (e.g., goodwill, intangibles, and fixed assets) impairments.

8. Time Frames for Short, Medium, and Long Term

As part of the Task Force's second public consultation, some organizations asked the Task Force to define specific ranges for short, medium, and long term. Because the timing of climate-related impacts on organizations will vary, the Task Force believes specifying time frames across sectors for short, medium, and long term could hinder organizations' consideration of climate-related risks and opportunities specific to their businesses. The Task Force is, therefore, not defining time frames and encourages preparers to decide how to define their own time frames according to the life of their assets, the profile of the climate-related risks they face, and the sectors and geographies in which they operate.

In assessing climate-related issues, organizations should be sensitive to the time frames used to conduct their assessments. While many organizations conduct operational and financial planning over a 1-2 year time frame and strategic and capital planning over a 2-5 year time frame, climate-related risks may have implications for an organization over a longer period. It is, therefore, important for organizations to consider the appropriate time frames when assessing climate-related risks.

9. Scope of Coverage

To promote more informed investing, lending, and insurance underwriting decisions, the Task Force recommends all financial and non-financial organizations with public debt and/or equity adopt its recommendations.⁵⁸ Because climate-related risks and opportunities are relevant for organizations across all sectors, the Task Force encourages all organizations to adopt these recommendations. In addition, the Task Force believes that asset managers and asset owners, including public- and private-sector pension plans, endowments, and foundations, should implement its recommendations. The Task Force believes climate-related financial information should be provided to asset managers' clients and asset owners' beneficiaries so that they may better understand the performance of their assets, consider the risks of their investments, and make more informed investment choices.

Consistent with existing global stewardship frameworks, asset owners should engage with the organizations in which they invest to encourage adoption of these recommendations. They should also ask their asset managers to adopt these recommendations. Asset owners' expectations in relation to climate-related risk reporting from organizations and asset managers are likely to evolve as data availability and quality improves, understanding of climate-related risk increases, and risk measurement methodologies are further developed.

The Task Force recognizes that several asset owners expressed concern about being identified as the potential "policing body" charged with ensuring adoption of the Task Force's recommendations by asset managers and underlying organizations. The Task Force appreciates that expectations must be reasonable and that asset owners have many competing priorities, but

⁵⁸ Thresholds for climate-related financial disclosures should be aligned to the financial disclosure requirements more broadly in the jurisdictions where a preparer is incorporated and/or operates and is required to make financial disclosures.

encourages them to help drive adoption of the recommendations. Because asset owners and asset managers sit at the top of the investment chain, they have an important role to play in influencing the organizations in which they invest to provide better climate-related financial disclosures.

10. Organizational Ownership

Some organizations have not formalized responsibility for climate-related risk assessment and management. Even for organizations with clearly assigned responsibilities for climate-related issues, the relationship between those responsible for climate-related risk (e.g., “environmental, social and governance” experts, chief investment officers) and those in the finance function can range from regularly scheduled interactions and exchanges of information to minimal or no interaction. According to some preparers, lack of clarity around responsibility for climate-related risk assessments and management, compounded by a lack of integration into organizations’ financial reporting processes, could adversely affect implementation of the recommendations.

The Task Force believes that by encouraging disclosure of climate-related financial information in public financial filings, coordination between organizations’ climate-related risk experts and the finance function will improve. Similar to the way organizations are evolving to include cyber security issues in their strategic and financial planning efforts, so too should they evolve for climate-related issues.

A
Introduction

B
Climate-Related Risks,
Opportunities, and
Financial Impacts

C
Recommendations and
Guidance

D
Scenario Analysis and
Climate-Related Issues

E
**Key Issues Considered
and Areas for Further
Work**

F
Conclusion

Appendices

F Conclusion

F Conclusion

The Task Force's recommendations are a foundation for improved reporting of climate-related issues in mainstream financial filings with several resulting benefits (outlined in Figure 11). The recommendations aim to be ambitious, but also practical for near-term adoption. The Task Force expects that reporting of climate-related risks and opportunities will evolve over time as organizations, investors, and others contribute to the quality and consistency of the information disclosed.

Figure 11

Benefits of Recommendations

- Foundation for immediate adoption and flexible enough to accommodate evolving practices
- Promote board and senior management engagement on climate-related issues
- Bring the “future” nature of issues into the present through scenario analysis
- Support understanding of financial sector's exposure to climate-related risks
- Designed to solicit decision-useful, forward-looking information on financial impacts

A
Introduction

B
Climate-Related Risks,
Opportunities, and
Financial Impacts

C
Recommendations and
Guidance

D
Scenario Analysis and
Climate-Related Issues

E
Key Issues Considered and
Areas for Further Work

F
Conclusion

Appendices

1. Evolution of Climate-Related Financial Disclosures

The Task Force recognizes that challenges exist, but all types of organizations can develop disclosures consistent with its recommendations. The recommendations provide a foundation for immediate adoption and are flexible enough to accommodate evolving practices. As understanding, data analytics, and modeling of climate-related issues become more widespread, disclosures can mature accordingly.

Organizations already reporting climate-related financial information under other frameworks may be well positioned to disclose under this framework immediately and are encouraged to do so. For such organizations, significant effort has gone into developing processes and collecting information needed for disclosing under these regimes. The Task Force expects these organizations will be able to use existing processes when providing disclosures in annual financial filings based on the Task Force's recommendations.^{59,60} Those with less experience can begin by considering and disclosing how climate-related issues may be relevant in their current governance, strategy, and risk management practices. This initial level of disclosure will allow investors to review, recognize, and understand how organizations consider climate-related issues and their potential financial impact.

Importantly, the Task Force recognizes organizations need to make financial disclosures in accordance with their national disclosure requirements. To the extent certain elements of the recommendations are incompatible with national disclosure requirements for financial filings, the Task Force encourages organizations to disclose those elements through other reports. Such other reports should be official company reports that are issued at least annually, widely distributed and available to investors and others, and subject to internal governance processes that are the same or substantially similar to those used for financial reporting.

2. Widespread Adoption Critical

In the Task Force's view, the success of its recommendations depends on near-term, widespread adoption by organizations in the financial and non-financial sectors. Through widespread adoption, financial risks and opportunities related to climate change will become a natural part of

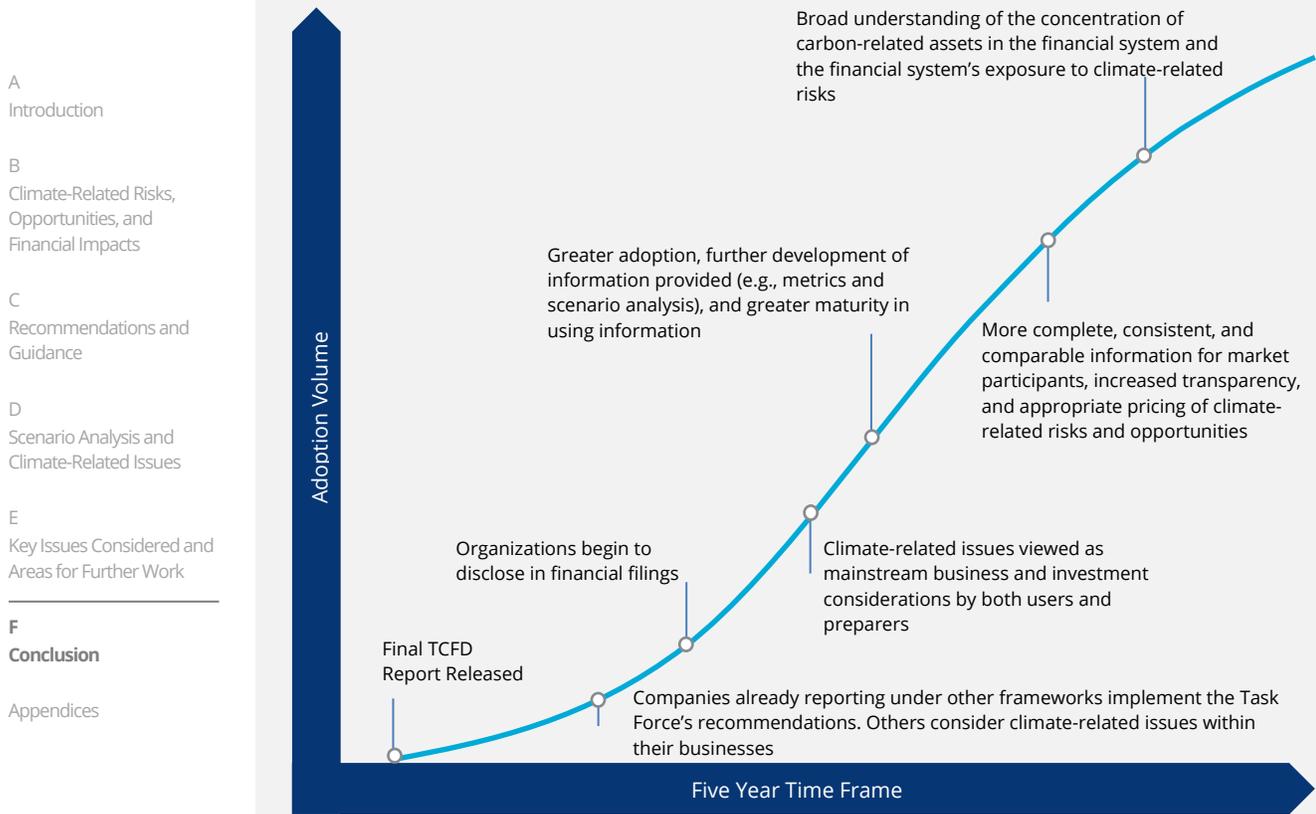
⁵⁹ The Task Force recognizes the structure and content of financial filings differs across jurisdictions and, therefore, believes organizations are in the best position to determine where and how the recommended disclosures should be incorporated in financial filings.

⁶⁰ The Task Force encourages organizations where climate-related issues could be material in the future to begin disclosing climate-related financial information outside financial filings to facilitate the incorporation of such information into financial filings once climate-related issues are determined to be material.

organizations' risk management and strategic planning processes. As this occurs, organizations' and investors' understanding of the potential financial implications associated with transitioning to a lower-carbon economy and physical risks will grow, information will become more decision-useful, and risks and opportunities will be more accurately priced, allowing for the more efficient allocation of capital. Figure 12 outlines a possible path for implementation.

Widespread adoption of the recommendations will require ongoing leadership by the G20 and its member countries. Such leadership is essential to continue to make the link between these recommendations and the achievements of global climate objectives. Leadership from the FSB is also critical to underscore the importance of better climate-related financial disclosures for the functioning of the financial system.

Figure 12
Implementation Path (Illustrative)



The Task Force is not alone in its work. A variety of stakeholders, including stock exchanges, investment consultants, credit rating agencies, and others can provide valuable contributions toward adoption of the recommendations. The Task Force believes that advocacy for these standards will be necessary for widespread adoption, including educating organizations that will disclose climate-related financial information and those that will use those disclosures to make financial decisions. To this end, the Task Force notes that strong support by the FSB and G20 authorities would have a positive impact on implementation. With the FSB's extension of the Task Force through September 2018, the Task Force will work to encourage adoption of the recommendations and support the FSB and G20 authorities in promoting the advancement of climate-related financial disclosures.

Appendices

Appendix 1: Task Force Members

Chairman and Vice Chairs

Michael Bloomberg

Chair
Founder
Bloomberg LP and Bloomberg Philanthropies

Denise Pavarina

Vice Chair
Executive Director
Banco Bradesco

Christian Thimann

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Insurance Foresight
AXA

Graeme Pitkethly

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Yeo Lian Sim

Vice Chair
Special Adviser, Diversity
Singapore Exchange

Members

Jane Ambachtsheer

Partner, Chair – Responsible Investment
Mercer

Wim Bartels

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Koushik Chatterjee

Group Executive Director, Finance and Corporate
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EY

Mark Lewis

Managing Director, Head of European Utilities
Equity Research
Barclays

Matt Arnold

Managing Director and Global Head of Sustainable
Finance
JPMorgan Chase & Co.

Bruno Bertocci

Managing Director, Head of Sustainable Investors
UBS Asset Management

Richard Cantor

Chief Risk Officer, Moody's Corporation
Chief Credit Officer, Moody's Investor Service

Eric Dugelay

Global Leader, Sustainability Services
Deloitte

Udo Hartmann

Senior Manager, Group Environmental Protection
& Energy Management
Daimler

Thomas Kusterer

Chief Financial Officer
EnBW Energie Baden-Württemberg AG

Stephanie Leaist

Managing Director, Head of Sustainable Investing
Canada Pension Plan Investment Board

Eloy Lindeijer

Chief, Investment Management, member
Executive Committee
PGGM

A
Introduction

B
Climate-Related Risks,
Opportunities, and
Financial Impacts

C
Recommendations and
Guidance

D
Scenario Analysis and
Climate-Related Issues

E
Key Issues Considered and
Areas for Further Work

F
Conclusion

Appendices

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Industrial and Commercial Bank of China

Giuseppe Ricci

Chief Refining and Marketing Officer
ENI

Andreas Spiegel

Head Group Sustainability Risk
Swiss Re

Fiona Wild

Vice President, Sustainability and Climate Change
BHP Billiton

Jon Williams

Partner, Sustainability and Climate Change
PwC

Masaaki Nagamura

Head, Corporate Social Responsibility
Tokio Marine Holdings

Martin Skancke

Chair, Risk Committee
Storebrand

Steve Waygood

Chief Responsible Investment Officer
Aviva Investors

Michael Wilkins

Managing Director, Environmental & Climate Risk
Research
S&P Global Ratings

Deborah Winshel

Managing Director, Global Head of Impact
Investing
BlackRock

A
Introduction

B
Climate-Related Risks,
Opportunities, and
Financial Impacts

C
Recommendations and
Guidance

D
Scenario Analysis and
Climate-Related Issues

E
Key Issues Considered and
Areas for Further Work

F
Conclusion

Appendices

Special Adviser

Russell Picot

Chair, Audit and Risk Committee, LifeSight
Board Chair, HSBC Bank (UK) Pension Scheme
Trustee
Former Group Chief Accounting Officer, HSBC

Secretariat

Mary Schapiro

Special Advisor to the Chair
Former Chair, U.S. Securities and Exchange
Commission

Curtis Ravenel

Global Head, Sustainable Business & Finance
Bloomberg LP

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Managing Director
Promontory Financial Group, an IBM Company

Mara Childress

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Promontory Financial Group, an IBM Company

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Observers

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Member of Secretariat
Financial Stability Board

Rupert Thorne

Deputy to the Secretary General
Financial Stability Board

Joe Perry

Member of Secretariat
Financial Stability Board

Appendix 2: Task Force Objectives and Approach

1. Objectives

The Task Force engaged with key stakeholders throughout the development of its recommendations to ensure that its work would (1) promote alignment across existing disclosure regimes, (2) consider the perspectives of users and the concerns of preparers of climate-related financial disclosures, and (3) be efficiently implemented by organizations in their financial reporting.

2. Approach

In addition to the expertise of its members, a broad range of external resources informed the Task Force's recommendations, including existing voluntary and mandatory climate-related reporting frameworks, governance and risk management standards, government reports and research, expert resources, and various other stakeholders such as industry participants, trade associations, and non-governmental organizations (NGOs).

a. Leveraging Expertise

Task Force members come from a range of companies, including large financial companies, large non-financial companies, accounting and consulting firms, and credit rating agencies, and brought a range of practical experience, expertise, and global perspectives on preparing and using climate-related financial disclosures. Through eight plenary meetings, Task Force members contributed significantly to developing a consensus-based, industry-led approach to climate-related financial disclosure.

Due to the technically challenging and broad focus of its work, the Task Force also sought input from experts in the field of climate change, particularly in relation to scenario analysis. The Task Force engaged Environmental Resources Management (ERM) to inform its work by developing a technical paper on scenario analysis—[The Use of Scenario Analysis in Disclosure of Climate-Related Risks and Opportunities](#). Several members of the Task Force, joined by representatives from 2° Investing Initiative (2°ii), Bloomberg New Energy Finance (BNEF), Bloomberg Quantitative Risk Experts, Carbon Tracker, CDP, and the London School of Economics and Political Science led a working group to oversee ERM's technical considerations. A workshop was also held with experts from Oxford Martin School. Additionally, the International Energy Agency (IEA) provided input regarding how scenario analysis can be conducted and used.

b. Research and Information Gathering

The Task Force's work drew on publications and research conducted by governments, NGOs, industry participants, as well as disclosure regimes with a focus on climate-related issues. The Task Force reviewed existing mandatory and voluntary reporting regimes for climate-related disclosure to identify commonalities and gaps across existing regimes and to determine areas meriting further research and analysis by the Task Force. The work of organizations regarded as standard setters, as well as several organizations active in developing reporting mechanisms for climate-related issues, served as the primary references for the Task Force in developing its recommendations and supporting guidance. The Task Force also considered resources related to sector-specific climate issues in the development of the supplemental guidance.

A
Introduction

B
Climate-Related Risks,
Opportunities, and
Financial Impacts

C
Recommendations and
Guidance

D
Scenario Analysis and
Climate-Related Issues

E
Key Issues Considered and
Areas for Further Work

F
Conclusion

Appendices

c. Outreach and Engagement

Engagement with users, preparers, and other stakeholders in relevant industries and sectors across G20 countries and other countries was important in developing the Task Force’s recommendations. The Task Force conducted five types of engagement to support this effort: public consultation, industry interviews, focus groups, outreach events, and webinars.

Such engagement served two primary purposes: (1) to raise the level of awareness and educate stakeholders on the Task Force’s work and (2) to solicit feedback from stakeholders on the Task Force’s proposed recommended disclosures and supplemental guidance for specific sectors. In total, more than 2,700 individuals in 43 countries were included in the Task Force’s outreach and engagement (Figure A2.1).

Public Consultations

The Task Force conducted two public consultations. The first followed the April 1, 2016 publication of the Task Force’s Phase I Report, which set out the scope and high-level objectives for the Task Force’s work. The Task Force solicited input to guide the development of its recommendations for voluntary climate-related financial disclosures. In total, 203 participants from 24 countries responded to the first public consultation. Respondents represented the financial sector, non-financial sectors, NGOs, and other organizations. Public consultation comments indicated support for disclosures on scenario analysis as well as disclosures tailored for specific sectors. Key themes from the first public consultation, which informed the Task Force’s recommendations and guidance, are included in Table A2.1 (p. 48).

- A Introduction
- B Climate-Related Risks, Opportunities, and Financial Impacts
- C Recommendations and Guidance
- D Scenario Analysis and Climate-Related Issues
- E Key Issues Considered and Areas for Further Work
- F Conclusion

Appendices

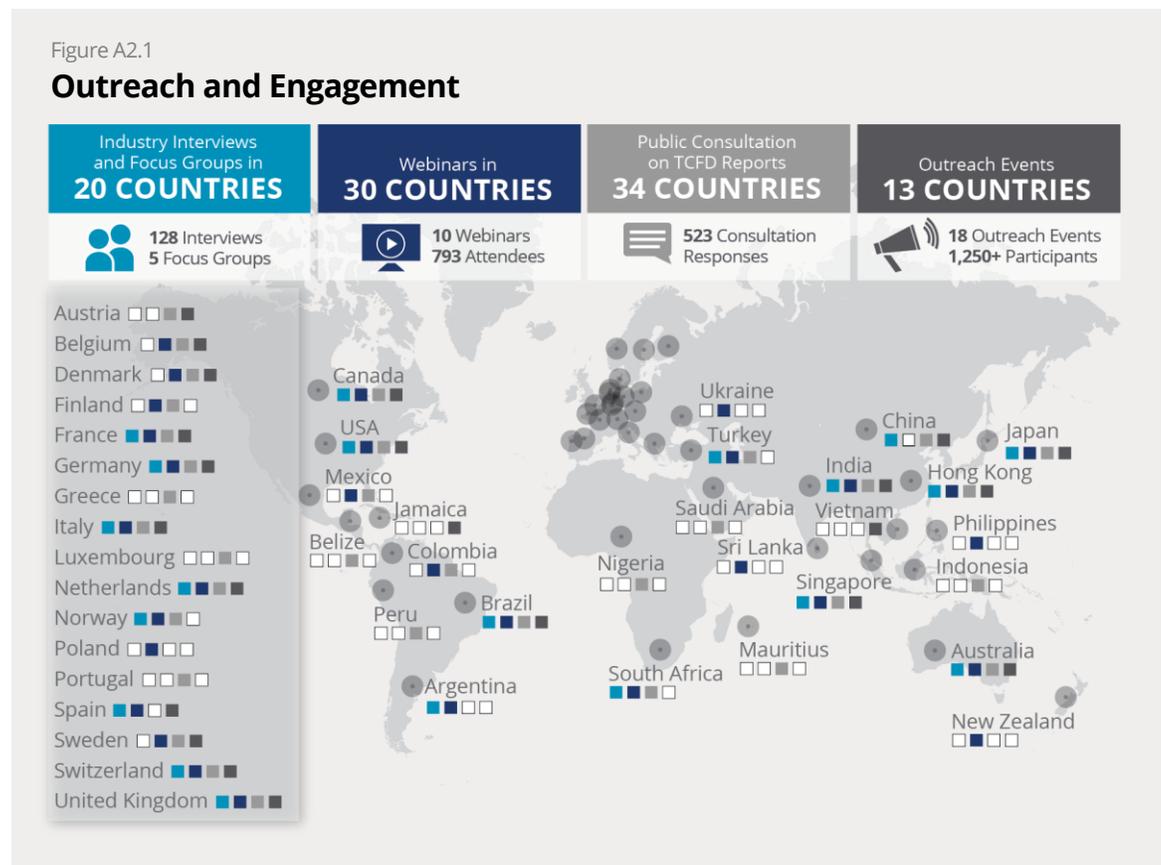


Table A2.1

Key Themes of First Public Consultation (Scope of Work)

Key Themes	Survey Response	
Components of Disclosures	The majority of respondents were in agreement that disclosures should: <ul style="list-style-type: none"> – be forward-looking, – address the ability to achieve targets, with strategies for achievement, and – align with material risks. 	
Sector-Specific Disclosures	Respondents were in favor of disclosures for specific sectors	62%
Scenario Analysis	Respondents see scenario analysis as a key component of disclosure	96%

A second public consultation followed the release of the Task Force’s report in December 2016. The Task Force conducted the second consultation through an online questionnaire designed to gather feedback on the recommendations, guidance, and key issues identified by the Task Force. The Task Force received 306 responses to its online questionnaire and 59 comment letters on the recommendations and guidance from a variety of organizations in 30 countries.⁶¹ The majority of responses came from Europe (57 percent), followed by North America (20 percent), Asia Pacific (19 percent), South America (four percent), and the Middle East/Africa (less than one percent). Forty-five percent of respondents provided perspective as users of disclosure, 44 percent as preparers of disclosure, and 11 percent as “other.” Respondents came from the financial sector (43 percent), non-financial sectors (18 percent), or other types of organizations (39 percent).⁶²

Table A2.2

Responses to Second Public Consultation Questions

Questions	Respondent	Percent Responding “Useful”
How useful are the recommendations and guidance for all sectors in preparing disclosures?	Preparers	75%
How useful is the supplemental guidance in preparing disclosures?	Preparers	66%
If organizations disclose the recommended information, how useful would it be for decision making?	Users	77%
How useful is a description of potential performance across a range of scenarios to understanding climate-related impacts on an organization’s businesses, strategy, and financial planning?	Financial	74%
	Non-Financial	17%
	Other	86%
How useful are the illustrative examples of metrics and targets?	Financial	74%
	Non-Financial	33%
	Other	72%
How useful would the disclosure of GHG emissions associated with investments be for economic decision-making?	Financial	68%
	Other	74%

⁶¹ Of the 59 respondents that submitted comment letters, 45 also completed the online questionnaire, resulting in a total of 320 unique responses.

⁶² The other types of organizations included research and advocacy NGOs; standard setting NGOs; data analytics, consulting, and research organizations; academia; and accounting associations.

Overall, respondents were generally supportive of the Task Force's recommendations as shown in [Table A2.2](#) (p. 48); however, several provided specific and constructive feedback on the report. The key themes from this feedback are included in [Table A2.3](#). For additional information regarding the results of the second public consultation, please view the [TCFD Public Consultation Summary 2017](#) on the Task Force's website.

Table A2.3

Key Themes of Second Public Consultation (Recommendations)

Key Themes	
Materiality and Location of Disclosures	Clarifying which recommended disclosures depend on materiality assessment and providing flexibility for organizations to provide some or all disclosures in reports other than financial filings.
Scenario Analysis	Improving ease of implementation, and comparability of scenario analysis by specifying standard scenario(s) and providing additional guidance and tools.
Metrics for the Financial Sector	Encouraging further development and standardization of metrics for the financial sector.
Metrics for Non-Financial Sectors	Improving comparability and consistency of the illustrative metrics for non-financial sectors, clarifying the links to financial impact and climate-related risks and opportunities.
Implementation	Providing disclosure examples to support preparers in developing relevant climate-related financial disclosures.

A
Introduction

B
Climate-Related Risks,
Opportunities, and
Financial Impacts

C
Recommendations and
Guidance

D
Scenario Analysis and
Climate-Related Issues

E
Key Issues Considered and
Areas for Further Work

F
Conclusion

Appendices

Industry Interviews and Focus Groups

Prior to the December 2016 release of the Task Force's report for public consultation, the Task Force conducted 128 industry interviews with users and preparers of financial statements to gather feedback regarding the Task Force's draft recommendations, supplemental guidance for certain sectors, and other considerations. Industry interview participants included chief financial officers, investment officers, other finance and accounting officers, risk officers, sustainability officers, and others. Forty-three percent of the participants held finance, legal, or risk positions and 39 percent held environmental or sustainability roles.

Task Force representatives conducted two rounds of industry interviews. The initial round of interviews focused on the recommendations and guidance; the second round emphasized specific recommendations and sector-specific guidance. Organizations invited to participate in the interviews met two primary criteria: (1) represented industry and sector leaders likely to be impacted by climate-related risks and opportunities and (2) provided geographic diversity to ensure coverage from each G20 and Financial Stability Board (FSB) represented country.

The interviews provided valuable information that informed the Task Force's recommendations and guidance as reflected in the report issued for public consultation in December 2016. Industry interview themes were consistent with those identified in the second public consultation. Preparers raised concerns about the relationship of the Task Force's recommendations to other reporting initiatives and the accuracy and reliability of information requested. Users commented that establishing consistency in metrics would be beneficial, acknowledged data quality challenges, and provided thoughts on scenario analysis (e.g., would like preparers to use of a range of scenarios, interested in knowing how scenario analysis is used in the organization).

Subsequent to the December 2016 release of the Task Force's report for public consultation, the Task Force conducted five focus groups with 32 individuals from six countries representing organizations in specific sectors and industries to solicit feedback on scenario analysis and carbon footprinting metrics. In the two focus groups for the financial sector, participants expressed support for the Task Force's work, noting current challenges related to quality and consistency in

reported climate-related information. Asset owners and asset managers also provided feedback on the benefits and limitations of different carbon footprinting metrics. In the three focus groups for non-financial sectors, participants in oil and gas and utilities industries provided specific feedback on their use of scenario analysis and challenges related to disclosing certain information in financial filings.

Outreach Events

The Task Force sponsored 18 public outreach events in 13 countries, and Task Force members presented the recommendations at 91 other events including conferences, forums, and meetings sponsored by industry associations, NGOs, government agencies, corporations, and other organizations. The 18 Task Force-sponsored events informed stakeholders of the Task Force's work and recommendations and included panel discussions and keynote speeches by prominent climate-risk and financial experts. Attendees included representatives of financial and non-financial organizations who spanned a variety of corporate functions, including strategy, risk, accounting, portfolio and investment management, corporate sustainability, as well as representatives from industry associations, NGOs, government agencies, research providers, academia, accounting and consulting firms, and media.

Webinars

Prior to the release of the report in December 2016 for public consultation, the Task Force offered seven webinars to educate and increase awareness of the Task Force's efforts as well as to collect additional feedback. Of the seven webinars, the Task Force hosted four webinars and participated in three additional webinars by partnering with the following organizations: Business for Social Responsibility, Global Financial Markets Association, and the National Association of Corporate Directors. These webinars served to supplement the in-person outreach events and offered global stakeholders, regardless of location, an opportunity to engage with the Task Force. The webinars included 538 attendees representing 365 organizations across 23 countries. After the release of the report, the Task Force held three webinars to present its recommendations and to solicit additional feedback. The three webinars included 255 attendees representing 209 organizations across 25 countries. In total, the Task Force offered ten webinars, reaching 793 attendees across 30 countries.

- A
Introduction
- B
Climate-Related Risks,
Opportunities, and
Financial Impacts
- C
Recommendations and
Guidance
- D
Scenario Analysis and
Climate-Related Issues
- E
Key Issues Considered and
Areas for Further Work
- F
Conclusion

Appendices

Appendix 3: Fundamental Principles for Effective Disclosure

To underpin its recommendations and help guide current and future developments in climate-related financial reporting, the Task Force developed a set of principles for effective disclosure.⁶³ As understanding of, and approaches to, climate-related issues evolve over time, so too will climate-related financial reporting. These principles can help achieve high-quality and decision-useful disclosures that enable users to understand the impact of climate change on organizations. The Task Force encourages organizations adopting its recommendations to consider these principles as they develop climate-related financial disclosures.

The Task Force's disclosure principles are largely consistent with other mainstream, internationally accepted frameworks for financial reporting and are generally applicable to most providers of financial disclosures. They are informed by the qualitative and quantitative characteristics of financial information and further the overall goals of producing disclosures that are consistent, comparable, reliable, clear, and efficient, as highlighted by the FSB in establishing the Task Force. The principles, taken together, are designed to assist organizations in making clear the linkages and connections between climate-related issues and their governance, strategy, risk management, and metrics and targets.

Principle 1: Disclosures should present relevant information

The organization should provide information specific to the potential impact of climate-related risks and opportunities on its markets, businesses, corporate or investment strategy, financial statements, and future cash flows.

- Disclosures should be eliminated if they are immaterial or redundant to avoid obscuring relevant information. However, when a particular risk or issue attracts investor and market interest or attention, it may be helpful for the organization to include a statement that the risk or issue is not significant. This shows that the risk or issue has been considered and has not been overlooked.
- Disclosures should be presented in sufficient detail to enable users to assess the organization's exposure and approach to addressing climate-related issues, while understanding that the type of information, the way in which it is presented, and the accompanying notes will differ between organizations and will be subject to change over time.
- Climate-related impacts can occur over the short, medium, and long term. Organizations can experience chronic, gradual impacts (such as impacts due to shifting temperature patterns), as well as acute, abrupt disruptive impacts (such as impacts from flooding, drought, or sudden regulatory actions). An organization should provide information from the perspective of the potential impact of climate-related issues on value creation, taking into account and addressing the different time frames and types of impacts.
- Organizations should avoid generic or boilerplate disclosures that do not add value to users' understanding of issues. Furthermore, any proposed metrics should adequately describe or serve as a proxy for risk or performance and reflect how an organization manages the risk and opportunities.

A
Introduction

B
Climate-Related Risks,
Opportunities, and
Financial Impacts

C
Recommendations and
Guidance

D
Scenario Analysis and
Climate-Related Issues

E
Key Issues Considered and
Areas for Further Work

F
Conclusion

Appendices

⁶³ These principles are adapted from those included in the Enhanced Disclosure Task Force's "Enhancing the Risk Disclosures of Banks."

Principle 2: Disclosures should be specific and complete

- An organization's reporting should provide a thorough overview of its exposure to potential climate-related impacts; the potential nature and size of such impacts; the organization's governance, strategy, processes for managing climate-related risks, and performance with respect to managing climate-related risks and opportunities.
- To be sufficiently comprehensive, disclosures should contain historical and future-oriented information in order to allow users to evaluate their previous expectations relative to actual performance and assess possible future financial implications.
- For quantitative information, the disclosure should include an explanation of the definition and scope applied. For future-oriented data, this includes clarification of the key assumptions used. Forward-looking quantitative disclosure should align with data used by the organization for investment decision making and risk management.
- Any scenario analyses should be based on data or other information used by the organization for investment decision making and risk management. Where appropriate, the organization should also demonstrate the effect on selected risk metrics or exposures to changes in the key underlying methodologies and assumptions, both in qualitative and quantitative terms.

A
Introduction

B
Climate-Related Risks,
Opportunities, and
Financial Impacts

C
Recommendations and
Guidance

D
Scenario Analysis and
Climate-Related Issues

E
Key Issues Considered and
Areas for Further Work

F
Conclusion

Appendices

Principle 3: Disclosures should be clear, balanced, and understandable

- Disclosures should be written with the objective of communicating financial information that serves the needs of a range of financial sector users (e.g., investors, lenders, insurers, and others). This requires reporting at a level beyond compliance with minimum requirements. The disclosures should be sufficiently granular to inform sophisticated users, but should also provide concise information for those who are less specialized. Clear communication will allow users to identify key information efficiently.
- Disclosures should show an appropriate balance between qualitative and quantitative information and use text, numbers, and graphical presentations as appropriate.
- Fair and balanced narrative explanations should provide insight into the meaning of quantitative disclosures, including the changes or developments they portray over time. Furthermore, balanced narrative explanations require that risks as well as opportunities be portrayed in a manner that is free from bias.
- Disclosures should provide straightforward explanations of issues. Terms used in the disclosures should be explained or defined for a proper understanding by the users.

Principle 4: Disclosures should be consistent over time

- Disclosures should be consistent over time to enable users to understand the development and/or evolution of the impact of climate-related issues on the organization's business. Disclosures should be presented using consistent formats, language, and metrics from period to period to allow for inter-period comparisons. Presenting comparative information is preferred; however, in some situations it may be preferable to include a new disclosure even if comparative information cannot be prepared or restated.
- Changes in disclosures and related approaches or formats (e.g., due to shifting climate-related issues and evolution of risk practices, governance, measurement methodologies, or accounting practices) can be expected due to the relative immaturity of climate-related disclosures. Any such changes should be explained.

Principle 5: Disclosures should be comparable among organizations within a sector, industry, or portfolio

- Disclosures should allow for meaningful comparisons of strategy, business activities, risks, and performance across organizations and within sectors and jurisdictions.
- The level of detail provided in disclosures should enable comparison and benchmarking of risks across sectors and at the portfolio level, where appropriate.
- The placement of reporting would ideally be consistent across organizations—i.e., in financial filings—in order to facilitate easy access to the relevant information.

Principle 6: Disclosures should be reliable, verifiable, and objective

- Disclosures should provide high-quality reliable information. They should be accurate and neutral—i.e., free from bias.
- Future-oriented disclosures will inherently involve the organization’s judgment (which should be adequately explained). To the extent possible, disclosures should be based on objective data and use best-in-class measurement methodologies, which would include common industry practice as it evolves.
- Disclosures should be defined, collected, recorded, and analyzed in such a way that the information reported is verifiable to ensure it is high quality. For future-oriented information, this means assumptions used can be traced back to their sources. This does not imply a requirement for independent external assurance; however, disclosures should be subject to internal governance processes that are the same or substantially similar to those used for financial reporting.

Principle 7: Disclosures should be provided on a timely basis

- Information should be delivered to users or updated in a timely manner using appropriate media on, at least, an annual basis within the mainstream financial report.
- Climate-related risks can result in disruptive events. In case of such events with a material financial impact, the organization should provide a timely update of climate-related disclosures as appropriate.

Reporters may encounter tension in the application of the fundamental principles set out above. For example, an organization may update a methodology to meet the comparability principle, which could then result in a conflict with the principle of consistency. Tension can also arise within a single principle. For example, Principle 6 states that disclosures should be verifiable, but assumptions made about future-oriented disclosures often require significant judgment by management that is difficult to verify. Such tensions are inevitable given the wide-ranging and sometimes competing needs of users and preparers of disclosures. Organizations should aim to find an appropriate balance of disclosures that reasonably satisfy the recommendations and principles while avoiding overwhelming users with unnecessary information.

A
Introduction

B
Climate-Related Risks,
Opportunities, and
Financial Impacts

C
Recommendations and
Guidance

D
Scenario Analysis and
Climate-Related Issues

E
Key Issues Considered and
Areas for Further Work

F
Conclusion

Appendices

Appendix 4: Select Disclosure Frameworks

To the extent there is corporate reporting of climate-related issues, it happens through a multitude of mandatory and voluntary schemes. Although a complete and comprehensive survey of existing schemes is beyond the scope of this report, the Task Force on Climate-related Financial Disclosures (TCFD or Task Force) considered a broad range of existing frameworks, both voluntary and mandatory. The tables in Appendix 4 outline select disclosure frameworks considered by the Task Force and describe a few key characteristics of each framework, including whether disclosures are mandatory or voluntary, what type of information is reported, who the target reporters and target audiences are, where the disclosed information is placed, and whether there are specified materiality standards.⁶⁴ These disclosure frameworks were chosen to illustrate the broad range of disclosure regimes around the world; the tables are broken out into disclosure frameworks sponsored by governments, stock exchanges, and non-governmental organizations (NGOs).

The information presented in the tables below (A4.1, A4.2, and A4.3) is based on information released by governments, stock exchanges, and standard setters and is supplemented by the United Nations Environment Programme (UNEP), “The Financial System We Need: Aligning the Financial System with Sustainable Development,” October 2015, and the Organization for Economic Co-operation and Development (OECD), “Report to G20 Finance Ministers and Central Bank Governors,” September 2015.

A
Introduction

B
Climate-Related Risks,
Opportunities, and
Financial Impacts

C
Recommendations and
Guidance

D
Scenario Analysis and
Climate-Related Issues

E
Key Issues Considered and
Areas for Further Work

F
Conclusion

Appendices

⁶⁴ These tables were originally included in the Task Force's Phase I Report and have been updated where appropriate.

Table A4.1

Select Disclosure Frameworks: Governments

Region: Framework	Target Reporter	Target Audience	Mandatory or Voluntary	Materiality Standard	Types of Climate- Related Information	Disclosure Location	External Assurance Required
Australia: National Greenhouse and Energy Reporting Act (2007)	Financial and non-financial firms that meet emissions or energy production or consumption thresholds	General public	Mandatory if thresholds are met	Based on emissions above a certain threshold	GHG emissions, energy consumption, and energy production	Report to government	Regulator may, by written notice to corporation, require an audit of its disclosures
European Union (EU): EU Directive 2014/95 regarding disclosure of non-financial and diversity information (2014)	Financial and non-financial firms that meet size criteria (i.e., have more than 500 employees)	Investors, consumers, and other stakeholders	Mandatory; applicable for the financial year starting on Jan. 1, 2017 or during the 2017 calendar year	None specified	Land use, water use, GHG emissions, use of materials, and energy use	Corporate financial report or separate report (published with financial report or on website six months after the balance sheet date and referenced in financial report)	Member States must require that statutory auditor checks whether the non-financial statement has been provided Member States may require independent assurance for information in non-financial statement
France: Article 173, Energy Transition Law (2015)	Listed financial and non-financial firms Additional requirements for institutional investors	Investors, general public	Mandatory	None specified	Risks related to climate change, consequences of climate change on the company's activities and use of goods and services it produces. Institutional investors: GHG emissions and contribution to goal of limiting global warming	Annual report and website	Mandatory review on the consistency of the disclosure by an independent third party, such as a statutory auditor
India: National Voluntary Guidelines on Social, Environmental, and Economic Responsibilities of Business (2011)	Financial and non-financial firms	Investors, general public	Voluntary	None specified	Significant risk, goals and targets for improving performance, materials, energy consumption, water, discharge of effluents, GHG emissions, and biodiversity	Not specified; companies may furnish a report or letter from owner/chief executive officer	Guidelines include third-party assurance as a "leadership indicator" of company's progress in implementing the principles

Table A4.1

Select Disclosure Frameworks: Governments *(continued)*

Region: Framework	Target Reporter	Target Audience	Mandatory or Voluntary	Materiality Standard	Types of Climate- Related Information	Disclosure Location	External Assurance Required
United Kingdom: Companies Act 2006 (Strategic Report and Directors' Report) Regulations 2013	Financial and non-financial firms that are "Quoted Companies," as defined by the Companies Act 2006	Investors / shareholders ("members of the company")	Mandatory	Information is material if its omission or misrepresentation could influence the economic decisions shareholders take on the basis of the annual report as a whole (section 5 of the UK FRC June 2014 Guidance on the Strategic Report)	The main trends and factors likely to affect the future development, performance, and position of the company's business, environmental matters (including the impact of the company's business on the environment), and GHG emissions	Strategic Report and Directors' Report	Not required, but statutory auditor must state in report on the company's annual accounts whether in the auditor's opinion the information given in the Strategic Report and the Directors' Report for the financial year for which the accounts are prepared is consistent with those accounts
United States: NAICs, 2010 Insurer Climate Risk Disclosure Survey	Insurers meeting certain premium thresholds - \$100M in 2015	Regulators	Mandatory if thresholds are met	None specified	General disclosures about climate change- related risk management and investment management	Survey sent to state regulators	Not specified
United States: SEC Guidance Regarding Disclosure Related to Climate Change	Financial and non-financial firms subject to Securities and Exchange Commission (SEC) reporting requirements	Investors	Mandatory	US securities law definition	Climate-related material risks and factors that can affect or have affected the company's financial condition, such as regulations, treaties and agreements, business trends, and physical impacts	Annual and other reports required to be filed with SEC	Depends on assurance requirements for information disclosed

Table A4.2

Select Disclosure Frameworks: Exchange Listing Requirements and Indices

Region: Framework	Target Reporter	Target Audience	Mandatory or Voluntary	Materiality Standard	Types of Climate- Related Information	Disclosure Location	External Assurance Required
Australia: Australia Securities Exchange Listing Requirement 4.10.3; Corporate Governance Principles and Recommendations (2014)	Listed financial and non-financial firms	Investors	Mandatory (comply or explain)	A real possibility that the risk in question could substantively impact the listed entity's ability to create or preserve value for security holders over the short, medium or long term	General disclosure of material environmental risks	Annual report must include either the corporate governance statement or company website link to the corporate governance statement on company's website	Not specified, may depend on assurance requirements for annual report
Brazil: Stock Exchange (BM&FBovespa) Recommendation of report or explain (2012)	Listed financial and non-financial firms	Investors, regulator	Voluntary (comply or explain)	Criteria explained in Reference Form (Annex 24) of the Instruction CVM n° 480/09	Social and environmental information including methodology used, if audited/reviewed by an independent entity, and link to information (i.e., webpage)	Discretion of company	Not specified
China: Shenzhen Stock Exchange Social Responsibility Instructions to Listed Companies (2006)	Listed financial and non-financial firms	Investors	Voluntary: social responsibilities Mandatory: pollutant discharge	None specified	Waste generation, resource consumption, and pollutants	Not specified	Not specified; companies shall allocate dedicated human resources for regular inspection of implementation of environmental protection policies
Singapore: Singapore Exchange Listing Rules 711A & 711B and Sustainability Reporting Guide (2016) ("Guide")	Listed financial and non-financial firms	Investors	Mandatory (comply or explain)	Guidance provided in the Guide, paragraphs 4.7-4.11	Material environmental, social, and governance factors, performance, targets, and related information specified in the Guide	Annual report or standalone report, disclosed through SGXNet reporting platform and company website	Not required

Table A4.2

Select Disclosure Frameworks: Exchange Listing Requirements and Indices *(continued)*

Region: Framework	Target Reporter	Target Audience	Mandatory or Voluntary	Materiality Standard	Types of Climate- Related Information	Disclosure Location	External Assurance Required
South Africa: Johannesburg Stock Exchange Listing Requirement Paragraph 8.63; King Code of Governance Principles (2009)	Listed financial and non-financial firms	Investors	Mandatory; (comply or explain)	None specified	General disclosure regarding sustainability performance	Annual report	Required
World, regional, and country-specific indices: S&P Dow Jones Indices Sustainability Index, Sample Questionnaires	Financial and non-financial firms	Investors	Voluntary	None specified	GHG emissions, SOx emissions, energy consumption, water, waste generation, environmental violations, electricity purchased, biodiversity, and mineral waste management	Nonpublic	Disclose whether external assurance was provided and whether it was pursuant to a recognized standard

Table A4.3

Select Disclosure Frameworks: Non-Governmental Organizations

Framework	Target Reporter	Target Audience	Mandatory or Voluntary	Materiality Standard	Types of Climate-Related Information	Disclosure Location	External Assurance Required
Global: Asset Owners Disclosure Project 2017 Global Climate Risk Survey	Pension funds, insurers, sovereign wealth funds ≥\$2bn AUM	Asset managers, investment industry, government	Voluntary	None specified	Information on whether climate change issues are integrated in investment policies, engagement efforts, portfolio emissions intensity for scope 1 emissions, climate change-related portfolio risk mitigation actions	Survey responses; respondents are asked whether responses may be made public	Disclose whether external assurance was provided
Global: CDP Annual Questionnaire (2016)	Financial and non-financial firms	Investors	Voluntary	None specified	Information on risk management procedures related to climate change risks and opportunities, energy use, and GHG emissions (Scope 1-3)	CDP database	Encouraged; information requested about verification and third party certification
Global: CDSB CDSB Framework for Reporting Environmental Information & Natural Capital	Financial and non-financial firms	Investors	Voluntary	Environmental information is material if (1) the environmental impacts or results it describes are, due to their size and nature, expected to have a significant positive or negative effect on the organization's current, past or future financial condition and operational results and its ability to execute its strategy or (2) omitting, misstating, or misinterpreting it could influence decisions that users of mainstream reports make about the organization	Environmental policies, strategy, and targets, including the indicators, plans, and timelines used to assess performance; material environmental risks and opportunities affecting the organization; governance of environmental policies, strategy, and information; and quantitative and qualitative results on material sources of environmental impact	Annual reporting packages in which organizations are required to deliver their audited financial results under the corporate, compliance or securities laws of the country in which they operate	Not required, but disclose if assurance has been provided over whether reported environmental information is in conformance with the CDSB Framework

Table A4.3

Select Disclosure Frameworks: Non-Governmental Organizations *(continued)*

Framework	Target Reporter	Target Audience	Mandatory or Voluntary	Materiality Standard	Types of Climate-Related Information	Disclosure Location	External Assurance Required
Global: CDSB Climate Change Reporting Framework, Ed. 1.1 (2012)	Financial and non-financial firms	Investors	Voluntary	Allow "investors to see major trends and significant events related to climate change that affect or have the potential to affect the company's financial condition and/or its ability to achieve its strategy"	The extent to which performance is affected by climate-related risks and opportunities; governance processes for addressing those effects; exposure to significant climate-related issues; strategy or plan to address the issues; and GHG emissions	Annual reporting packages in which organizations are required to deliver their audited financial results under the corporate, compliance or securities laws of the territory or territories in which they operate	Not required unless International Standards on Auditing 720 requires the auditor of financial statements to read information accompanying them to identify material inconsistencies between the audited financial statements and accompanying information
Global: GRESB Infrastructure Asset Assessment & Real Estate Assessment	Real estate asset/portfolio owners	Investors and industry stakeholders	Voluntary	None specified	Real estate sector-specific requirements related to fuel, energy, and water consumption and efficiencies as well as low-carbon products	Data collected through the GRESB Real Estate Assessment disclosed to participants themselves and: <ul style="list-style-type: none"> • for non-listed property funds and companies, to those of that company or fund's investors that are GRESB Investor Members; • for listed real estate companies, to all GRESB Investor Members that invest in listed real estate securities. 	Not required, but disclose whether external assurance was provided
Global: GRI Sustainability Reporting Standards (2016)	Organizations of any size, type, sector, or geographic location	All stakeholders	Voluntary	Topics that reflect the reporting organization's significant economic, environmental, and social impacts or substantively influence the decisions of stakeholders	Materials, energy, water, biodiversity, emissions, effluents and waste, environmental compliance, and supplier environmental assessment	Stand-alone sustainability reports or annual reports or other published materials that include sustainability information	Not required, but advised

Table A4.3

Select Disclosure Frameworks: Non-Governmental Organizations *(continued)*

Framework	Target Reporter	Target Audience	Mandatory or Voluntary	Materiality Standard	Types of Climate-Related Information	Disclosure Location	External Assurance Required
Global: IIGCC	Oil and gas industries	Investors	Voluntary	None specified	GHG emissions and clean technologies data	Not specified	Not specified
Oil & Gas (2010) Automotive (2009) Electric Utilities (2008)	Automotive industry	Investors	Voluntary	None specified	GHG emissions and clean technologies data	Company's discretion	Not specified
	Electrical utilities	Investors	Voluntary	None specified	GHG emissions and electricity production	Company's discretion	Disclose how GHG emissions information was verified
Global: IIRC International Integrated Reporting Framework (2013)	Public companies traded on international exchanges	Investors	Voluntary	Substantively affect the company's ability to create value over the short, medium, and long term	General challenges related to climate change, loss of ecosystems, and resource shortages	Standalone sustainability or integrated report	Not specified; discussion paper released on issues relating to assurance
Global: IPIECA Oil and gas industry guidance on voluntary sustainability reporting	Oil and gas industries	All stakeholders	Voluntary	Material sustainability issues are those that, in the view of company management and its external stakeholders, affect the company's performance or strategy and/or assessments or decisions about the company	Energy consumption	Sustainability reporting	Not required, but encouraged
Global: PRI Reporting Framework (2016)	Investors	Investors	Voluntary	None specified	Investor practices	Transparency report	Not specified
United States: SASB Conceptual Framework (2013) and SASB Standards (Various)	Public companies traded on US exchanges	Investors	Voluntary	A substantial likelihood that the disclosure of the omitted fact would have been viewed by the reasonable investor as having significantly altered the "total mix" of the information made available	Information on sustainability topics that are deemed material, standardized metrics tailored by industry	SEC filings	Depends on assurance requirements for information disclosed

Appendix 5: Glossary and Abbreviations

Glossary

BOARD OF DIRECTORS (or BOARD) refers to a body of elected or appointed members who jointly oversee the activities of a company or organization. Some countries use a two-tiered system where “board” refers to the “supervisory board” while “key executives” refers to the “management board.”⁶⁵

CLIMATE-RELATED OPPORTUNITY refers to the potential positive impacts related to climate change on an organization. Efforts to mitigate and adapt to climate change can produce opportunities for organizations, such as through resource efficiency and cost savings, the adoption and utilization of low-emission energy sources, the development of new products and services, and building resilience along the supply chain. Climate-related opportunities will vary depending on the region, market, and industry in which an organization operates.

CLIMATE-RELATED RISK refers to the potential negative impacts of climate change on an organization. Physical risks emanating from climate change can be event-driven (acute) such as increased severity of extreme weather events (e.g., cyclones, droughts, floods, and fires). They can also relate to longer-term shifts (chronic) in precipitation and temperature and increased variability in weather patterns (e.g., sea level rise). Climate-related risks can also be associated with the transition to a lower-carbon global economy, the most common of which relate to policy and legal actions, technology changes, market responses, and reputational considerations.

FINANCIAL FILINGS refer to the annual reporting packages in which organizations are required to deliver their audited financial results under the corporate, compliance, or securities laws of the jurisdictions in which they operate. While reporting requirements differ internationally, financial filings generally contain financial statements and other information such as governance statements and management commentary.⁶⁶

FINANCIAL PLANNING refers to an organization’s consideration of how it will achieve and fund its objectives and strategic goals. The process of financial planning allows organizations to assess future financial positions and determine how resources can be utilized in pursuit of short- and long-term objectives. As part of financial planning, organizations often create “financial plans” that outline the specific actions, assets, and resources (including capital) necessary to achieve these objectives over a 1-5 year period. However, financial planning is broader than the development of a financial plan as it includes long-term capital allocation and other considerations that may extend beyond the typical 3-5 year financial plan (e.g., investment, research and development, manufacturing, and markets).

GOVERNANCE refers to “the system by which an organization is directed and controlled in the interests of shareholders and other stakeholders.”⁶⁷ “Governance involves a set of relationships between an organization’s management, its board, its shareholders, and other stakeholders. Governance provides the structure and processes through which the objectives of the organization are set, progress against performance is monitored, and results are evaluated.”⁶⁸

A
Introduction

B
Climate-Related Risks,
Opportunities, and
Financial Impacts

C
Recommendations and
Guidance

D
Scenario Analysis and
Climate-Related Issues

E
Key Issues Considered and
Areas for Further Work

F
Conclusion

Appendices

⁶⁵ OECD, *G20/OECD Principles of Corporate Governance*, OECD Publishing, Paris, 2015.

⁶⁶ Based on Climate Disclosure Standards Board, “CDSB Framework for Reporting Environmental Information and Natural Capital,” June 2015.

⁶⁷ A. Cadbury, *Report of the Committee on the Financial Aspects of Corporate Governance*, London, 1992.

⁶⁸ OECD, *G20/OECD Principles of Corporate Governance*, OECD Publishing, Paris, 2015.

GREENHOUSE GAS (GHG) EMISSIONS SCOPE LEVELS⁶⁹

- **Scope 1** refers to all direct GHG emissions.
- **Scope 2** refers to indirect GHG emissions from consumption of purchased electricity, heat, or steam.
- **Scope 3** refers to other indirect emissions not covered in Scope 2 that occur in the value chain of the reporting company, including both upstream and downstream emissions. Scope 3 emissions could include: the extraction and production of purchased materials and fuels, transport-related activities in vehicles not owned or controlled by the reporting entity, electricity-related activities (e.g., transmission and distribution losses), outsourced activities, and waste disposal.⁷⁰

INTERNAL CARBON PRICE is an internally developed estimated cost of carbon emissions. Internal carbon pricing can be used as a planning tool to help identify revenue opportunities and risks, as an incentive to drive energy efficiencies to reduce costs, and to guide capital investment decisions.

MANAGEMENT refers to those positions an organization views as executive or senior management positions and that are generally separate from the board.

NATIONALLY DETERMINED CONTRIBUTION (NDC) refers to the post-2020 actions that a country intends to take under the international climate agreement adopted in Paris.

ORGANIZATION refers to the group, company, or companies, and other entities for which consolidated financial statements are prepared, including subsidiaries and jointly controlled entities.

PUBLICLY AVAILABLE 2°C SCENARIO refers to a 2°C scenario that is (1) used/referenced and issued by an independent body; (2) wherever possible, supported by publicly available datasets; (3) updated on a regular basis; and (4) linked to functional tools (e.g., visualizers, calculators, and mapping tools) that can be applied by organizations. 2°C scenarios that presently meet these criteria include: IEA 2DS, IEA 450, Deep Decarbonization Pathways Project, and International Renewable Energy Agency.

RISK MANAGEMENT refers to a set of processes that are carried out by an organization's board and management to support the achievement of the organization's objectives by addressing its risks and managing the combined potential impact of those risks.

SCENARIO ANALYSIS is a process for identifying and assessing a potential range of outcomes of future events under conditions of uncertainty. In the case of climate change, for example, scenarios allow an organization to explore and develop an understanding of how the physical and transition risks of climate change may impact its businesses, strategies, and financial performance over time.

SECTOR refers to a segment of organizations performing similar business activities in an economy. A sector generally refers to a large segment of the economy or grouping of business types, while "industry" is used to describe more specific groupings of organizations within a sector.

STRATEGY refers to an organization's desired future state. An organization's strategy establishes a foundation against which it can monitor and measure its progress in reaching that desired state. Strategy formulation generally involves establishing the purpose and scope of the

A
Introduction

B
Climate-Related Risks,
Opportunities, and
Financial Impacts

C
Recommendations and
Guidance

D
Scenario Analysis and
Climate-Related Issues

E
Key Issues Considered and
Areas for Further Work

F
Conclusion

Appendices

⁶⁹ World Resources Institute and World Business Council for Sustainable Development, *The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition)*, March 2004.

⁷⁰ IPCC, *Climate Change 2014 Mitigation of Climate Change*, Cambridge University Press, 2014.

organization’s activities and the nature of its businesses, taking into account the risks and opportunities it faces and the environment in which it operates.

SUSTAINABILITY REPORT is an organizational report that gives information about economic, environmental, social, and governance performance and impacts. For companies and organizations, sustainability—the ability to be long-lasting or permanent—is based on performance and impacts in these four key areas.

VALUE CHAIN refers to the upstream and downstream life cycle of a product, process, or service, including material sourcing, production, consumption, and disposal/recycling. Upstream activities include operations that relate to the initial stages of producing a good or service (e.g., material sourcing, material processing, supplier activities). Downstream activities include operations that relate to processing the materials into a finished product and delivering it to the end user (e.g., transportation, distribution, and consumption).

Abbreviations

2°C —2° Celsius	IEA —International Energy Agency
ASC —Accounting Standards Codification	IIGCC —Institutional Investors Group on Climate Change
BNEF —Bloomberg New Energy Finance	IIRC —International Integrated Reporting Council
CDSB —Climate Disclosure Standards Board	IPCC —Intergovernmental Panel on Climate Change
ERM —Environmental Resources Management	NGO —Non-governmental organization
EU —European Union	OECD —Organization for Economic Co-operation and Development
FASB —Financial Accounting Standards Board	R&D —Research and development
FSB —Financial Stability Board	SASB —Sustainability Accounting Standards Board
G20 —Group of 20	TCFD —Task Force on Climate-related Financial Disclosures
GHG —Greenhouse gas	UN —United Nations
GICS —Global Industry Classification Standard	UNEP —United Nations Environment Programme
GRI —Global Reporting Initiative	USDE —U.S. Dollar Equivalent
IAS —International Accounting Standard	WRI —World Resources Institute
IASB —International Accounting Standards Board	

A	Introduction
B	Climate-Related Risks, Opportunities, and Financial Impacts
C	Recommendations and Guidance
D	Scenario Analysis and Climate-Related Issues
E	Key Issues Considered and Areas for Further Work
F	Conclusion

Appendices

Appendix 6: References

- “Communiqué from the G20 Finance Ministers and Central Bank Governors Meeting in Washington, D.C. April 16-17, 2015.” April 2015. www.g20.org.tr/wp-content/uploads/2015/04/April-G20-FMCBG-Communique-Final.pdf.
- Cadbury, A. *Report of the Committee on the Financial Aspects of Corporate Governance*. London, 1992. www.ecgi.org/codes/documents/cadbury.pdf.
- Carney, Mark. “Breaking the tragedy of the horizon—climate change and financial stability.” September 29, 2015. www.bankofengland.co.uk/publications/Pages/speeches/2015/844.aspx.
- Ceres. “Power Forward 3.0: How the largest US companies are capturing business value while addressing climate change.” 2017. <https://www.worldwildlife.org/publications/power-forward-3-0-how-the-largest-us-companies-are-capturing-business-value-while-addressing-climate-change>.
- Climate Disclosure Standards Board (CDSB). “CDSB Framework for Reporting Environmental Information and Natural Capital.” June 2015. www.cdsb.net/sites/cdsbnet/files/cdsb_framework_for_reporting_environmental_information_natural_capital.pdf.
- Economist Intelligence Unit. “The Cost of Inaction: Recognising the Value at Risk from Climate Change.” 2015. <https://www.eiuperspectives.economist.com/sustainability/cost-inaction>.
- Enhanced Disclosure Task Force. *Enhancing the Risk Disclosures of Banks*. October 2012. www.fsb.org/wp-content/uploads/r_121029.pdf.
- Environmental Protection Agency Victoria (EPA Victoria). “Resource Efficiency Case Studies, Lower your impact.” www.epa.vic.gov.au/business-and-industry/lower-your-impact/resource-efficiency/case-studies.
- Fellow, Avery. “Investors Demand Climate Risk Disclosure.” *Bloomberg*, February 2013. www.bloomberg.com/news/2013-02-25/investors-demand-climate-risk-disclosure-in-2013-proxies.html.
- Frankfurt School-United Nations Environmental Programme Centre and Bloomberg New Energy Finance. “Global Trends in Renewable Energy Investment 2017.” 2017. fs-unep-centre.org/sites/default/files/publications/globaltrendsrenewableenergyinvestment2017.pdf.
- Fricko, Oliver et. al. *Energy sector water use implications of a 2° C climate policy*. Environmental Research Letters, 11: 1-10, 2016. www.cd-links.org/wp-content/uploads/2016/06/Fricko-et-al-2016.pdf.
- FSB. “FSB to establish Task Force on Climate-related Financial Disclosures.” December 4, 2015. www.fsb-tcfd.org/wp-content/uploads/2016/01/12-4-2015-Climate-change-task-force-press-release.pdf.
- FSB. “Proposal for a Disclosure Task Force on Climate-Related Risks.” November 9, 2015. www.fsb.org/wp-content/uploads/Disclosure-task-force-on-climate-related-risks.pdf.
- G20 Green Finance Study Group. *G20 Green Finance Synthesis Report*. 2016. unepinquiry.org/wp-content/uploads/2016/09/Synthesis_Report_Full_EN.pdf.
- Ganci, N., S. Hammer, T. Reilly, and P. Rodel. *Environmental and Climate Change Disclosure under the Securities Laws: A Multijurisdictional Survey*. Debevoise & Plimpton, March 2016. www.debevoise.com/insights/publications/2016/03/environmental-and-climate-change-disclosure.
- Greenhouse Gas Protocol. “Calculation Tools, FAQ.” ghgprotocol.org/calculation-tools-faq.
- Intergovernmental Panel on Climate Change (IPCC). *Fifth Assessment Report (AR5)*, Cambridge University Press, 2014. <http://www.ipcc.ch/report/ar5/>.
- IPCC. *Climate Change 2014 Mitigation of Climate Change*. Cambridge University Press, 2014.
- International Energy Agency (IEA). “Global energy investment down 8% in 2015 with flows signaling move towards cleaner energy.” September 14, 2016. www.iea.org/newsroom/news/2016/september/global-energy-investment-down-8-in-2015-with-flows-signalling-move-towards-clean.html.
- IEA. *World Energy Outlook Special Briefing for COP21*. 2015. www.iea.org/media/news/WEO_INDC_Paper_Final_WEB.PDF.
- Maack, J. *Scenario Analysis: A Tool for Task Managers*. Social Analysis: selected tools and techniques, Social Development Papers, Number 36, the World Bank, June 2001, Washington, DC. siteresources.worldbank.org/INTPSIA/Resources/490023-1121114603600/13053_scenarioanalysis.pdf.

A
Introduction

B
Climate-Related Risks,
Opportunities, and
Financial Impacts

C
Recommendations and
Guidance

D
Scenario Analysis and
Climate-Related Issues

E
Key Issues Considered and
Areas for Further Work

F
Conclusion

Appendices

A
Introduction

B
Climate-Related Risks,
Opportunities, and
Financial Impacts

C
Recommendations and
Guidance

D
Scenario Analysis and
Climate-Related Issues

E
Key Issues Considered and
Areas for Further Work

F
Conclusion

Appendices

- Mercer LLC. *Investing in a Time of Climate Change*. 2015.
www.mercer.com/our-thinking/investing-in-a-time-of-climate-change.html.
- Organization for Economic Co-operation and Development (OECD) and Climate Disclosure Standards Board (CDSB). *Climate Change Disclosure in G20 Countries: Stocktaking of Corporate Reporting Schemes*. November 18, 2015. www.oecd.org/investment/corporate-climate-change-disclosure-report.htm.
- OECD. *G20/OECD Principles of Corporate Governance*. OECD Publishing, Paris, 2015.
dx.doi.org/10.1787/9789264236882-en.
- Pearce, David W. and R. Kerry Turner. "Economics of Natural Resources and the Environment." Johns Hopkins University Press. 1989. ISBN 978-0801839870.
- Rounsevell, Mark D. A. and Marc J Metzger. *Developing qualitative scenario storylines for environmental change assessment*. WIREs Climate Change 2010, 1: 606-619. doi: 10.1002/wcc.63, 2010.
wires.wiley.com/WileyCDA/WiresArticle/wisId-WCC63.html.
- Seley, Peter. "Emerging Trends in Climate Change Litigation." *Law 360*. March 7, 2016.
www.law360.com/articles/766214/emerging-trends-in-climate-change-litigation.
- Sustainability Accounting Standards Board (SASB). *SASB Climate Risk Technical Bulletin#: TB001-10182016*. October, 2016. library.sasb.org/climate-risk-technical-bulletin.
- Task Force on Climate-related Financial Disclosures. *Phase I Report of the Task Force on Climate-related Financial Disclosures*. March 31, 2016.
www.fsb-tcfd.org/wp-content/uploads/2016/03/Phase_I_Report_v15.pdf.
- United Nations Environment Programme (UNEP). *The Financial System We Need: Aligning the Financial System with Sustainable Development*. 2015.
http://unepinquiry.org/wp-content/uploads/2015/11/The_Financial_System_We_Need_EN.pdf.
- UNEP and Copenhagen Centre for Energy Efficiency. *Best Practices and Case Studies for Industrial Energy Efficiency Improvement*. February 16, 2016.
www.energyefficiencycentre.org/Nyheder/Nyhed?id=b2bedb2b-05a3-444f-ae5e-55ee3c8f1a68.
- United Nations Framework Convention on Climate Change. "The Paris Agreement," December 2015.
unfccc.int/files/essential_background/convention/application/pdf/english_paris_agreement.pdf.
- World Business Council for Sustainable Development. "Sustainability and enterprise risk management: The first step towards integration." January 18, 2017.
www.wbcsd.org/contentwbc/download/2548/31131.
- World Resources Institute and World Business Council for Sustainable Development. *The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard*, (Revised Edition). March 2004.
www.ghgprotocol.org/standards/corporate-standard.