Corporate Knights Capital

MEASURING SUSTAINABILITY DISCLOSURE:

RANKING THE WORLD'S STOCK EXCHANGES

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This report investigates the extent to which the world's publicly traded companies are disclosing the seven "first-generation" sustainability indicators: employee turnover, energy, greenhouse gas emissions (GHGs), injury rate, payroll, waste and water. Analysis is aggregated at the level of individual stock exchanges and includes an examination of disclosure rates based on the most recent completed reporting period (2012), growth in disclosure rates on a trailing five-year basis (2008–2012) and disclosure timeliness.

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Corporate Knights Capital (CKC) is an investment advisory and research firm based in Toronto, Canada. CKC is a certified B Corporation and a proud signatory of the United Nations-supported Principles for Responsible Investment (PRI). CKC's mission is to accelerate the transition to long-term, sustainable capitalism by building world-class investment portfolios for the global investment community. For more information about CKC, please visit www.corporateknightscapital.com.

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Notes

The opinions expressed in this report are those of Corporate Knights Capital and do not necessarily reflect the views of Aviva, Standard & Poor's Ratings Services or ACCA.

Comments on this paper are invited and may be addressed to the authors at capital@corporateknights.com.

FOREWORD

Sustainability Trends

Effecting behavioural change in business, the investment chain and capital markets will take time.

For the next generation to avoid the mistakes of the last, we have to mark out a different course for our economy based on the foundations of financial stability and sustainability. This is a grand ambition, but as this report highlights, we are starting to see moves in the right direction.

The success stories in this report are cause for optimism. We should continue to encourage jurisdictions to learn from each other and embrace a new reporting landscape that drives high-quality capital market decision-making, whilst at the same time increasing the volume of the global conversation about the necessity of change in corporate reporting. We need to involve a much wider community in the call for new systems and models to help economies, businesses and investors respond to a world in which risks and opportunities cannot be isolated. This needs to be managed in a truly holistic way in order to foster the conditions for financial stability and sustainability.

It is no surprise to me to see Johannesburg ranked in the top three exchanges – South Africa was the trailblazer for <IR>, and it is a testament to the success of <IR> in practice that the country has again been ranked first in the world in terms of its standards of corporate reporting and the effectiveness of its company boards by the World Economic Forum's Global Competitiveness Report for 2014-15.

For capitalism to take a new direction, institutions, businesses and investors must think about value creation in a holistic sense when formulating strategy and allocating dwindling resources, particularly as they seek to build long-term value. The businesses leading the way are those that are anticipating and responding to the changing needs of their stakeholder community, society and the external environment.

These businesses understand the drivers of value – the capitals they use and affect – and the impact they have on their business model. These include the risks associated with resource scarcity, climate change, demographic shifts and other macro-environmental factors. They are communicating how their business is responding to changes in stakeholder needs and expectations and how their business model is creating value through multiple resources and relationships – people, ideas, natural resources and the community in which they do business.

We know that reporting influences behaviour, so corporate reporting reform should encourage behaviour that focuses on longer-term value creation in order to achieve financial stability and sustainability. In markets as diverse as South Africa, Singapore, the U.K., Malaysia, Japan, Australia and the Netherlands, we are seeing the birth of the concept of "stewardship" embedded in investor codes which, together with corporate governance and reporting, provide the pillars of effective management and disclosure, focused on understanding and embedding the conditions for long-term value creation.

Stock exchanges are starting to listen and take action. In Brazil, BM&FBOVESPA recently announced that it would be encouraging businesses listed on its platform to produce an integrated report (or sustainability report) on a"report-or-explain" basis. And the European Commission has described <IR> as "a step ahead" of its own efforts to transform the corporate reporting landscape for 6,000 EU listed entities. Earlier this year, Malaysia issued its stewardship code, and the Singapore Stock Exchange will be the first Asian exchange to join the new <IR> Business Network. It is encouraging to see in this report that the greatest improvements in first-generation indicator reporting are occurring in emerging markets, a trend that aligns with the increasing engagement with <IR>.

Paul Druckman
CEO, International Integrated Reporting Council

FOREWORD

Rating Sustainability

As a credit rating agency with more than 1.1 million ratings outstanding across 130 countries, Standard & Poor's Ratings Services has the benefit of observing and analyzing risks that emerge in financial markets around the world. Some of these trends also have an effect far beyond financial markets, including one of the key macro-trends of our time: the drive toward sustainability in our societies.

From floods and typhoons to growing competition for water supplies and the needs of aging populations, sustainability issues are increasingly relevant to risk factors across sectors and time. S&P's sovereign analysts expect climate change – one key sustainability component – to have an impact on the creditworthiness of countries via changes to their economic and fiscal performance, as well as their performance vis-à-vis their trading partners and creditors. Given current trends, we also project that climate change will have an uneven effect on sovereign credit ratings, with the poorer and lower-rated sovereigns hit hardest.

Consistent with Standard & Poor's 150-year-old philosophy of "The Investor's Right To Know," reliable and consistent data on financial metrics are key components in the investment decision-making process. Enhanced disclosure of sustainability indicators is valuable in helping to further integrate these increasingly relevant factors into investors' research and can help institutions better protect against risks. A major player in the energy industry, for example, has begun publishing details of its climate risk exposure from stranded assets – oil and gas reserves that the company could not exploit if regulations tightened. This is a signal of the growing acceptance among companies and investors that sustainability-related risks are increasingly material to corporate performance and value.

This report helps to shine a light on where key sustainability data are available from companies around the world and where there are gaps to fill.

Over the long term, the trend has been toward increased levels of transparency in financial markets. In our experience, greater transparency benefits investors and, by aiding more efficient allocation of capital, benefits the economy as a whole.

Neeraj Sahai
President
Standard & Poor's Ratings Services

FOREWORD

Shared Responsibility

Aviva is proud to have been closely involved in promoting sustainability amongst businesses listed on global exchanges since 2008. And since 2012 Aviva has partnered with Corporate Knights to produce an annual report, ranking how well global stock exchanges are encouraging listed companies to disclose basic data on corporate responsibility.

The value of this work speaks for itself. We all have a shared responsibility and a shared interest in seeing listed companies - and large listed companies in particular – measure and disclose how sustainably they are performing. At Aviva this is embedded in one of our core values – to create legacy – or as I call it, being a good ancestor.

The initiative has achieved a great deal, with a significant growth in membership and the launch of formal UN guidance.

This is welcome progress, but ultimately the only true measure of success will be achieving the initiative's main objective: greater access to data on sustainability from listed companies.

This year's report contains some real success stories:

- The Helsinki Stock Exchange has climbed steadily from third to first since we first conducted the analysis three years ago.
- Euronext Amsterdam – up from tenth last year to second this year; and
- The Johannesburg Stock Exchange – the only stock exchange in this year's top 10 based in an emerging market, And, in my view, unquestionably a beneficiary of the much lauded "comply or explain" rule from the King Code of Governance (also known as King III).

But it also shows just how far we still have to travel. The UNCTAD guidance for policy makers is a step in the right direction, so the direction of travel, if not the speed, is right.

There is a clear need for a global mandate and a globally coordinated approach to corporate sustainability reporting, which is clearly understood and consistently applied.

A proliferation of national approaches, as well as overlapping and competing voluntary international standards and guidance, has led to difficulties in interpretation and implementation for companies operating in different countries and markets. IOSCO has intervened fruitfully in similar areas in the past. An IOSCO intervention on narrative reporting might therefore be the spur to a global solution to this challenge.

I would like to congratulate everyone who has contributed to this important work and would like to thank Corporate Knights in particular for being such excellent research partners.

Mark Wilson,
Group Chief Executive Officer
Aviva

Executive Summary

This report shows that the world's large listed companies – essentially the complete set of global mid- and large-cap equities – are failing to disclose their performance on seven basic sustainability metrics. Only 128 of the world's 4,609 large listed companies (2.8%) currently disclose all of the seven "first-generation" sustainability indicators: employee turnover, energy, greenhouse gas emissions (GHGs), injury rate, payroll, waste and water. The number of companies disclosing each of these metrics is higher but still disconcertingly low. Only 39% of the world's large listed companies currently disclose their GHGs. Only 25% disclose their water consumption. And only 12% disclose their employee turnover rate.

Equally troubling is that disclosure rates on the seven first-generation indicators appear to be plateauing. As one illustration, the number of large listed companies that disclosed their energy use increased by 88% from 2008 to 2012 but only by 5% from 2011 to 2012. A similar reporting slowdown is occurring on the other first-generation indicators.

The paucity of corporate reporting on the first-generation indicators stands in stark contrast to investors' growing interest in building sustainable investment strategies.

The recent announcement of a global investor coalition seeking to decarbonize US$100 billion of institutional investment and carbon footprint US$500 billion of institutional investment by next December's UN Climate Summit in Paris shows that investors are looking to operationalize GHGs – arguably the most important of the first-generation indicators – at the hundred-billion-dollar scale.

While companies can face barriers in setting up systems to measure and publicly disclose their performance on the seven first-generation indicators, the opportunity cost of opaqueness is rising.

While our study shows that quantitative sustainability reporting is generally lacking across the world's equity markets, it also identifies pockets of success – and reason for optimism.

Taking top spot in this year's ranking, the Helsinki Stock Exchange stands out as the exemplary performer. The 23 large companies that trade on the Helsinki Stock Exchange currently offer their stakeholders comprehensive and timely disclosures across each of the seven first-generation indicators.

The Euronext Amsterdam took second spot, followed by the Johannesburg Stock Exchange (third), Euronext Paris (fourth), the Copenhagen Stock Exchange (fifth), Euronext Lisbon (sixth), Oslo Stock Exchange (seventh), BME Spanish Exchanges (eighth), London Stock Exchange (ninth) and Australian Securities Exchange (10th). Noticeably absent in the top 10 are any North American exchanges.

Companies trading on these exchanges sit at the vanguard of quantitative sustainability reporting. And while their success cannot be (solely) attributed to the actions of the exchanges on which their shares trade, it does point to the existence of favourable, broad-based reporting conditions that could potentially be replicated in other jurisdictions.

Top 10

FIGURE 1: TOP 10 EXCHANGES BY OVERALL SCORE

Rank 2014	Rank 2013	Rank 2012	Exchange Name	Country	Number of Large Listed Companies as of July 1, 2014	Overall Score (out of 100)
1	2	3	Helsinki Stock Exchange	Finland	23	76
2	10	1	Euronext Amsterdam	Netherlands	35	74
3	5	5	Johannesburg Stock Exchange	South Africa	54	73
4	6	10	Euronext Paris	France	122	73
5	7	2	Copenhagen Stock Exchange	Denmark	22	72
6	14	16	Euronext Lisbon	Portugal	11	72
7	4	7	Oslo Stock Exchange	Norway	19	71
8	1	4	BME Spanish Exchanges	Spain	47	68
9	11	12	London Stock Exchange	United Kingdom	223	68
10	17	11	Australian Securities Exchange	Australia	96	67

Key Findings

- The Helsinki Stock Exchange was the top overall performer in this year's ranking. Among the exchange's more impressive statistics, 21 of its 23 large listings currently disclose payroll data (91%), 20 disclose GHGs (87%) and 19 disclose energy (83%).
- The Philippine Stock Exchange was found to have the most rapid growth in first-generation indicator reporting. The exchange's 35 large listings are quickly building out their sustainability reporting systems, and disclosure across the first-generation metrics (particularly energy and GHGs) is flourishing.
- The greatest improvements in first-generation indicator reporting are occurring on emerging markets-based stock exchanges. Companies trading in China, Colombia, Malaysia, Mexico, the Philippines, Thailand and Turkey are quickly closing the "disclosure gap" between themselves and listed companies trading in developed markets.
- The Shanghai Stock Exchange and Shenzhen Stock Exchange are home to the world's quickest sustainability reporters.
- Over one-third (37%) of large listed companies issue their sustainability reports more than six months after their financial year-end.
- The Johannesburg Stock Exchange (JSE) is the only stock exchange in this year's top 10 based in an emerging market and one of the few exchanges from last year's top 10 that improved this year. The performance of the JSE has almost certainly been helped by the exchange's much-lauded "comply or explain" rule concerning the King Code of Governance (King III).
- The most improved exchange in this year's ranking was Turkey's Borsa Istanbul, which climbed 21 spots to 11th position. Borsa Istanbul's striking improvement is likely the result of many different factors, including recent disclosure guidelines put forward by the Turkish securities regulator.
- Less than 3% of the world's 4,609 large listed companies currently disclose all seven first generation indicators.
- Thirty-nine per cent of large listed companies disclosed their GHGs in 2012.
- The materials sector has the top disclosure rate on five of seven indicators (energy, GHGs, injury rate, waste and water).
- The financial sector has the poorest disclosure rate on four indicators (GHGs, Injury rate, Waste and Water), although the materiality of these indicators for most financial companies is questionable.
- The telecommunication services sector has the highest disclosure rate on employee turnover (22%) and payroll (75%).
- The energy sector is a surprisingly poor discloser of energy, GHGs and water data, with respective disclosure rates of 31%, 32% and 20%.

3%

The percentage of the world's 4,609 large listed companies that disclosed all seven first-generation indicators in 2012.

39%

The proportion of the world's large listed companies that publicly disclosed their GHGs in 2012.

Recommendations

- We urge policy-makers of all description to arrest the slowdown in quantitative, indicator-based corporate sustainability reporting by implementing policies that encourage or mandate listed companies (and large listed companies in particular) to measure and publicly disclose their performance on the seven first-generation sustainability indicators.
- We further recommend that policy-makers take the necessary steps to minimize the time gap between companies' financial and sustainability reporting cycles. Closing this gap will significantly enhance the actionability of corporate sustainability information and performance data.
- We encourage the world's three major sustainability standard-setters – the Carbon Disclosure Project (CDP), the Global Reporting Initiative (GRI), and the Sustainability Accounting Standards Board (SASB) – to harmonize, to the greatest extent possible, their competing reporting methodologies and guidelines. As one measure of progress, these organizations have joined the Corporate Reporting Dialogue alongside financial reporting standard-setters IASB and FASB under the umbrella of the IIRC.
- We recommend that stock exchanges engage their listed companies and determine the extent to which they already engage in indicator-specific sustainability reporting. The results of this research could feed into a graduated approach for embedding sustainability disclosure requirements into stock exchange listing standards.
- We recommend that stock exchanges implement mechanisms to tie a portion of their senior executives' variable remuneration to the sustainability disclosure practices of their listed companies.

THE PAUCITY OF CORPORATE REPORTING ON THE FIRST-GENERATION INDICATORS STANDS IN STARK CONTRAST TO INVESTORS' GROWING INTEREST IN BUILDING SUSTAINABLE INVESTMENT STRATEGIES.

Introduction

Welcome to the third edition of Corporate Knights Capital's analysis of sustainability disclosure trends on the world's stock exchanges. Our objective with this report is unchanged – to rank the world's stock exchanges based on the sustainability disclosure practices of their listed companies. As in the previous two reports in this series, we focus our analysis on the extent to which the world's large listed companies are disclosing seven specific sustainability metrics – what we have termed the seven "first-generation" sustainability indicators.

We concentrate our analysis on these seven indicators because they are objective measures of corporate sustainability performance that are broadly relevant for companies in all industries.

This study's primary aim is to determine which stock exchanges are home to the world's most advanced sustainability reporters. The ranking model that we built for this purpose evaluates stock exchanges on three factors:

i) the proportion of their large listed companies that disclosed the seven first-generation indicators in the most recent completed reporting period (2012);
ii) how the disclosure practices of their large listed companies have been trending on a five-year trailing basis (2008–2012); and
iii) how quickly their large listed companies publish sustainability data after their fiscal year-end.

Because our ranking model has effectively been held constant since first being introduced in our inaugural report in June 2012, it can offer unique insights into how a stock exchange's "sustainability disclosure performance" is trending over time. This information can help stock exchange executives assess the real-world effects of new listing standards. Similarly, it can aid government officials seeking to measure the impact of policies aimed at promoting sustainability disclosure.

Our study can also be used as a benchmarking tool for stock exchanges looking to keep pace with a core set of comparable stock exchanges on sustainability disclosure performance.

For investors, this paper identifies those equity markets that sit on the most robust pools of quantitative corporate sustainability data. This analysis can help investors determine where, across the global mid- and large-cap asset class, they are most likely to find securities that disclose specific sustainability metrics, such as water consumption or payroll data. Due to rising demands for environmental, social and governance (ESG) integration from asset owners and the growing materiality of ESG metrics, this type of information is increasingly being used by asset managers in portfolio construction.[1] While the barriers to fully harnessing this information are formidable, the potential market for sustainable investment strategies has surpassed US$45 trillion.[2]

1. Hélène Roy. "Trends in ESG Integration in Investments: Summary of the Latest Research and Recommendations to Attract Long-Term Investors." BSR, August, 2012. File available at: https://www.bsr.org/reports/BSR_Trends_in_ESG_Integration.pdf. File accessed August 25, 2014.
2. As one measure, the number of signatories to the United Nations-supported Principles for Responsible Investment have grown to 276 asset owners and 812 asset managers, with collective assets under management of $US45 trillion. www.unpri.org/news/pri-fact-sheet/. File accessed August 27, 2014.

BREAKOUT DISCUSSION

The seven first-generation sustainability indicators

This report investigates the extent to which the world's large listed companies are disclosing the seven first-generation sustainability indicators. Figure 2 describes the seven first-generation indicators and shows the proportion of the world's 4,609 large listed companies that disclosed each indicator in 2012.[3]

FIGURE 2: THE FIRST-GENERATION SUSTAINABILITY INDICATORS

First-Generation Sustainability Indicator	Global Reporting Initiative (GRI) Indicator	Bloomberg ESG Field	Disclosure Rate, 2012	Reporting Rationale
Employee turnover	LA2	(i) Percentage employee turnover	12%	Low employee turnover is often correlated with effective human capital management and talent retention, which are well-established returns drivers in many sectors.
Energy	EN3, EN4	(i) Total energy use; (ii) Total electricity use; (iii) CDP fuel use; and (iv) CDP electricity use	40%	Energy use can be an important proxy for firm-wide resource use efficiency and an increasingly important cost centre for companies in many industries.
GHGs	EN16	(i) Total GHG emissions; (ii) Total CO_2 emissions; (iii) Scope 3 GHG emissions; (iv) CDP Scope 1 emissions globally; (v) CDP Scope 2 emissions globally; and (vi) CDP reported CO_2	39%	The prospect of carbon regulation is leading to a growing monetization of GHG externalities, with the concept of carbon shadow pricing an increasingly utilized accounting tool.
Injury rate	LA7	(i) Lost-time incident rate; and (ii) personal injury frequency rate	11%	Workplace health and safety can be a useful proxy for management quality.
Payroll	LA3	(i) Personnel expenses	59%	Pay equity is an increasingly visible sustainability theme, with tightening rules around workforce and CEO pay disclosure, and greater vigilance of excessive CEO compensation. Payroll also provides insight to how well a company is positioned to retain and attract the best talent.
Waste	EN22	(i) Total waste; (ii) waste recycled; and (iii) waste landfilled	23%	Waste generated per unit of revenue can be an insightful measure of operational efficiency.
Water	EN8	(i) Total water use; (ii) water withdrawal; (iii) surface water withdrawal; (iv) total water discharge; and (v) recycled water	25%	Water is an increasingly scarce global resource, and a firm's water use practices can reflect management foresight.

Source: The Global Reporting Initiative, Bloomberg, Corporate Knights Capital

3. Large companies are defined as those with more than US$2 billion in market capitalization as of the close of trading on July 1, 2014. From a starting universe of 68,022 publicly traded companies, a total of 4,609 companies met this threshold.

Methodology

Below we highlight the key components of this year's methodology. Please refer to Appendix A for a more detailed review of the methodology.

Unit of analysis: Large publicly traded companies, which we define as companies with a market capitalization in excess of US$2 billion as of the close of trading on July 1, 2014. From a starting universe of 68,022 publicly traded companies – essentially the complete investable set of global equities – a total of 4,609 companies met this threshold.[4]

Level of aggregation: The 4,609 large companies that form the basis of our study were grouped according to the stock exchange on which their shares trade.[5] In order to improve statistical significance, we only analyzed stock exchanges that had 10 or more large listings as of July 1, 2014.[6] The 4,609 companies analyzed in the study traded on a total of 82 stock exchanges, and this number was subsequently reduced to 46 exchanges using the 10 large listing cut-off.

Data source: The paper's analysis was based on data pulled from Bloomberg's ESG database on July 1, 2014.

Ranking model: Stock exchanges were ranked on three measures:[7]

i) The Disclosure Score (50% weight). The Disclosure Score measures the proportion of an exchange's large listings that disclosed the seven first-generation indicators in 2012. The indicators are equally weighted in terms of their contribution to the Disclosure Score.

ii) The Disclosure Growth Score (20% weight). The Disclosure Growth Score measures the growth rate in the proportion of an exchange's large listings that disclosed the seven first-generation indicators over the 2008–2012 period.

iii) The Disclosure Timeliness Score (30% weight). The Disclosure Timeliness Score measures how quickly an exchange's large listings report sustainability data to the market after the end of their fiscal year.

This paper's ranking model provides a comprehensive measure of corporate sustainability reporting across the world's stock exchanges. But there are many factors not captured in the model that may influence an exchange's performance in the ranking. Below we summarize several key factors left unexamined in our approach.

Exchange size: While exchanges with fewer than 10 large company listings were eliminated from the ranking, exchanges that met this cut-off were treated equally. This means that the largest exchanges, such as the New York Stock Exchange with 1,060 large listings or the Tokyo Stock Exchange with 404 large listings, were compared against the Borsa Italiana (55 large listings), the Borsa Istanbul (28 large listings) and the Athens Exchange (11 large listings).

Exchange characteristics: Exchange characteristics such as ownership structure or the degree of autonomy that exchanges have to implement listing requirements were not analyzed.

Sector composition: The sector composition of each exchange's large listings was not taken into account. Exchanges that are home to a disproportionately large share of companies in industries known to have strong disclosure practices, such as the mining industry, may have been advantaged in our ranking.

4. US$2 billion is the conventional definition of a mid-cap.
5. Companies were aggregated on the basis of their "primary listing." Most companies' primary listing is on the (or a) stock exchange in their country of incorporation. For example, Rio Tinto plc trades on the London Stock Exchange (primary exchange) and on the New York Stock Exchange as an ADR. In our study, Rio Tinto Plc is grouped under the London Stock Exchange.
6. We arbitrarily selected 10 as a minimum size requirement to improve the statistical significance of our findings. We used the same threshold in our 2013 report.
7. We assigned a weight to each score based on our view about what constitutes the most important elements in overall sustainability disclosure performance.

The Ranking Process

Bloomberg data conventions: All data are subject to the data collection methodologies employed by Bloomberg. For instance, Bloomberg discards a small but unspecified number of data points in its ESG database that do not meet quality control thresholds. While the merits of Bloomberg's quality control process are obvious, it means that Bloomberg's ESG database is not a complete representation of global reporting trends on the seven first-generation indicators.

In addition to these factors, we introduced two minor changes to this year's ranking model.

Bloomberg data fields: Last year's report used a single Bloomberg field – total GHG emissions – to measure disclosure in GHGs. In order to provide a clearer picture of corporate GHG reporting, we broadened our analysis this year to include an additional five Bloomberg fields.[8]

Disclosure timeliness: Exchanges that could not be assigned a Disclosure Timeliness Score received a "bye" and were scored on the Disclosure Score and Disclosure Growth Score with revised weights of 70% and 30%, respectively.[9]

Notwithstanding these limitations, this year's ranking is based on a clear and objective set of criteria and allows for transparent benchmarking of sustainability disclosure across the world's stock exchanges.

8. These were total CO2 emissions, Scope 3 GHG emissions, CDP Scope 1 emissions globally, CDP Scope 2 emissions globally and CDP reported CO_2.
9. Of the 46 exchanges reviewed in this year's ranking, 14 could not be scored on Disclosure Timeliness due to an insufficient number of companies with a December 31 fiscal year-end. In our two previous rankings, exchanges that could not be scored on Disclosure Timeliness received a score of zero, which effectively dragged down their Overall Score. For more information, please see Appendix A.

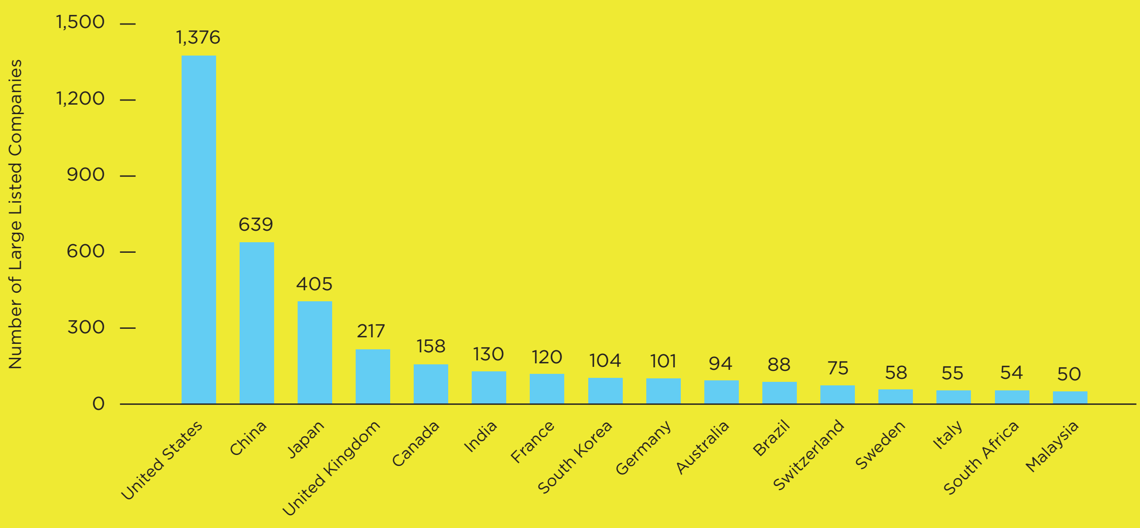
BREAKOUT DISCUSSION

A closer look at the world's large listed companies

The world's 4,609 large listed companies are distributed across 74 countries and all 10 Global Industry Classification Standard (GICS) sectors.[10] Yet they are surprisingly concentrated in a few key countries and industries. The analysis below sheds light on the composition of the world's mid and large caps.

Figure 3 segments the world's 4,609 large listed companies by their home country.[11] Befitting the status of the United States as the world's most important capital market, nearly one-third (30%) of large listed companies are American (1,376/4,609). The top five most represented countries are rounded out by China (639/4,609 = 14%), Japan (405/4,609 = 9%), the United Kingdom (217/4,609 = 5%) and Canada (158/4,609 = 3%).

FIGURE 3: THE WORLD'S LARGE LISTED COMPANIES BY HOME COUNTRY



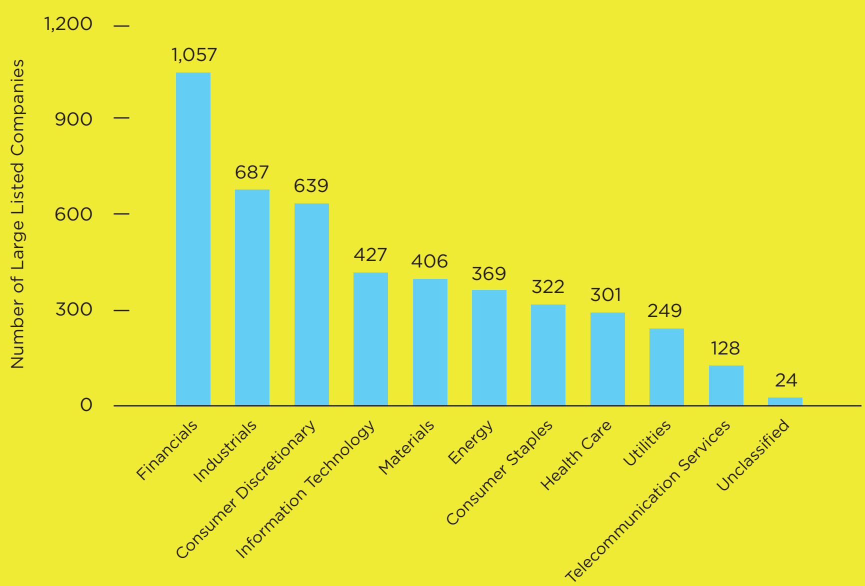
Source: Bloomberg, Corporate Knights Capital

10. Developed by MSCI and S&P, the GICS is one of the world's most used industrial taxonomies. The GICS structure includes 10 sectors, 24 industry groups, 68 industries and 154 sub-industries. For more information, see www.spindices.com/documents/index-policies/methodology-gics.pdf.
11. Figure 3 shows the 16 countries that have 50 or more large listed companies. An additional 58 countries have 49 or fewer large listed companies.

This distribution means that disclosure policies put forward by regulatory actors in the U.S., China and, to a lesser extent, Japan, the United Kingdom and Canada will have disproportionately significant effects on the disclosure practices of the world's large listed companies as a whole.

Turning to analysis by industry, Figure 4 segments the world's large listed companies by their GICS sector. The analysis shows that over half of the world's large listed companies are concentrated in just three sectors: financials (1,057/4,609 = 23%), industrials (687/4,609 = 15%) and consumer discretionary (639/4,609 = 14%).

FIGURE 4: THE WORLD'S LARGE LISTED COMPANIES BY GICS SECTOR



Source: Bloomberg, Corporate Knights Capital

A company's industrial classification can play a determining role in the scope and depth of its sustainability reporting. For instance, companies operating in resource-intensive industries, such as mining, tend to have more sophisticated environmental reporting systems than companies in "lower-impact" industries, such as banking and insurance.

The distribution shown in Figure 4 means that the disclosure practices of the world's large listed companies as a single unit are significantly affected by disclosure norms in the global financial sector and, in particular, the U.S. financial sector (of the 1,057 financial companies in our study, 277, or 26%, are based in the U.S.).

Sustainability Disclosure Trends

Recent developments in the sustainability reporting landscape

In this section we review global reporting trends on the seven first-generation indicators. Our intention is to offer insight into the state of quantitative sustainability reporting at the broadest possible level of analysis.

Key Findings

- The momentum behind corporate sustainability disclosure is largely being driven by multilateral organizations and specialized initiatives, as opposed to stock exchanges or securities regulators.
- The EU estimates that only 10% of the 6,000 companies that are expected to be affected by the EU Parliament's directive on non-financial and diversity information currently report information required to be reported in the directive.
- Recent developments have succeeded in raising awareness about sustainability disclosure integration and have engaged key regulatory bodies and trade associations (e.g., IOSCO and the World Federation of Exchanges).

Management at a publicly traded corporation can elect to report sustainability performance data for many different reasons, but fundamentally there are two drivers. Management can disclose sustainability data as a mandatory response to a change in relevant laws, standards or regulations. Or they can disclose sustainability data voluntarily. The rationale to voluntarily disclose corporate sustainability data to the market is complex and involves a variety of motivations, including responding to investor requests, improving corporate reputation and long-term risk management, increasing employee loyalty and identifying cost-saving opportunities.[12]

The overwhelming majority of sustainability data in the market today has been reported voluntarily. However, as we reported last year, a growing number of regulatory actors, including stock exchanges and government agencies, are introducing rules that *mandate* sustainability disclosure. Australia, Belgium, China, Denmark, Finland, France, India, Italy, Japan and South Africa are all examples of countries that have adopted various forms of mandatory sustainability disclosure policies.[13] While most mandatory policies give affected companies considerable leeway to decide how to comply with the policy, they are evidence of a secular trend toward mandated as opposed to voluntary sustainability disclosures.

Below we highlight some of the major developments in the sustainability reporting landscape since the publication of our last report in October 2013. Many of the developments have succeeded in raising awareness about sustainability disclosure integration, while others have engaged key regulatory bodies and trade associations (e.g., IOSCO and the World Federation of Exchanges). At least one development –the EU Parliament's directive on non-financial and diversity information – is a mandatory policy that is almost certain to lead to an increase in reporting on the seven first-generation indicators. The EU estimates that only 10% of the 6,000 companies that are expected to be affected by the directive currently report information required to be reported in the directive.[14]

The EU Parliament's directive notwithstanding, the momentum behind sustainability disclosure is largely being driven by multilateral organizations and specialized initiatives, as opposed to stock exchanges or securities regulators.

12. For a review of the motivations attached to corporate sustainability disclosure, see: Ernst & Young, The Center for Corporate Citizenship at Boston College. "Value of sustainability reporting: A study by EY and Boston College Center for Corporate Citizenship," 2014. File available at: www.ey.com/US/en/Services/Specialty-Services/Climate-Change-and-Sustainability-Services/Value-of-sustainability-reporting. File accessed August 26, 2014.
13. In our 2013 report we performed a "policy inventory" and attempted to cross-reference an exchange's performance in the ranking with the policy environment in their home country. See: Doug Morrow, Michael Yow and Brian Lee. "Trends in Sustainability Disclosure: Benchmarking the World's Stock Exchanges, 2013." Corporate Knights Capital, October 2013. File available at: http://static.corporateknights.com/StockExchangeReport2013.pdf.
14. Daniel (Dan) L. Goelzer, David Hackett, Marisa A. Martin and Jessica Mitchell Wicha. "Mandated corporate social responsibility reporting: coming soon to a country regulating you." Association of Corporate Counsel, August 20, 2014. View file at: www.lexology.com/library/detail.aspx?g=802f19d2-27cf-4a02-a6f3-1e554491c025. File accessed August 25, 2014.

FIGURE 5: RECENT DEVELOPMENTS IN THE SUSTAINABILITY REPORTING LANDSCAPE

Actor	Category	Description	Date	Source
The United Nations Conference on Trade and Development (UNCTAD)	Organization	UNCTAD publishes a technical aid document that highlights best practices in sustainability reporting initiatives among global stock exchanges.	Nov. 2013	http://unctad.org/en/PublicationsLibrary/diaeed2013d6_en.pdf
The International Integrated Reporting Council (IIRC)	Organization	The IIRC launches the <IR> Framework, which establishes a set of principles that organizations can use to communicate how long-term value is created and to publish an integrated report.	Dec. 2013	www.theiirc.org/international-ir-framework/
Ceres	Organization	Ceres publishes "Investor Listing Standards Proposal: Recommendations for Stock Exchange Requirements on Corporate Sustainability Reporting," which engages global stock exchanges via the World Federation of Exchanges (WFE) on a possible uniform reporting standard for sustainability reporting by WFE members.	Mar. 2014	www.ceres.org/press/press-releases/world2019s-largest-investors-launch-effort-to-engage-global-stock-exchanges-on-sustainability-reporting-standard-for-companies
World Federation of Exchanges (WFE)	Organization	The WFE launches a sustainability working group to discuss collaboration opportunities in improving corporate sustainability disclosures.	Mar. 2014	www.businesswire.com/news/home/20140325006381/en/World-Federation-Exchanges-WFE-Launches-Sustainability-Working#.U_UHN_ldU8S
Australian Securities Exchange	Stock exchange	The Australian Securities Exchange makes amendments to its listing rules that incorporate more information on ESG risks as part of corporate governance disclosures.	Mar. 2014	www.asx.com.au/documents/asx-compliance/cgc-communique-march-2014-final.pdf
Toronto Stock Exchange (TSX)	Stock exchange	The TSX together with the Chartered Professional Accountants of Canada publishes "A Primer for Environmental & Social Disclosure," which provides updated guidance on ESG disclosure, guidelines for corporate conduct, and interpretations of existing mandatory disclosure requirements.	Mar. 2014	www.newswire.ca/en/story/1317581/toronto-stock-exchange-and-cpa-canada-priming-issuers-for-environmental-and-social-disclosure

FIGURE 5: RECENT DEVELOPMENTS IN THE SUSTAINABILITY REPORTING LANDSCAPE (CONTINUED)

Actor	Category	Description	Date	Source
The EU Parliament	Government	The EU Parliament adopts a directive that will require approximately 6,000 European companies to disclose non-financial and diversity information on a “comply or explain” basis.	Apr. 2014	http://europa.eu/rapid/press-release_STATEMENT-14-124_en.htm
FTSE/BlackRock	Organization	FTSE and BlackRock launch the world’s first suite of “fossil fuel free” indices.	Apr. 2014	www.ft.com/intl/cms/s/14787a44-cef6-11e3-ac8d-00144feabdc0,Authorised=false.html?_i_location=http%3A%2F%2Fwww.ft.com%2Fcms%2Fs%2F0%2F14787a44-cef6-11e3-ac8d-00144feabdc0.html%3Fsiteedition%3Dintl&siteedition=intl&_i_referer=#ixzz30ENKECuX
The Sustainability Accounting Standards Board (SASB)	Organization	SASB issues its fourth set of provisional sector standards (for the Non-Renewable Resources sector). SASB’s standards are designed for the disclosure of material sustainability issues in mandatory SEC filings, such as the Form 10-K and 20-F.	June 2014	www.sasb.org/standards/status-standards/
The Corporate Reporting Dialogue (CRD)	Initiative	The IIRC convenes the CRD as a platform to foster better alignment among the various sustainability reporting initiatives, and the other major financial reporting standard setters.	June 2014	www.theiirc.org/2014/06/17/corporate-reporting-dialogue-launched-responding-to-calls-for-alignment-in-corporate-reporting/
The Stock Exchange of Thailand	Stock exchange	The Stock Exchange of Thailand issues a statement promoting “social investment” and holds a series of forums to improve the sustainability disclosure practices of listed organizations.	July 2014	www.corporateregister.com/news/item/?n=187

FIGURE 5: RECENT DEVELOPMENTS IN THE SUSTAINABILITY REPORTING LANDSCAPE (CONTINUED)

Actor	Category	Description	Date	Source
ACCA	Organization	The ACCA publishes a report on ESG reporting requirements on sub-Saharan stock exchanges. The report highlights best practices and urges stock exchanges to develop more extensive and meaningful disclosure requirements.	July 2014	www.accaglobal.com/gb/en/technical-activities/technical-resources-search/2014/july/stock-exchanges-in-sub-saharan-africa.html
Sustainable Stock Exchanges (SSE) Initiative	Initiative	The SSE Initiative welcomes the Warsaw Stock Exchange (December 2013), the London Stock Exchange (June 2014), the Bolsa de Valores de Colombia (July 2014) and the Bolsa Mexicana de Valores (August 2014), bringing total membership to 12 exchanges.	Aug. 2014	www.sseinitiative.org/home-slider/colombian-securities-exchange-joins-uns-sustainable-stock-exchanges-initiative/
Climate Disclosure Standards Board (CDSB)	Organization	The CDSB issues a collective statement on fiduciary duty and climate change that was launched at the United Nations Secretary General's Climate Summit.	Sept. 2014	www.cdsb.net/
UNEP FI/CDP	Initiative	UNEP FI and CDP together with several asset owners and managers unveil a new investor coalition designed to decarbonize US$100 billion in institutional investment and carbon footprint US$500 billion in institutional investment by December 2015.	Sept. 2014	http://www.unep.org/newscentre/Default.aspx?DocumentID=2796&ArticleID=10991&l=en

Source: Corporate Knights Capital

CORPORATE
SUSTAINABILITY
REPORTING IS
THE NEXT STEP
IN THE TREND
TOWARD INCREASING
CORPORATE
TRANSPARENCY
AND ACCOUNTABILITY.

12%

Proportion of the world's large listed companies that disclose their rate of employee turnover.

40%

Proportion of the world's large listed companies that report their energy consumption.

39%

Proportion of the world's large listed companies that report their greenhouse gas emissions.

11%

Proportion of the world's large listed companies that report their injury rate.

59%

Proportion of the world's large listed companies that disclose their payroll expense.

23%

Proportion of the world's large listed companies that disclose their total waste.

25%

Proportion of the world's large listed companies that report their water consumption.

37%

Proportion of large listed companies that publish their sustainability report more than six months after their financial year-end.

3%

The percentage of the world's large listed companies that disclosed all seven first-generation indicators in 2012.

A brief history of reporting on the first-generation sustainability indicators

Key Findings

- While the number of companies publishing corporate sustainability reports has increased dramatically since the early 2000s, most companies are not disclosing their performance on the seven first-generation indicators.
- Only 128 of the world's 4,609 large listed companies (2.8%) currently disclose all seven first-generation indicators.
- Disclosure rates on each of the seven first-generation indicators appears to be plateauing.

It seems likely that the initiatives described in Figure 5 will, over time, encourage (or mandate) more companies to engage in sustainability reporting. But it is important to look critically at what we mean by "sustainability reporting." The well-chronicled explosion in the number of "corporate sustainability reports," for instance, has not led to a commensurate increase in reporting on the first-generation indicators.[15] Indeed, as we show below, only a small minority (128) of the world's 4,609 large listed companies currently disclose all seven first-generation indicators.

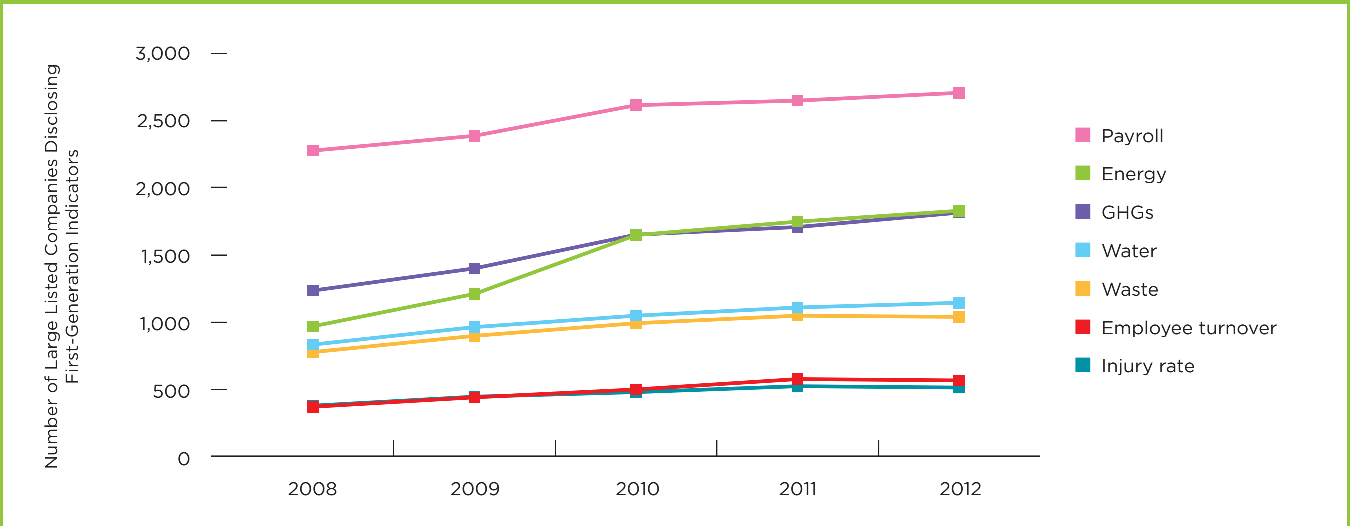
Standard-setters such as the Global Reporting Initiative (GRI), the Sustainability Accounting Standards Board (SASB) and the Carbon Disclosure Project (CDP) have made an enormous contribution in helping to standardize corporate sustainability reporting by creating a menu of well-defined performance indicators.

But if we consider "success" to be complete disclosure of the seven first-generation indicators by the world's 4,609 large listed companies (let alone the approximately 68,000 listed companies in the world), we remain at a relatively early stage in the evolution of corporate sustainability reporting.

Figure 6 tracks the number of large listed companies that disclosed the first-generation indicators from 2008 to 2012. Encouragingly, the data show that disclosure of all indicators increased significantly over the study period. For instance, the number of companies disclosing their energy use grew from 972 in 2008 to 1,832 in 2012, an increase of 88%. Over the same period, the number of large companies disclosing GHGs grew from 1,238 to 1,818, an increase of 47%. A similar story exists with the other indicators – payroll (up 19%), water (up 37%), waste (34%), employee turnover (up 53%) and injury rate (up 35%).

15. According to data from Corporate Register, the number of corporate responsibility reports grew from 644 in 1999 to 7,445 in 2013. See www.corporateregister.com/a10723/58958-13th-15918660Y4561226712N-Gl.pdf File accessed August 25, 2014

FIGURE 6: FIRST-GENERATION SUSTAINABILITY INDICATOR REPORTING BY LARGE LISTED COMPANIES, 2008–2012



Source: Bloomberg, Corporate Knights Capital

While we must not conflate data quality and data quantity – we are largely concerned in this paper with the latter – this analysis shows that investors, among other stakeholders, have access to vastly greater quantities of indicator-specific corporate sustainability data than they did five years ago.

But closer examination of the data reveals two fundamental challenges. First, the rate of increase is slowing. This can be seen in the flattening of the disclosure curves over time. For instance, while the number of companies disclosing energy use increased by 88% from 2008 to 2012, the increase from 2011 to 2012 was just 5%. The number of companies disclosing water consumption data grew up 37% from 2008 to 2012 but only by 3% from 2011 to 2012. Consistent with our findings in last year's report, disclosure of the seven first-generation indicators appears to be plateauing.

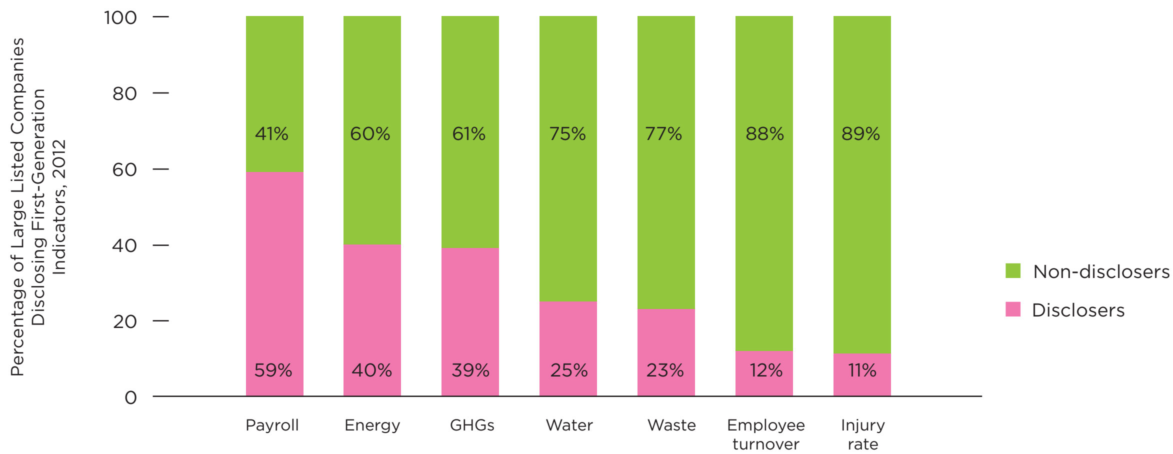
The second problem is that when we look at the number of companies disclosing the first-generation indicators as a percentage of all large publicly traded companies (let alone *all* publicly traded companies), we see that only a small minority of all large companies are reporting.[16]

Figure 7 shows the proportion of the world's 4,609 large companies that disclosed the seven first-generation indicators in 2012. As mentioned above, a total of 1,832 listed companies worldwide disclosed their energy use in 2012. But as shown in Figure 7 this represents only 40% of the world's large listed companies. Payroll is a success story in the sense that more large companies currently disclose this metric than do not – 59% compared to 41% – but payroll is unique compared to other first-generation indicators in that it is mandated under International Financial Reporting Standards (IFRS).[17]

16. We calculated the percentages in Figure 7 using a denominator of 4,609 to reflect the total number of large listed companies. We do this because "large" companies are much more likely than their small and micro-cap peers to engage in sustainability reporting. However, the analysis could also be done with a much larger denominator – 68,022, which represents the total number of all listed companies. In this instance, the disclosure rates would be infinitesimally smaller.

17. International Financial Reporting Standards (IFRS) are a widely adopted set of accounting standards, which aim to become the single global standard. IAS 19 – Employee Benefits mandates the disclosure of payroll costs. With the notable exception of the United States and Japan, most of the world's largest economies have adopted IFRS in their domestic corporate accounting framework.

FIGURE 7: FIRST-GENERATION SUSTAINABILITY INDICATOR REPORTING BY LARGE LISTED COMPANIES, 2012



Source: Bloomberg, Corporate Knights Capital

Even taking into account our earlier finding that 23% of the world's large listed companies are financial companies or that 30% of large listed companies are based in the U.S., the disclosure rates in Figure 7 are disconcertingly low. The paucity of reporting on the first-generation indicators raises questions about the barriers that are preventing more comprehensive disclosure on these metrics.[18]

While it is perhaps understandable that only 11% of large listed companies currently disclose their injury rate – injury rate is perhaps the least relevant of the first-generation indicators across industries – it is striking that after a decade of politicization about carbon that only 39% of the world's large companies currently disclose their GHGs.

Raising the bar even further, our analysis shows that only 128 of the world's 4,609 large companies (3%) disclosed all seven first-generation indicators in 2012. This proportion is unchanged from last year's report, where we found that 117 of the world's then 3,972 large companies (3%) disclosed all seven indicators.

In summary, the gap between the number of companies publishing corporate responsibility reports and the number of companies disclosing their performance on quantitative measures of sustainability performance is substantial. As sustainability reporting standards, such as those developed by the GRI, SASB and CDP, proliferate and as reporting requirements tighten, this gap may narrow over time.

3%

The percentage of theworld's large listed companies that disclosed all seven first-generation indicators in 2012.

18. One theory is that companies are not being induced to report because investors have expressed a high level of dissatisfaction with the depth and comparability of existing corporate sustainability disclosures. See "Sustainability goes mainstream: Insights into investor views." PricewaterhouseCoopers, Investor Survey, Winter/Spring series, May 2012. File available at: www.pwc.com/en_US/us/pwc-investor-resource-institute/publications/assets/pwc-sustainability-goes-mainstream-investor-views.pdf. File accessed September 3, 2014. However, as we argued elsewhere in this report, demand from asset owners for ESG integration is rising.

BREAKOUT DISCUSSION

Disclosure of Scope 3 GHG emissions

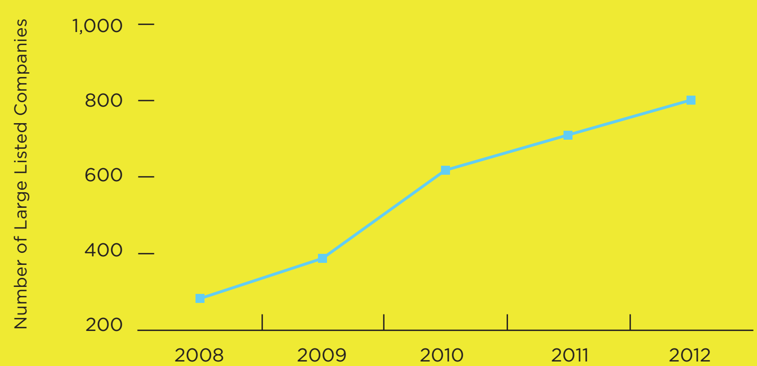
GHG emissions can be classified into three different "scopes" using the GHG Protocol, the world's most widely used GHG accounting tool.[19] Unlike Scope 1 and Scope 2 emissions, which are relatively straightforward and well defined, Scope 3 emissions are a catch-all category that capture emissions from a wide range of activities, including employee business travel, transporting fuel and the use of a company's products. Companies can (and do) define their Scope 3 emissions in a variety of different ways, and this lack of standardization limits the usefulness of Scope 3 GHG data.

Most companies that measure and disclose their GHGs have historically reported Scope 1 and 2 emissions. In recent years, however, the number of listed companies taking steps to disclose Scope 3 emissions has surged. This uptake in Scope 3 reporting is being driven by several factors, including:

i) New research showing that Scope 3 GHG emissions are just as, if not more, significant than Scope 1 and 2 emissions for many industries;[20]
ii) Growing awareness among governments about the importance of having a more global picture of GHG emissions and their impact on climate change;
iii) The availability of increasingly sophisticated tools for measuring and estimating Scope 3 GHG emissions; and
iv) Rising pressure from academia and civil society for more complete reporting of corporate environmental performance.

At the same time, investors are beginning to realize the risks posed by corporate exposure to Scope 3 GHG emissions.[21]

FIGURE 8: NUMBER OF LARGE LISTED COMPANIES REPORTING SCOPE 3 GHG EMISSIONS



Source: Bloomberg, Corporate Knights Capital

These factors have coalesced to drive a tremendous rise in Scope 3 reporting by listed companies. As shown in Figure 8, the number of large listed companies disclosing Scope 3 emissions increased from 283 in 2008 to 801 in 2012, an increase of 183%. While this means that only 17% of the world's large listed companies (801/4,609) currently disclose Scope 3 emissions, we expect that gains in Scope 3 reporting will outpace those in Scope 1 and 2 reporting going forward as more and more companies develop methodologies for this elusive yet fundamentally insightful metric.

While the sharp rise in Scope 3 GHG reporting is encouraging, much work is still needed to improve the standardization of companies' Scope 3 disclosures. The 2013 Global 500 report by the CDP found that, based on 2012 data, "current reporting of indirect Scope 3 emissions does not reveal the full impact of companies' value chains."[22] The report concluded that "current Scope 3 reporting does not reflect the full impact of companies' activities, and may mislead as to the full carbon impact of a company."[23]

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19. www.ghgprotocol.org/. File accessed August 26, 2014.
20. For a good discussion of the materiality of Scope 3 emissions by industry, see 2°Investing Initiative. "From Financed Emissions to Long-Term Investing Metrics: State of the Art Review of GHG Emissions Accounting for the Financial Sector," July 2013. File available at: http://2degrees-investing.org/#!/page_Resources. File accessed August 26, 2014.
21. The CDP, an international not-for-profit organization that provides a system for companies to disclose environmental information including GHG emissions, has been expanding its Scope 3 emissions reporting requirement since 2010. See www.bsr.org/en/our-insights/bsr-insight-article/the-advent-of-supply-chain-climate-reporting-reading-cdps-2010-results-on-s. File accessed August 26, 2014.
22. https://www.cdp.net/cdpresults/cdp-global-500-climate-change-report-2013.pdf. File accessed August 26, 2014.
23. https://www.cdp.net/cdpresults/cdp-global-500-climate-change-report-2013.pdf. File accessed August 26, 2014.

Disclosure patterns by sector

Key Findings

- Consistent with our expectations, intra-sector disclosure rates on the seven first-generation indicators were found to vary significantly.
- The materials sector is the best overall performer, with the top disclosure rate on five of seven indicators (energy, GHGs, injury rate, waste and water).
- The financial sector is the bottom performer, with the poorest disclosure rate on four indicators (GHGs, injury rate, waste and water).
- The telecommunication services sector has the highest disclosure rate on employee turnover (22%) and payroll (75%).
- Excluding payroll, there are only three instances where an intra-sector disclosure rate is above 50% (55% of materials companies disclose energy; 52% of materials companies disclose GHGs; and 51% of consumer staples companies report energy).
- The energy sector is a surprisingly poor discloser of energy, GHGs and water data.

As previously mentioned, a company's industry classification can play a determining role in the depth and breadth of its sustainability reporting. For instance, companies operating in resource-intensive industries, such as mining, tend to have more sophisticated environmental reporting systems than companies in "low-impact" industries, such as banking and insurance.

Figure 9 groups the world's 4,609 large listed companies into their respective GICS sectors and shows the disclosure rate of each sector on each of the seven first-generation indicators in 2012. For every indicator, the sector with the highest disclosure rate is highlighted in green, while the sector with the lowest disclosure rate is highlighted in red.

FIGURE 9: PROPORTION OF LARGE LISTED COMPANIES REPORTING FIRST-GENERATION SUSTAINABILITY INDICATORS BY SECTOR, 2012

Global Industry Classification Standard (GICS) Sector	Number of Large Listed Companies as of July 1, 2014	Employee Turnover	Energy	GHGs	Injury Rate	Payroll	Waste	Water
Consumer Discretionary	639	8%	36%	37%	6%	59%	20%	21%
Consumer Staples	322	12%	51%	49%	14%	67%	31%	34%
Energy	369	12%	**31%**	**32%**	17%	**37%**	17%	20%
Financials	1,057	13%	32%	**32%**	**2%**	60%	**13%**	**16%**
Health Care	301	7%	35%	33%	11%	52%	23%	25%
Industrials	687	13%	46%	45%	15%	69%	28%	29%
Information Technology	427	**7%**	41%	41%	4%	43%	20%	20%
Materials	406	20%	**55%**	**52%**	**33%**	66%	**38%**	**44%**
Telecommunication Services	128	**22%**	49%	46%	13%	**75%**	29%	30%
Utilities	249	21%	41%	47%	17%	68%	33%	36%

Source: Bloomberg, Corporate Knights Capital

Employee Turnover

Disclosure rates ranged from a low of 7% in the information technology sector to a high of 22% in the telecommunication services sector.

Energy

Unsurprisingly, companies in the materials sector, which include the world's mining companies, are the top disclosers on this metric, with a disclosure rate of 55% (225/406). Interestingly, the sector with the poorest disclosure rate of energy data is, in fact, the energy sector. Only 31% (116/369) of the world's large listed energy companies disclosed their energy use in 2012. This is curious given that i) oil & gas companies are frequently included in GHG regulatory regimes and ii) energy use (and prices) are a material concern for oil & gas companies. Part of the explanation is the disparate range of activities covered *within* the GICS energy sector. For instance, of the world's 369 large energy companies, 37 are classified in the "integrated oil & gas" sub-industry.[24] Of these, 27 (73%) disclosed their energy use in 2012. At the other end of the spectrum, 19 of the world's large energy companies are classified in the "oil & gas drilling" GICS sub-industry, and only 1 (5%) of these companies reported their energy consumption in 2012. So while the energy sector's relatively poor disclosure of energy data is noteworthy, many different types of energy companies are encapsulated under the GICS energy sector heading.

GHGs

Intra-sector disclosure rates on GHGs closely resemble those of energy. As with energy, over half (52%) of the world's large listed materials companies now disclose their GHGs. The energy and financials sectors, each with a disclosure rate of 32%, have the lowest intra-sector disclosure rate on GHGs. As mentioned above, using a more refined "cut" of the data shows that GHG disclosure varies substantially within the GICS energy sector. For instance, 76% (28/37) of energy companies classified in the GICS integrated oil & gas sub-industry disclosed their GHGs in 2012. This compares to 11% (2/19) of energy companies classified in the GICS oil & gas drilling sub-industry.

Injury Rate

Injury rate is only meaningfully reported in a single sector – materials. In 2012, 33% of the world's large listed materials firms (132/406) disclosed their injury rate. This speaks to the growing materiality of health and safety concerns in the mining industry, a trend that has intensified since the Deepwater Horizon spill of 2010. Injury rate is poorly reported by companies in every other GICS sector. The financial sector is a particularly poor performer on this metric, with a disclosure rate of just 2% (21/1,057). While this is an exceptionally low disclosure rate, it is understandable given the nature of the sector and the comparatively low materiality of worker safety concerns in the banking and insurances industries.

Payroll

Payroll is unique among the seven first-generation indicators in that it is mandated by International Financial Reporting Standards (IFRS).[25] Accordingly, it is, by a significant margin, the most widely reported of the seven first-generation metrics, with an overall disclosure rate of 59% (2,710/4,609). Intra-sector disclosure rates on this indicator are all generally high, ranging from 75% (96/128) in the telecommunication services sector to 37% (138/369) in the energy sector.

Waste

Disclosure rates within sectors range from 38% in the materials sector (154/406) to 13% in the financial sector (134 /1,057). Generally speaking, resource-intensive sectors (e.g., materials, utilities and industrials) perform well on waste disclosure. An exception is the energy sector, where waste was reported by 17% (62/369) of the sector's large listed companies in 2012.

Water

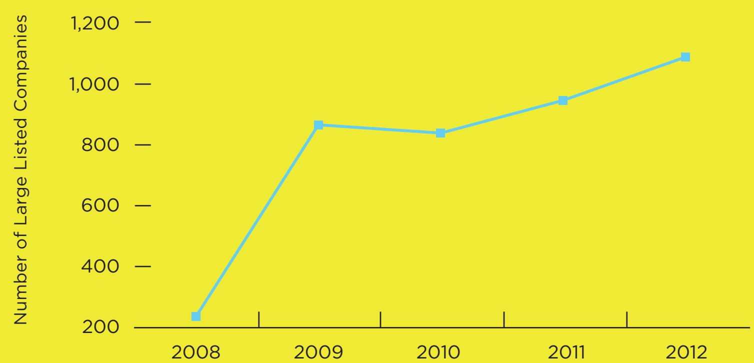
More so than other indicators, water is subject to highly variable intra-sector disclosure rates. These range from a high of 44% in the materials sector (178/406) to a low of 16% in the financial sector (166/1,057). The pattern is generally similar to that of waste reporting – companies in heavy industry are more likely to disclose water use than those in low-impact industries. Again, the global energy sector is an exception. With a disclosure rate of 20% (75/369), the energy sector is on par with the global information technology sector (84/427).

24. The GICS structure includes 10 sectors, 24 industry groups, 68 industries and 154 sub-industries. For more information, see www.spindices.com/documents/index-policies/methodology-gics.pdf.
25. International Financial Reporting Standards (IFRS) are a widely adopted set of accounting standards, which aim to become the single global standard. IAS 19 – Employee Benefits mandates the disclosure of payroll costs. With the notable exception of the United States and Japan, most of the world's largest economies have adopted IFRS in their domestic corporate accounting framework. For more information on IFRS, see www.ifrs.org/Pages/default.aspx.

BREAKOUT DISCUSSION

Assuring sustainability reports

FIGURE 10: NUMBER OF LARGE LISTED COMPANIES ASSURING SUSTAINABILITY REPORTS, 2008–2012



Source: Bloomberg, Corporate Knights Capital

Since a growing number of economic decisions are being made based in part on sustainability-related information, ensuring the reliability of such data has grown in importance. One way to instill confidence in the underlying quality of sustainability data is to conduct an audit and provide assurance on that information. In the same way that regulated financial data need to be audited by a qualified assurance provider, sustainability data can be reviewed by a third-party assurance provider.

The past few years have seen a notable rise in the number of companies auditing their sustainability data. This trend is largely a response to increasing pressure from various stakeholder groups for assurance on the reliability of corporate sustainability data. The rules about sustainability auditing are much less stringent than those that govern the auditing of financial data, and, accordingly, the extent and scope of an audit of sustainability data often varies significantly among companies in a given industry. This is because sustainability reporting is still largely a voluntary as opposed to mandatory activity, characterized by a lack of agreed-upon scopes and standards available to assurance providers.[26]

As shown in Figure 10, the number of large listed companies that conducted a sustainability audit grew from 237 in 2008 to 1,087 in 2012, an increase of 359%. Still, the 1,087 companies that conducted a sustainability audit in 2012 constitute only 24% (1,087/4,609) of the large listed companies included in this year's study. Assuring a sustainability report may be safely deemed a minority practice, but the trend line is clearly on an upward trajectory.

26. For a recent discussion on the state of assurance of sustainability reports, see "Trends in External Assurance of Sustainability Reports," Global Reporting Initiative. File available at http://grifocalpointblog.org/usa/wp-content/uploads/sites/12/2014/07/GRI_Trends-in-External-Assurance-of-Sustainability-Reports_July-2014.pdf. The IIRC has also reported on the state of sustainability assurance and its relationship to Integrated Reporting. See "Assurance on <IR>: an introduction to the discussion," IIRC; and "Assurance on <IR>: an exploration of issues publications," IIRC. Files available at www.iasplus.com/en/news/2014/07/iirc-assurance-papers.

Ranking

In this section we rank the world's stock exchanges based on the sustainability disclosure practices of their large listed companies. A total of 46 stock exchanges were assessed in this year's study. The sustainability disclosure practices of each exchange's large listings were evaluated on three measures: disclosure rate, disclosure growth and disclosure timeliness.[27]

Overall Results

The Helsinki Stock Exchange was the top performer in this year's ranking, improving from its second overall position in last year's ranking and third overall position in 2012. The steady progression of the Helsinki Stock Exchange is an indication of the continued efforts by various actors in Finland to foster increased sustainability disclosure.[28]

The Euronext Amsterdam placed second, followed by the Johannesburg Stock Exchange (third), Euronext Paris (fourth), the Copenhagen Stock Exchange (fifth), Euronext Lisbon (sixth), Oslo Stock Exchange (seventh), BME Spanish Exchanges (eighth), London Stock Exchange (ninth) and Australian Securities Exchange (10th).

As in our 2013 ranking, European exchanges performed particularly well in this year's study, capturing eight of the top 10 overall spots (a proportion unchanged from 2013). European stock exchanges appear to benefit from the continent's relatively progressive policy environment around sustainability disclosure, a hallmark of which is the EU Parliament's directive on non-financial and diversity information.[29]

The Johannesburg Stock Exchange (JSE) is the only stock exchange in this year's top 10 based in an emerging market. Moreover, it is one of only five exchanges from last year's top 10 that improved its performance this year (the JSE moved up from fifth position last year to third position this year). While we do not wish to imply causality, the performance of the JSE has almost certainly been helped by the exchange's much-lauded "comply or explain" rule concerning the King Code of Governance (King III).[30]

The most improved exchange in this year's ranking was Turkey's Borsa Istanbul, which climbed 21 spots to 11th position. Borsa Istanbul's striking improvement is likely the result of many different factors, and while more analysis would be needed to fully understand what is driving the disclosure improvements among Turkey's mid/large caps, it seems plausible that the exchange is benefiting from recent disclosure guidelines put forward by the Turkish securities regulator.[31]

The bottom performers in this year's ranking consist of the Saudi Arabia Stock Exchange (42nd), Warsaw Stock Exchange (43rd), Qatar Stock Exchange (44th), Kuwait Stock Exchange (45th) and Lima Stock Exchange (46th). Four of these exchanges also found themselves in the bottom five of last year's ranking.[32] It is likely no coincidence that these exchanges are based in countries with a relatively nascent policy environment around corporate sustainability disclosure.

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27. Due to rounding, the sum of an exchange's Disclosure Score, Disclosure Growth Score and Disclosure Timeliness Score does not always equal its Overall Score.
28. Examples include Act No. 1304 (2004), the Finnish Accounting Act (2004), General guidelines for recording, accounting and disclosing of environmental issues (2006) and Government Resolution on State Ownership Policy (2011). The Finnish Accounting Act requires companies to include an assessment defining the key ratios necessary to understand operations and financial position, as well as the results of operations of the reporting entity. In addition, ratios and other information on personnel and environmental factors, and other potentially significant matters impacting on the operations of the reporting entity, need to be disclosed. Source: *Carrots & Sticks,* 2013. File available at: https://www.globalreporting.org/resourcelibrary/carrots-and-sticks.pdf File accessed September 3, 2014.
29. For more information on the directive, see http://europa.eu/rapid/press-release_STATEMENT-14-124_en.htm. File accessed September 3, 2014.
30. For a good overview of JSE's efforts, see www.world-exchanges.org/insight/views/integrating-sustainability-south-africa. File accessed August 27, 2014
31. In 2003 the Capital Markets Board of Turkey published a communiqué on "Corporate Governance Principles." Revised in 2011, the communiqué obliges companies listed on the Istanbul Stock Exchange to report in their annual reports in accordance with a range of principles including human resources policy, responsibilities toward customers, suppliers and other stakeholders, code of ethics and social responsibility. Source: *Carrots & Sticks*, 2013. File available at: https://www.globalreporting.org/resourcelibrary/carrots-and-sticks.pdf. File accessed September 3, 2014.
32. The exception was the Warsaw Stock Exchange, which placed 35th (out of 45) in our 2013 ranking.

FIGURE 11: OVERALL RESULTS

Rank 2014	Rank 2013	Rank 2012	Exchange Name	Country	Number of Large Companies	Overall Score
1	2	3	Helsinki Stock Exchange	Finland	23	76
2	10	1	Euronext Amsterdam	Netherlands	35	74
3	5	5	Johannesburg Stock Exchange	South Africa	54	73
4	6	10	Euronext Paris	France	122	73
5	7	2	Copenhagen Stock Exchange	Denmark	22	72
6	14	16	Euronext Lisbon	Portugal	11	72
7	4	7	Oslo Stock Exchange	Norway	19	71
8	1	4	BME Spanish Exchanges	Spain	47	68
9	11	12	London Stock Exchange	United Kingdom	223	68
10	17	11	Australian Securities Exchange	Australia	96	67
11	32	32	Borsa Istanbul	Turkey	28	65
12	3	N/A	Tokyo Stock Exchange	Japan	404	65
13	31	N/A	Bolsa Colombia	Colombia	21	64
14	12	6	Stockholm Stock Exchange	Sweden	57	64
15	8	15	SIX Swiss Exchange	Switzerland	65	64
16	9	N/A	Athens Stock Exchange	Greece	11	63
17	23	18	Hong Kong Stock Exchange	China	222	63
18	26	N/A	Shanghai Stock Exchange	China	171	63
19	13	8	Borsa Italiana	Italy	55	63
20	15	13	Deutsche Börse	Germany	98	62
21	25	N/A	Taiwan Stock Exchange	China	72	62
22	18	17	Singapore Exchange	Singapore	53	62
23	24	23	Bursa Malaysia	Malaysia	50	62
24	21	9	BM&FBOVESPA	Brazil	86	62
25	28	25	Mexican Stock Exchange	Mexico	46	60
26	38	N/A	Shenzhen Stock Exchange	China	144	60
27	40	31	Bangkok Stock Exchange	Thailand	42	60
28	27	24	Wiener Börse	Austria	16	58
29	22	19	Euronext Brussels	Belgium	24	58
30	19	26	Moscow Exchange	Russia	37	58
31	16	27	Korea Exchange	South Korea	100	58
32	30	28	Toronto Stock Exchange	Canada	162	58
33	39	20	Philippine Stock Exchange	Philippines	35	56
34	33	N/A	New York Stock Exchange	United States	1,060	56
35	34	30	National Stock Exchange	India	129	55
36	20	21	Santiago Stock Exchange	Chile	31	54
37	N/A	N/A	Irish Stock Exchange	Ireland	12	53
38	37	N/A	Indonesia Stock Exchange	Indonesia	37	52
39	36	N/A	Nasdaq	United States	406	51
40	N/A	N/A	New Zealand Exchange	New Zealand	13	47
41	45	33	Tel Aviv Stock Exchange	Israel	23	44
42	42	N/A	Saudi Arabia Stock Exchange	Saudi Arabia	43	35
43	35	34	Warsaw Stock Exchange	Poland	20	34
44	44	N/A	Qatar Stock Exchange	Qatar	21	20
45	41	N/A	Kuwait Stock Exchange	Kuwait	14	11
46	43	35	Lima Stock Exchange	Peru	15	1

First quartile Second quartile Third quartile Fourth quartile

Source: Corporate Knights Capital

Disclosure Score

The Helsinki Stock Exchange was the runway leader on this measure in this year's study. As of the 2012 performance year, no stock exchange in the world comes close to the Helsinki Stock Exchange when it comes to the proportion of large listings disclosing quantitative sustainability data. Of the exchange's 23 large listings, 21 currently disclose payroll data (91%), 20 disclose GHGs (87%) and 19 disclose energy (83%). Moreover, the exchange had the highest disclosure rate of any exchange covered in our study on employee turnover, with 13 of the exchange's 23 large listings (57%) disclosing employee turnover data in 2012.

As shown in Figure 12, Euronext Lisbon placed second on disclosure score, followed by BME Spanish Exchanges (third), Copenhagen Stock Exchange (fourth), Euronext Paris (fifth), Athens Stock Exchange (sixth), London Stock Exchange (seventh), Johannesburg Stock Exchange (eighth), Euronext Amsterdam (ninth) and Stockholm Stock Exchange (10th).

FIGURE 12: TOP 10 STOCK EXCHANGES, DISCLOSURE SCORE

			DISCLOSURE RATE							
Exchange Name	**Country**	**Number of Large Listed Companies as of July 1, 2014**	**Energy (%)**	**GHGs (%)**	**Water (%)**	**Waste (%)**	**Employee Turnover (%)**	**Injury Rate (%)**	**Payroll (%)**	**Disclosure Score (out of 50)**
Helsinki Stock Exchange	Finland	23	83	87	65	70	57	48	91	46
Euronext Lisbon	Portugal	11	73	73	64	55	36	36	100	44
BME Spanish Exchanges	Spain	47	74	74	70	66	40	19	94	44
Copenhagen Stock Exchange	Denmark	22	73	82	55	50	41	27	91	43
Euronext Paris	France	122	70	67	57	48	39	36	88	42
Athens Stock Exchange	Greece	11	64	64	64	45	18	18	100	41
London Stock Exchange	United Kingdom	223	75	82	41	41	23	26	86	40
Johannesburg Stock Exchange	South Africa	54	89	91	44	26	54	26	76	4
Euronext Amsterdam	Netherlands	35	71	77	49	43	40	26	60	39
Stockholm Stock Exchange	Sweden	57	77	77	40	37	42	12	79	39

Source: Bloomberg, Corporate Knights Capital

The Johannesburg Stock Exchange stands out as the exchange with the highest proportion of its large listings disclosing both energy and GHGs. Of the exchange's 54 large listings, 48 (or 89%) disclosed energy and 49 (or 91%) disclosed GHGs in 2012. The fact that no single industry dominates these 54 large listings points to the existence of favourable conditions that encourage extensive corporate sustainability disclosure practices across all industries. Indeed, as mentioned above, our study provides initial evidence of the successful practical effects of the Johannesburg Stock Exchange's efforts to restructure its listing requirements to comply with South Africa's King Code of Governance (King III) using a "comply or explain" approach.[33]

33. The Johannesburg Stock Exchange listing requirement of 2010 mandates listed companies to adopt the King Code of Governance (King III). The latter requires companies to produce an integrated report or explain why they are not. King III also requires sustainability disclosure to be integrated with financial reporting. For more information on JSE's approach, see www.world-exchanges.org/insight/views/integrating-sustainability-south-africa. File accessed September 4, 2014.

Disclosure Growth Score

The Philippine Stock Exchange had the highest Disclosure Growth Score of all exchanges included in this year's ranking. The disclosure practices of the Philippine Stock Exchange's 35 large listings improved most significantly on energy and GHGs, with an annual compound growth rate of 57% over the 2008–2012 period. In absolute terms, only one of the exchange's 35 large listings disclosed energy and GHGs in 2008, and by 2012 this number had grown to six. The recent growth in quantitative sustainability reporting among Filipino firms could be the result of the Filipino Government's Corporate Social Responsibility Act of 2009, which, after being amended in 2011, introduced a mandatory sustainability disclosure policy.[34]

The top 10 performing exchanges on this measure include eight emerging markets-based exchanges, located in China, Colombia, Malaysia, Mexico, Philippines, Thailand and Turkey. This is consistent with one of our landmark findings from last year's study, which was that emerging markets-based exchanges are rapidly closing the "disclosure gap" between themselves and developed market-based exchanges.[35]

Three of last year's top 10 exchanges by Disclosure Growth Score are also in this year's top 10. Companies trading on the Mexican Stock Exchange – last year's top performer on Disclosure Growth Score – as well as the Singapore Exchange and Taiwan Stock Exchange are robustly building out their sustainability reporting systems and disclosure practices.

FIGURE 13: TOP 10 STOCK EXCHANGES, DISCLOSURE GROWTH SCORE

			COMPOUND ANNUAL GROWTH RATE IN DISCLOSURE							
Exchange Name	**Country**	**Number of Large Listed Companies as of July 1, 2014**	**Energy**	**GHGs**	**Water**	**Waste**	**Employee Turnover**	**Injury Rate**	**Payroll**	**Disclosure Score (out of 20)**
Philippine Stock Exchange	Philippines	35	57	57	50	41	41	0	3	18
Bolsa Colombia	Colombia	21	46	46	41	41	11	0	8	16
Borsa Istanbul	Turkey	28	86	82	24	41	11	19	5	16
Bursa Malaysia	Malaysia	50	41	15	26	41	24	50	4	16
Bangkok Stock Exchange	Thailand	42	46	37	26	19	50	11	7	16
Singapore Exchange	Singapore	53	34	34	32	68	37	19	1	16
Taiwan Stock Exchange	China	72	47	22	30	36	71	0	1	15
Tel Aviv Stock Exchange	Israel	23	50	26	41	19	0	0	2	15
Mexico Stock Exchange	Mexico	46	33	17	32	29	63	6	41	15
Shanghai Stock Exchange	China	171	10	32	9	41	78	0	45	15

Source: Bloomberg, Corporate Knights Capital

57%

The compound annual growth rate in the number of companies on the Philippine Stock Exchange disclosing energy and GHGs.

8

Of the ten stock exchanges with the highest Disclosure Growth Score, eight are based in emerging markets.

34. The act mandates corporations to consider the interests of society by taking responsibility for the impact of their activities on customers, employees, shareholders, communities and the environment in all aspects of their operations. The act also states that all large corporations shall submit as part of their annual report to the Philippines Securities and Exchange Commission a list of activities relative to their corporate social responsibility. Source: *Carrots & Sticks*, 2013. File available at: https://www.globalreporting.org/resourcelibrary/carrots-and-sticks.pdf. File accessed September 3, 2014.
35. In our 2013 report, we found that emerging markets-based exchanges were on track to overtake developed market-based exchanges in first-generation sustainability indicators reporting by 2015.

Disclosure Timeliness Score

An often overlooked aspect of sustainability disclosure is the speed with which companies report sustainability data to the market. While financial disclosures are predominantly regulated, such that listed companies have a specific time frame in which to make their financials public, there are, with rare exception, no such constraints with sustainability reporting.

For most companies, the preferred vehicle to disseminate corporate sustainability data and analysis is through a "sustainability" or "corporate responsibility" report. These reports are in most cases issued after the publication of a company's annual report, although the trend toward "integrated reporting" is in some cases reducing this delay to zero.[36]

In order to assign a Disclosure Timeliness Score to the 46 exchanges covered in our study, we took companies with a fiscal year-end of December 31 and analyzed the proportion that had disclosed at least one of the first-generation indicators by July 1, 2014. We refer to companies with a fiscal year-end of December 31 as "qualifying companies."

Using this approach, the Shanghai Stock Exchange and Shenzhen Stock Exchange were found to be home to the world's quickest sustainability reporters. We found that 100% of each exchange's qualifying companies had published sustainability data by July 1, 2014. While an analysis of these exchanges' Bloomberg ESG Score suggests that the scope of sustainability reporting offered by listed Chinese companies continues to trail international norms, the timely disclosure of sustainability data by Chinese firms is a promising development.[37]

The Australian Securities Exchange followed closely with a ratio of 93%. Euronext Amsterdam placed fourth with a ratio of 85%, and the Hong Kong Stock Exchange placed fifth with a ratio of 77%.

THE SPEED WITH WHICH COMPANIES REPORT SUSTAINABILITY DATA TO THE MARKET IS AN OFTEN OVERLOOKED ASPECT OF CORPORATE SUSTAINABILITY DISCLOSURE.

36. In our experience, the gap between the release of a company's annual report and sustainability report ranges from three weeks to 13 months. Integrated reporting is being championed by several actors, including the International Integrated Reporting Council. See www.theiirc.org/.

37. Bloomberg's proprietary ESG Disclosure Score measures the quantity of an organization's ESG disclosures. The score ranges from 1 for companies that disclose a minimum amount of ESG data to 100 for those that disclose every ESG data point collected by Bloomberg. The average Bloomberg ESG Score of the 30 qualifying companies trading on the Shanghai Stock Exchange was 28.4, and the average Bloomberg ESG Score of the Shenzhen Stock Exchange's 13 qualifying companies was 27.4. The average Bloomberg ESG Score across all 32 exchanges that received a Disclosure Timeliness Score was 35.3 with a standard deviation of 8.3. This suggests that, on average, companies listed on the Shanghai and Shenzhen exchanges are disclosing fewer sustainability indicators than companies trading on most other exchanges captured in our study.

FIGURE 14: DISCLOSURE TIMELINESS SCORE

Exchange Name	Economic Type	Number of Large Companies	Number of Qualifying Companies	Percentage of Qualifying Companies That Had Disclosed 2013 Sustainability Data by July 1, 2014	Average Bloomberg ESG Score	Disclosure Timeliness Score (out of 30)
Shanghai Stock Exchange	Emerging	171	30	100%	28.4	27
Shenzhen Stock Exchange	Emerging	144	13	100%	27.4	27
Australian Securities Exchange	Developed	96	15	93%	33.5	26
Euronext Amsterdam	Developed	35	27	85%	39.9	26
Hong Kong Stock Exchange	Developed	222	44	77%	29.6	25
Tokyo Stock Exchange	Developed	404	25	76%	27.9	25
Copenhagen Stock Exchange	Developed	22	16	75%	37.8	24
Johannesburg Stock Exchange	Emerging	54	15	73%	49.2	23
Oslo Stock Exchange	Developed	19	15	73%	33.4	23
Borsa Italiana	Developed	55	33	73%	40.9	23
Euronext Paris	Developed	122	80	73%	45.2	23
London Stock Exchange	Developed	223	112	71%	38.5	22
New York Stock Exchange	Developed	1,060	277	70%	31.6	22
Nasdaq	Developed	406	45	69%	25.5	22
Helsinki Stock Exchange	Developed	23	21	67%	49.0	20
Borsa Istanbul	Emerging	28	15	67%	23.5	20
Singapore Exchange	Developed	53	12	67%	33.2	20
Deutsche Börse	Developed	98	51	67%	41.9	20
Bursa Malaysia	Emerging	50	11	64%	29.1	19
Euronext Brussels	Developed	24	11	64%	44.5	19
Stockholm Stock Exchange	Developed	57	45	62%	39.6	19
SIX Swiss Exchange	Developed	65	43	60%	40.7	18
Bangkok Stock Exchange	Emerging	42	10	60%	40.9	18
Mexican Stock Exchange	Emerging	46	20	55%	42.5	17
BME Spanish Exchanges	Developed	47	35	54%	50.2	16
Toronto Stock Exchange	Developed	162	80	46%	29.9	16
Indonesia Stock Exchange	Emerging	37	11	45%	26.1	15
BM&FBOVESPA	Emerging	86	51	37%	32.4	15
Korea Exchange	Developed	100	55	33%	45.0	15
Moscow Exchange	Emerging	37	19	26%	25.1	14
Taiwan Stock Exchange	Developed	72	37	22%	16.1	13
Santiago Stock Exchange	Emerging	31	14	21%	32.1	13

Source: Bloomberg, Corporate Knights Capital

The five exchanges with the poorest disclosure timeliness score were the BM&FBOVESPA, Korea Exchange, Moscow Exchange, Taiwan Stock Exchange and, in bottom position, the Santiago Stock Exchange. Only 21% of the Santiago Stock Exchange's 14 qualifying companies had published their sustainability data by July 1, 2014.

Overall, 63% of the 1,364 qualifying companies reviewed in our study had disclosed sustainability performance data by July 1, 2014 – a full six months after their financial year-end. This means that over one-third (37%) of large listed companies issue their sustainability reports more than six months after their financial year-end. By comparison, 1,360 (virtually 100%) of these companies had already released their 2013 financial data by this date. This analysis underscores the significant delay that characterizes current sustainability reporting.

Conclusion

Corporate reporting of the seven first-generation sustainability indicators is disconcertingly low. While companies often face substantial financial and organizational barriers in setting up systems to measure and publicly disclose their performance on these indicators, they are not keeping pace with stakeholder demand for this information.

For investors, policy-makers, environmental groups, labour organizations and employees, poor disclosure on the first-generation metrics means less performance data to work with, less insight into what constitutes best practice, less measurement and analysis, less comparison and less benchmarking.

While overall disclosure is low, there are pockets of encouraging disclosure activity that provide reason for optimism. Using a model that ranked 46 of the world's stock exchanges based on the proportion of their large listings that disclosed the seven first-generation indicators in 2012, the rate of growth in corporate reporting of the indicators from 2008 to 2012 and how quickly companies disclose sustainability data after their fiscal year-end, we found the Helsinki Stock Exchange to be home to the world's most advanced overall sustainability reporters.

Policy-makers have an important role to play in both encouraging and mandating corporate sustainability disclosure. The growth that we have historically observed in the reporting of the seven first-generation indicators is slowing, to the point where it seems to have plateaued. Substantive intervention by policy-makers – including governments, stock exchanges and securities regulators – will almost certainly be required to boost reporting of the seven first-generation indicators to meaningful levels. This information is increasingly being sought by investors, community groups and NGOs, among many other stakeholders, and expanded sustainability disclosure is consistent with the broader trend toward increased corporate transparency and accountability.

APPENDIX A: DETAILED METHODOLOGY

Ranking model: Stock exchanges were ranked on three measures:

i) The Disclosure Score (50% weight). The Disclosure Score measures the proportion of large listings that disclosed the seven first-generation indicators in 2012. First, the percentage of large companies trading on a given stock exchange that disclosed a given indicator in 2012 is determined. This is done for all 46 exchanges analyzed. Second, the 46 resulting percentages are per cent-rank scored, with the highest percentage receiving the highest score. This is repeated for each of the remaining six indicators. Finally, an exchange's Disclosure Score is a simple average of the seven per cent-rank scores. The indicators are equally weighted in terms of their contribution to the Disclosure Score.

ii) The Disclosure Growth Score (20% weight). The Disclosure Growth Score measures the growth rate in the proportion of large listings that disclosed the seven first-generation indicators over the 2008–2012 period. First, the annualized compound growth rate in the disclosure of a given indicator is calculated for the period 2008–2012. This is done for all 46 exchanges analyzed. Second, the resulting 46 annualized compound growth rates are per cent-rank scored, with the highest percentage receiving the highest score. This is repeated for each of the remaining six indicators. Finally, an exchange's Disclosure Growth Score is a simple average of the seven per cent-rank scores.

iii) The Disclosure Timeliness Score (30% weight). The Disclosure Timeliness Score measures how quickly companies report sustainability data to the market after the end of their fiscal year. First, from our universe of 4,609 companies, we removed all the ones that had not disclosed any first-generation sustainability data in 2012. From the remaining companies, we considered the ones that had a fiscal year-end December 31, 2013. If a given stock exchange had less than 10 companies remaining after applying the above screens, it was discarded from the analysis. Second, for each of the remaining companies, we looked at the existence of publicly disclosed sustainability data as at July 1, 2014, or six months after year-end on a per-exchange basis. Third, the percentage of companies that disclosed sustainability data is calculated. This is done for all eligible exchanges. Finally, the percentage values are per cent-rank scored; these are the Disclosure Scores.

In the event the Disclosure Timeliness score cannot be calculated for a given stock exchange, that stock exchange will be scored on the Disclosure Score (70%) and Disclosure Growth Score (30%).

Let's consider an illustrative example. Assume that stock exchange ABC is one of the 46 exchanges included in our analysis. Stock exchange ABC had 100 large listings as of July 1, 2014. Of these listings, 16 disclosed their 2012 employee turnover rate, 61 disclosed their energy usage, 58 disclosed their GHG emissions, 11 disclosed their injury rate, 89 disclosed their payroll, 17 disclosed their waste generated and none disclosed their water usage.

The exchange's disclosure rates are:

Indicator	Disclosure Rate
Employee turnover	16%
Energy	61%
GHGs	58%
Injury rate	11%
Payroll	89%
Waste	17%
Water	0%

Assume that ABC was the best among all 46 exchanges in terms of the disclosure of energy, GHG, payroll and waste and the worst in terms of employee turnover, injury rate and water.

The resulting per cent-rank scores are:

Indicator	Per cent-Rank Scores
Employee turnover	0%
Energy	100%
GHGs	100%
Injury rate	0%
Payroll	100%
Waste	100%
Water	0%

ABC's Disclosure Score is therefore the simple average of the above per cent-rank scores times a weight of 50%, which equals 29%.

In terms of disclosure growth, assume that over the period 2008–2012, the disclosure of each one of the seven indicators grew at an annualized compound rate as per the table below:

Indicator	Annualized Compound Growth Rate
Employee turnover	12%
Energy	48%
GHGs	50%
Injury rate	–10%
Payroll	0%
Waste	5%
Water	0%

Assume further that ABC had the best growth rate among all 46 exchanges for energy and GHG, had the median growth rate for employee turnover and the worst for injury rate, payroll, waste and water. The resulting per cent-rank scores for disclosure growth are as follows:

Indicator	Per cent-Rank Scores
Employee turnover	50%
Energy	100%
GHGs	100%
Injury rate	0%
Payroll	0%
Waste	0%
Water	0%

The Disclosure Growth Score for ABC is the simple average of the above scores times a weight of 20%, which equals 7%.

Finally, in terms of disclosure timeliness, assume that out of the 100 large companies that traded on ABC exchange on July 1, 2014, 70 had a December 31, 2013, year-end. Furthermore, as at July 1, 2014, five of these 70 companies (7%) had already disclosed their sustainability performance data.

Compared to the remaining 45 exchanges, ABC had the second lowest percentage of its large companies with a December 31, 2013, year-end that had disclosed sustainability data by July 1, 2014. This results in a per cent-rank score of 2%.

ABC's Disclosure Timeliness Score is therefore the above 2% times a weight of 30%, which equals 1%.

The sum of ABC's Disclosure Score (29%), Disclosure Growth Score (7%) and Disclosure Timeliness Score (1%) is 37%, the Overall Score.

If 37% is the third lowest Overall Score among all 46 exchanges, ABC is placed 44th out of 46 in the ranking.

APPENDIX B: DISCLOSURE RATES (2008–2012) BY STOCK EXCHANGE AND FIRST-GENERATION INDICATOR

EMPLOYEE TURNOVER

Stock Exchange	2008	2009	2010	2011	2012	Number of Large Listings
Athens Stock Exchange	27%	27%	18%	27%	18%	11
Australian Securities Exchange	17%	16%	19%	19%	19%	96
Bangkok Stock Exchange	2%	2%	7%	10%	12%	42
BM&FBOVESPA	23%	26%	30%	34%	26%	86
BME Spanish Exchanges	26%	28%	32%	47%	40%	47
Bolsa Colombia	10%	14%	14%	14%	14%	21
Borsa Istanbul	7%	14%	18%	21%	11%	28
Borsa Italiana	38%	42%	38%	36%	31%	55
Bursa Malaysia	6%	8%	16%	16%	14%	50
Copenhagen Stock Exchange	36%	36%	32%	41%	41%	22
Deutsche Börse	26%	31%	35%	38%	39%	98
Euronext Amsterdam	20%	20%	26%	31%	40%	35
Euronext Brussels	4%	8%	13%	21%	17%	24
Euronext Lisbon	27%	36%	27%	45%	36%	11
Euronext Paris	28%	31%	35%	39%	39%	122
Helsinki Stock Exchange	26%	39%	48%	57%	57%	23
Hong Kong Stock Exchange	2%	4%	4%	5%	8%	222
Indonesia Stock Exchange	0%	0%	0%	0%	22%	37
Irish Stock Exchange	17%	17%	25%	25%	25%	12
Johannesburg Stock Exchange	37%	41%	43%	50%	54%	54
Korea Exchange	10%	14%	9%	10%	13%	100
Kuwait Stock Exchange	0%	0%	0%	7%	0%	14
Lima Stock Exchange	0%	0%	7%	0%	0%	15
London Stock Exchange	20%	22%	21%	25%	23%	223
Mexican Stock Exchange	2%	9%	9%	11%	15%	46
Moscow Exchange	16%	19%	27%	30%	22%	37
Nasdaq	1%	1%	2%	3%	2%	406
National Stock Exchange	8%	10%	10%	9%	9%	129
New York Stock Exchange	3%	3%	3%	4%	4%	1,060
New Zealand Exchange	0%	8%	0%	0%	8%	13
Oslo Stock Exchange	21%	11%	21%	32%	26%	19
Philippine Stock Exchange	3%	6%	14%	11%	11%	35
Qatar Stock Exchange	0%	0%	0%	5%	0%	21
Santiago Stock Exchange	10%	13%	19%	26%	16%	31
Saudi Arabia Stock Exchange	0%	0%	0%	0%	0%	43
Shanghai Stock Exchange	1%	3%	4%	8%	6%	171
Shenzhen Stock Exchange	1%	2%	3%	3%	3%	144
Singapore Exchange	4%	9%	13%	15%	13%	53
SIX Swiss Exchange	25%	32%	29%	32%	35%	65
Stockholm Stock Exchange	35%	37%	42%	44%	42%	57
Taiwan Stock Exchange	3%	10%	15%	21%	24%	72
Tel Aviv Stock Exchange	0%	0%	4%	0%	0%	23
Tokyo Stock Exchange	1%	1%	1%	1%	1%	404
Toronto Stock Exchange	7%	8%	13%	13%	14%	162
Warsaw Stock Exchange	0%	0%	0%	0%	5%	20
Wiener Börse	25%	25%	25%	13%	13%	16

ENERGY

Stock Exchange	2008	2009	2010	2011	2012	Number of Large Listings
Athens Stock Exchange	64%	64%	64%	64%	64%	11
Australian Securities Exchange	33%	46%	57%	59%	63%	96
Bangkok Stock Exchange	5%	10%	19%	24%	21%	42
BM&FBOVESPA	34%	42%	58%	60%	60%	86
BME Spanish Exchanges	55%	62%	68%	70%	74%	47
Bolsa Colombia	10%	10%	19%	29%	43%	21
Borsa Istanbul	4%	14%	39%	39%	43%	28
Borsa Italiana	49%	55%	55%	60%	58%	55
Bursa Malaysia	4%	8%	14%	14%	16%	50
Copenhagen Stock Exchange	50%	59%	77%	77%	73%	22
Deutsche Börse	43%	46%	52%	52%	55%	98
Euronext Amsterdam	46%	49%	66%	69%	71%	35
Euronext Brussels	29%	33%	46%	46%	42%	24
Euronext Lisbon	55%	64%	82%	91%	73%	11
Euronext Paris	44%	51%	61%	64%	70%	122
Helsinki Stock Exchange	57%	74%	87%	87%	83%	23
Hong Kong Stock Exchange	6%	12%	13%	14%	18%	222
Indonesia Stock Exchange	5%	11%	16%	16%	19%	37
Irish Stock Exchange	25%	33%	50%	67%	50%	12
Johannesburg Stock Exchange	39%	61%	80%	78%	89%	54
Korea Exchange	30%	28%	43%	55%	59%	100
Kuwait Stock Exchange	0%	0%	0%	0%	7%	14
Lima Stock Exchange	0%	7%	13%	13%	0%	15
London Stock Exchange	39%	49%	70%	73%	75%	223
Mexican Stock Exchange	13%	20%	26%	35%	41%	46
Moscow Exchange	14%	19%	32%	35%	32%	37
Nasdaq	6%	10%	16%	18%	20%	406
National Stock Exchange	30%	34%	44%	43%	46%	129
New York Stock Exchange	11%	16%	25%	27%	28%	1,060
New Zealand Exchange	8%	38%	23%	31%	38%	13
Oslo Stock Exchange	42%	58%	68%	74%	74%	19
Philippine Stock Exchange	3%	9%	14%	14%	17%	35
Qatar Stock Exchange	0%	0%	0%	5%	0%	21
Santiago Stock Exchange	26%	32%	39%	35%	32%	31
Saudi Arabia Stock Exchange	0%	0%	0%	0%	2%	43
Shanghai Stock Exchange	9%	11%	12%	15%	13%	171
Shenzhen Stock Exchange	2%	3%	6%	7%	7%	144
Singapore Exchange	8%	11%	19%	25%	25%	53
SIX Swiss Exchange	43%	48%	65%	71%	71%	65
Stockholm Stock Exchange	42%	49%	79%	75%	77%	57
Taiwan Stock Exchange	10%	18%	33%	42%	46%	72
Tel Aviv Stock Exchange	4%	17%	22%	22%	22%	23
Tokyo Stock Exchange	50%	53%	64%	66%	67%	404
Toronto Stock Exchange	18%	27%	44%	46%	51%	162
Warsaw Stock Exchange	15%	15%	25%	30%	20%	20
Wiener Börse	19%	31%	38%	50%	50%	16

APPENDIX B: DISCLOSURE RATES (2008–2012) BY STOCK EXCHANGE AND FIRST-GENERATION INDICATOR

GHGs

Stock Exchange	2008	2009	2010	2011	2012	Number of Large Listings
Athens Stock Exchange	73%	73%	73%	73%	64%	11
Australian Securities Exchange	51%	58%	59%	61%	63%	96
Bangkok Stock Exchange	5%	12%	17%	19%	17%	42
BM&FBOVESPA	37%	37%	56%	56%	57%	86
BME Spanish Exchanges	49%	62%	66%	68%	74%	47
Bolsa Colombia	10%	14%	14%	19%	43%	21
Borsa Istanbul	4%	7%	32%	36%	39%	28
Borsa Italiana	38%	44%	47%	51%	53%	55
Bursa Malaysia	8%	12%	12%	14%	14%	50
Copenhagen Stock Exchange	68%	73%	77%	77%	82%	22
Deutsche Börse	47%	50%	52%	52%	53%	98
Euronext Amsterdam	49%	54%	71%	71%	77%	35
Euronext Brussels	42%	46%	46%	46%	42%	24
Euronext Lisbon	64%	64%	82%	91%	73%	11
Euronext Paris	44%	50%	57%	61%	67%	122
Helsinki Stock Exchange	52%	74%	87%	83%	87%	23
Hong Kong Stock Exchange	7%	8%	9%	10%	12%	222
Indonesia Stock Exchange	3%	5%	5%	5%	11%	37
Irish Stock Exchange	33%	33%	50%	58%	50%	12
Johannesburg Stock Exchange	56%	70%	81%	83%	91%	54
Korea Exchange	32%	42%	48%	56%	62%	100
Kuwait Stock Exchange	0%	0%	0%	0%	7%	14
Lima Stock Exchange	0%	7%	13%	7%	0%	15
London Stock Exchange	66%	69%	75%	78%	82%	223
Mexican Stock Exchange	17%	22%	22%	26%	33%	46
Moscow Exchange	8%	11%	11%	19%	22%	37
Nasdaq	11%	14%	17%	17%	19%	406
National Stock Exchange	10%	13%	26%	28%	32%	129
New York Stock Exchange	22%	25%	29%	29%	31%	1,060
New Zealand Exchange	31%	54%	38%	31%	31%	13
Oslo Stock Exchange	47%	53%	74%	74%	79%	19
Philippine Stock Exchange	3%	14%	17%	17%	17%	35
Qatar Stock Exchange	0%	0%	0%	0%	0%	21
Santiago Stock Exchange	10%	19%	29%	29%	29%	31
Saudi Arabia Stock Exchange	0%	0%	0%	0%	2%	43
Shanghai Stock Exchange	1%	0%	1%	2%	2%	171
Shenzhen Stock Exchange	1%	1%	3%	3%	3%	144
Singapore Exchange	8%	9%	19%	21%	25%	53
SIX Swiss Exchange	54%	60%	68%	68%	72%	65
Stockholm Stock Exchange	54%	63%	79%	77%	77%	57
Taiwan Stock Exchange	21%	31%	36%	40%	46%	72
Tel Aviv Stock Exchange	9%	9%	22%	17%	22%	23
Tokyo Stock Exchange	56%	59%	68%	68%	70%	404
Toronto Stock Exchange	35%	38%	50%	50%	57%	162
Warsaw Stock Exchange	10%	15%	25%	25%	10%	20
Wiener Börse	25%	31%	50%	50%	50%	16

INJURY RATE

Stock Exchange	2008	2009	2010	2011	2012	Number of Large Listings
Athens Stock Exchange	27%	27%	18%	18%	18%	11
Australian Securities Exchange	34%	34%	39%	36%	38%	96
Bangkok Stock Exchange	5%	10%	12%	12%	7%	42
BM&FBOVESPA	10%	10%	14%	13%	14%	86
BME Spanish Exchanges	15%	15%	15%	21%	19%	47
Bolsa Colombia	0%	0%	0%	0%	0%	21
Borsa Istanbul	4%	4%	4%	4%	7%	28
Borsa Italiana	11%	13%	13%	15%	16%	55
Bursa Malaysia	2%	8%	10%	10%	10%	50
Copenhagen Stock Exchange	36%	36%	36%	32%	27%	22
Deutsche Börse	16%	16%	18%	20%	20%	98
Euronext Amsterdam	14%	17%	23%	26%	26%	35
Euronext Brussels	21%	21%	21%	21%	21%	24
Euronext Lisbon	18%	27%	45%	45%	36%	11
Euronext Paris	26%	30%	31%	34%	36%	122
Helsinki Stock Exchange	35%	30%	43%	48%	48%	23
Hong Kong Stock Exchange	1%	3%	3%	3%	2%	222
Indonesia Stock Exchange	0%	0%	0%	0%	5%	37
Irish Stock Exchange	8%	8%	8%	8%	8%	12
Johannesburg Stock Exchange	17%	19%	24%	22%	26%	54
Korea Exchange	5%	13%	8%	10%	11%	100
Kuwait Stock Exchange	0%	0%	0%	0%	0%	14
Lima Stock Exchange	0%	0%	0%	0%	0%	15
London Stock Exchange	19%	21%	22%	27%	26%	223
Mexican Stock Exchange	9%	11%	11%	11%	11%	46
Moscow Exchange	5%	8%	11%	14%	14%	37
Nasdaq	1%	1%	2%	1%	1%	406
National Stock Exchange	4%	9%	9%	9%	7%	129
New York Stock Exchange	7%	8%	9%	11%	10%	1,060
New Zealand Exchange	15%	15%	15%	0%	15%	13
Oslo Stock Exchange	21%	37%	42%	42%	42%	19
Philippine Stock Exchange	0%	0%	3%	3%	0%	35
Qatar Stock Exchange	0%	0%	0%	0%	0%	21
Santiago Stock Exchange	16%	13%	13%	13%	13%	31
Saudi Arabia Stock Exchange	0%	0%	0%	0%	0%	43
Shanghai Stock Exchange	0%	0%	0%	0%	1%	171
Shenzhen Stock Exchange	0%	0%	0%	1%	0%	144
Singapore Exchange	2%	4%	2%	2%	4%	53
SIX Swiss Exchange	8%	14%	12%	14%	12%	65
Stockholm Stock Exchange	11%	14%	14%	14%	12%	57
Taiwan Stock Exchange	0%	0%	0%	0%	10%	72
Tel Aviv Stock Exchange	0%	0%	0%	0%	0%	23
Tokyo Stock Exchange	10%	11%	10%	10%	9%	404
Toronto Stock Exchange	13%	15%	15%	18%	18%	162
Warsaw Stock Exchange	0%	0%	0%	0%	0%	20
Wiener Börse	6%	13%	13%	19%	19%	16

APPENDIX B: DISCLOSURE RATES (2008–2012) BY STOCK EXCHANGE AND FIRST-GENERATION INDICATOR

PAYROLL

Stock Exchange	2008	2009	2010	2011	2012	Number of Large Listings
Athens Stock Exchange	64%	73%	100%	100%	100%	11
Australian Securities Exchange	73%	77%	77%	78%	77%	96
Bangkok Stock Exchange	74%	90%	93%	93%	95%	42
BM&FBOVESPA	70%	78%	90%	94%	93%	86
BME Spanish Exchanges	87%	85%	89%	96%	94%	47
Bolsa Colombia	62%	62%	62%	71%	86%	21
Borsa Istanbul	71%	89%	96%	93%	86%	28
Borsa Italiana	85%	85%	84%	84%	78%	55
Bursa Malaysia	84%	86%	90%	94%	98%	50
Copenhagen Stock Exchange	91%	91%	86%	91%	91%	22
Deutsche Börse	82%	82%	85%	85%	85%	98
Euronext Amsterdam	63%	69%	71%	71%	60%	35
Euronext Brussels	83%	79%	88%	88%	83%	24
Euronext Lisbon	100%	100%	100%	100%	100%	11
Euronext Paris	85%	84%	84%	84%	88%	122
Helsinki Stock Exchange	87%	87%	87%	91%	91%	23
Hong Kong Stock Exchange	83%	87%	92%	93%	93%	222
Indonesia Stock Exchange	86%	97%	97%	100%	100%	37
Irish Stock Exchange	92%	75%	75%	67%	83%	12
Johannesburg Stock Exchange	76%	74%	78%	80%	76%	54
Korea Exchange	60%	62%	77%	84%	86%	100
Kuwait Stock Exchange	79%	71%	71%	71%	71%	14
Lima Stock Exchange	60%	67%	67%	53%	40%	15
London Stock Exchange	85%	85%	87%	90%	86%	223
Mexican Stock Exchange	4%	2%	4%	15%	17%	46
Moscow Exchange	68%	76%	70%	76%	86%	37
Nasdaq	15%	16%	16%	15%	16%	406
National Stock Exchange	88%	91%	91%	92%	93%	129
New York Stock Exchange	10%	10%	11%	10%	10%	1,060
New Zealand Exchange	69%	100%	100%	100%	92%	13
Oslo Stock Exchange	79%	79%	79%	79%	74%	19
Philippine Stock Exchange	80%	83%	91%	97%	91%	35
Qatar Stock Exchange	67%	81%	76%	76%	76%	21
Santiago Stock Exchange	32%	77%	81%	84%	87%	31
Saudi Arabia Stock Exchange	79%	79%	88%	88%	91%	43
Shanghai Stock Exchange	20%	32%	77%	74%	90%	171
Shenzhen Stock Exchange	26%	33%	72%	74%	96%	144
Singapore Exchange	79%	79%	83%	81%	83%	53
SIX Swiss Exchange	77%	78%	78%	77%	78%	65
Stockholm Stock Exchange	72%	74%	74%	77%	79%	57
Taiwan Stock Exchange	92%	92%	94%	94%	94%	72
Tel Aviv Stock Exchange	52%	57%	57%	57%	57%	23
Tokyo Stock Exchange	77%	79%	79%	80%	80%	404
Toronto Stock Exchange	2%	2%	7%	7%	7%	162
Warsaw Stock Exchange	85%	85%	95%	95%	95%	20
Wiener Börse	69%	69%	69%	69%	69%	16

WASTE

Stock Exchange	2008	2009	2010	2011	2012	Number of Large Listings
Athens Stock Exchange	36%	45%	55%	55%	45%	11
Australian Securities Exchange	23%	25%	25%	23%	28%	96
Bangkok Stock Exchange	5%	10%	14%	14%	10%	42
BM&FBOVESPA	22%	28%	35%	38%	37%	86
BME Spanish Exchanges	49%	55%	57%	60%	66%	47
Bolsa Colombia	10%	14%	14%	29%	38%	21
Borsa Istanbul	4%	4%	14%	21%	14%	28
Borsa Italiana	45%	47%	49%	49%	45%	55
Bursa Malaysia	2%	6%	8%	8%	8%	50
Copenhagen Stock Exchange	36%	50%	45%	45%	50%	22
Deutsche Börse	39%	39%	42%	42%	40%	98
Euronext Amsterdam	34%	31%	43%	49%	43%	35
Euronext Brussels	25%	33%	38%	42%	33%	24
Euronext Lisbon	45%	64%	55%	64%	55%	11
Euronext Paris	35%	37%	42%	50%	48%	122
Helsinki Stock Exchange	48%	65%	74%	78%	70%	23
Hong Kong Stock Exchange	3%	5%	5%	7%	7%	222
Indonesia Stock Exchange	3%	3%	0%	0%	0%	37
Irish Stock Exchange	17%	25%	25%	25%	17%	12
Johannesburg Stock Exchange	13%	20%	24%	26%	26%	54
Korea Exchange	17%	20%	11%	14%	23%	100
Kuwait Stock Exchange	0%	0%	0%	0%	0%	14
Lima Stock Exchange	0%	0%	7%	7%	0%	15
London Stock Exchange	38%	40%	42%	45%	41%	223
Mexican Stock Exchange	11%	17%	20%	22%	30%	46
Moscow Exchange	32%	35%	35%	43%	41%	37
Nasdaq	5%	6%	6%	6%	6%	406
National Stock Exchange	9%	11%	10%	11%	11%	129
New York Stock Exchange	9%	11%	13%	14%	14%	1,060
New Zealand Exchange	8%	8%	8%	8%	8%	13
Oslo Stock Exchange	21%	26%	47%	47%	42%	19
Philippine Stock Exchange	3%	6%	11%	11%	11%	35
Qatar Stock Exchange	0%	0%	0%	0%	0%	21
Santiago Stock Exchange	19%	23%	29%	29%	29%	31
Saudi Arabia Stock Exchange	0%	0%	0%	0%	0%	43
Shanghai Stock Exchange	1%	2%	2%	2%	2%	171
Shenzhen Stock Exchange	1%	1%	2%	1%	1%	144
Singapore Exchange	2%	6%	13%	13%	15%	53
SIX Swiss Exchange	40%	40%	40%	43%	45%	65
Stockholm Stock Exchange	28%	35%	33%	35%	37%	57
Taiwan Stock Exchange	10%	22%	32%	35%	33%	72
Tel Aviv Stock Exchange	4%	9%	9%	4%	9%	23
Tokyo Stock Exchange	50%	53%	57%	58%	57%	404
Toronto Stock Exchange	10%	12%	17%	20%	20%	162
Warsaw Stock Exchange	15%	20%	20%	20%	10%	20
Wiener Börse	19%	19%	19%	19%	25%	16

APPENDIX B: DISCLOSURE RATES (2008–2012) BY STOCK EXCHANGE AND FIRST-GENERATION INDICATOR

WATER

Stock Exchange	2008	2009	2010	2011	2012	Number of Large Listings
Athens Stock Exchange	64%	64%	73%	73%	64%	11
Australian Securities Exchange	26%	31%	29%	26%	29%	96
Bangkok Stock Exchange	5%	12%	17%	17%	12%	42
BM&FBOVESPA	36%	40%	44%	50%	42%	86
BME Spanish Exchanges	53%	60%	64%	66%	70%	47
Bolsa Colombia	10%	14%	19%	29%	38%	21
Borsa Istanbul	11%	18%	29%	29%	25%	28
Borsa Italiana	47%	49%	51%	53%	47%	55
Bursa Malaysia	4%	10%	14%	12%	10%	50
Copenhagen Stock Exchange	36%	50%	50%	55%	55%	22
Deutsche Börse	42%	39%	39%	43%	42%	98
Euronext Amsterdam	31%	29%	40%	43%	49%	35
Euronext Brussels	25%	29%	33%	38%	33%	24
Euronext Lisbon	55%	73%	64%	82%	64%	11
Euronext Paris	43%	47%	48%	52%	57%	122
Helsinki Stock Exchange	43%	52%	65%	74%	65%	23
Hong Kong Stock Exchange	6%	9%	10%	10%	12%	222
Indonesia Stock Exchange	3%	11%	14%	14%	11%	37
Irish Stock Exchange	8%	17%	17%	17%	17%	12
Johannesburg Stock Exchange	31%	41%	46%	44%	44%	54
Korea Exchange	20%	21%	12%	14%	22%	100
Kuwait Stock Exchange	0%	0%	0%	0%	0%	14
Lima Stock Exchange	0%	7%	7%	7%	0%	15
London Stock Exchange	34%	37%	37%	41%	41%	223
Mexican Stock Exchange	11%	15%	17%	24%	33%	46
Moscow Exchange	30%	41%	43%	51%	41%	37
Nasdaq	5%	6%	7%	6%	6%	406
National Stock Exchange	12%	16%	14%	15%	18%	129
New York Stock Exchange	9%	11%	14%	14%	17%	1,060
New Zealand Exchange	0%	8%	0%	0%	0%	13
Oslo Stock Exchange	16%	21%	26%	26%	26%	19
Philippine Stock Exchange	3%	9%	17%	14%	14%	35
Qatar Stock Exchange	0%	0%	0%	0%	0%	21
Santiago Stock Exchange	16%	23%	35%	35%	29%	31
Saudi Arabia Stock Exchange	0%	0%	0%	0%	2%	43
Shanghai Stock Exchange	6%	8%	7%	9%	8%	171
Shenzhen Stock Exchange	2%	1%	3%	4%	5%	144
Singapore Exchange	8%	11%	17%	25%	23%	53
SIX Swiss Exchange	40%	45%	43%	45%	49%	65
Stockholm Stock Exchange	37%	42%	44%	40%	40%	57
Taiwan Stock Exchange	8%	15%	26%	33%	24%	72
Tel Aviv Stock Exchange	4%	13%	17%	13%	17%	23
Tokyo Stock Exchange	47%	49%	53%	54%	54%	404
Toronto Stock Exchange	12%	14%	15%	17%	17%	162
Warsaw Stock Exchange	15%	15%	15%	15%	5%	20
Wiener Börse	19%	19%	19%	25%	31%	16

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