2013

# Trends in Sustainability Disclosure:

## *Benchmarking the World's* ***Stock Exchanges***

**Written by:** CK Capital
October 2013

Corporate Knights Capital

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## *Benchmarking the World's* ***Stock Exchanges***

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**Acknowledgements**

CK Capital prepared this report with the financial support of Aviva Investors and Standard & Poor's (a division of McGraw Hill Financial), and with in-kind support from Bloomberg. The authors wish to thank Pietro Bertazzi, Eszter Vitorino and Mike Wallace (Global Reporting Initiative), Danielle Chesebrough (Principles for Responsible Investment), Gregory Elders (Bloomberg), Rachel Jackson (Association of Chartered Certified Accountants), Anthony Miller (UNCTAD) and Steve Waygood (Aviva Investors) for their feedback on the report.

**Notes**

The opinions expressed in this report are those of CK Capital and do not necessarily reflect the views of Aviva Investors or Standard & Poor's.

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

**Ernst Ligteringen – Chief Executive Officer, The Global Reporting Initiative**

That only the most basic information beyond the financial bottom line was available to investors little over a decade ago seems almost unimaginable now. Today, thousands of companies worldwide produce a sustainability report or disclose non-financial information in one form or another. Indeed, the very fact that a report such as this can be entitled *'Trends in Sustainability Disclosure'* demonstrates the sheer extent of change.

The practice of sustainability reporting has already gone well and truly mainstream amongst multinational companies, with the figure standing at 95% for the largest 250 companies in the world. And "world" is most definitely the operative word, as disclosing sustainability information is already a listing requirement in countries as diverse as the UK, Brazil, South Africa and China.

But what of the next tier of companies? Of the thousands of listed companies that are still not disclosing high-quality non-financial data? Who and what will be the drivers for the next stage in this information revolution? Traditional financial reporting provides a relatively narrow, two-dimensional snapshot of a company's present and future. Reporting on non-financial information is all about providing business and investors with a comprehensive, 3-D picture of how sustainable a company's business model really is. The global financial crisis of 2008 highlighted like never before the dearth of sustainability data critical for effective risk analysis. Many investors such as pension funds increasingly want to incorporate key sustainability considerations into their due diligence, but markets are failing them.

The challenge is how to replicate the critical mass of material, comparable sustainability data disclosed by the very largest companies with data from *all* listed companies. The absence of this information from companies poses a cost, because it devalues the information provided by others. Sustainability reporting has come a long way in a short time, and the latest generation of Global Reporting Initiative's (GRI) Guidelines, G4, offer a robust standard. This is, however, only part of the solution.

Public policy has an important role to play, and this report, prepared by CK Capital, presents a number of compelling policy recommendations that will inform thinking in the investment community. In particular, the recommendation that policy-makers can reference sustainability reporting standards developed by transnational standard-setters supports GRI's long-standing call for a comparable and consistent global reporting language to inform markets. Stock market regulators are uniquely placed to drive change in this area by smart regulation through listing requirements.

I've never met an investor who wanted less high-quality, relevant company information at their fingertips, nor one who craved to know less about the long-term value prospects of a company. And this demand for sustainability data is only set to rise. The Rana Plaza factor disaster in Bangladesh demonstrated just how critical far flung supply chains are to the long-term viability of an investment—damaging reputations and hitting share prices. Moreover, those that contest that climate change is a material concern are now consigned to the margins, and pressure on commodity prices, water and other natural resources, in part due to the rising population, have only just begun.

In the future, a company that chooses not to report will be sending a message loud and clear to markets. Its name will sit in the n/a category on electronic trading platforms. Not applicable. Not accountable. Subtext? Not a business to invest in. Be it supplied in a sustainability report or a report that integrates that sustainability information with financial information, sustainability performance information will not only become increasingly relevant to investors; its use will become increasingly routine. GRI and likeminded and aligned organizations such as IIRC will continue to advocate smart policy from stock exchanges and government. The investment community needs to be part of that conversation, and I hope they will support market regulators that are taking a lead role to drive decision-making that is better for investors, better for markets and better for wider society.

*Ernst Ligteringen*
**Chief Executive Officer**
**The Global Reporting Initiative**

**Paul Druckman – Chief Executive Officer, International Integrated Reporting Council**

On reading this report I was reminded of a quote by the wise US investor Warren Buffett: *"Someone's sitting in the shade today because someone planted a tree a long time ago"*. Sustainability reporting has moved in the space of a few short years from being a niche activity undertaken by committed and far-sighted innovators, to common sense and mainstream for many of the world's largest companies. This report, prepared by CK Capital, highlights the progress made over the last year, and also poses challenges to market participants and the policy community.

Businesses that have embraced sustainability reporting are not only protecting themselves, their investors and stakeholders, they are also helping to secure the future stability of the financial system and global economy. What the trailblazing innovators have done is build the essential architecture of a new corporate reporting movement by developing the best practice and evidence base that showcase the benefits of a more relevant and meaningful reporting landscape.

The Global Financial Crisis will be studied for many decades—its origins, its effects and its lessons. There is one thing that we can be sure about—it was the first truly global financial crisis, demonstrating the interconnectedness of the world we live in today. It brought into sharp focus the limits of the reach of national governments and regulators.

There are at least two further global phenomena that pose a challenge to the 'business as usual' mind-set. One is the environmental crisis that is placing unprecedented pressure on natural resources all around the world. The second is the information revolution, resulting in an age of radical transparency brought about by globalization, technology and an explosion in the volume of data. This transparency enables us to see into the soul of a business—its values as well as its balance sheet.

The impact of these events is twofold: they provide the impetus for changed corporate and investor behaviour; and they change the balance of risk itself—for businesses, investors and global capital markets. Today's risks lie both inside and outside the business.

Businesses have never been more important in people's lives—they create opportunities through employment, training and development, they commercialise ideas and take risks, they invest in the short, medium and long term, in new technologies that will cure diseases and transform the way we live. Yet rarely is the richness of business activity communicated in technicolor through the corporate reporting process. For too long businesses have been straightjacketed into a compliance mind-set, rather than one where the richness of their activities and their contribution to value creation, can be properly measured, evaluated and reported.

The challenge facing investors, as the recipients of this information, is stark. A company's share price no longer acts as the defining market signal of a business' value because the ingredients of corporate value are more diverse today than ever before. These ingredients are not routinely measured and reported cohesively and comparably in the financial statements—the vehicle that remains the holy grail of many mainstream investment institutions. So the evolution in corporate reporting that sustainability reporting is doing so much to bring about must move hand-in-hand with changes in the behaviour of investors and the needs of business. Only then will the share price be restored as the reliable signal of the value of a business. This will provide confidence that investors have the information that enables the efficient and productive allocation of financial capital.

The report also points to developments in Integrated Reporting. Integrating Reporting will help hardwire sustainability issues, amongst other "capitals", into mainstream decision-making and reporting, by providing the source of integrated information—data and information in the context of a business' ability to create value over the short, medium and long-term. It will be informed by integrated thinking, the transformative process of breaking down silos and recognising the interconnections between the different operating units within a business.

As the report points out, stock exchanges have a major role to play in setting the agenda, as well as responding to cultural and behavioural shifts in market practice. They remain a strong and vital force in attracting and promoting investment as the institutions most exposed to the cut and thrust of competitive capital flows. It comes as no surprise that companies listed on emerging market exchanges are embracing material sustainability criteria as these markets set themselves apart from the crowd to demonstrate the importance of high quality corporate governance and reporting in attracting risk capital.

The report shows how much has been done, but it also keeps up the pressure for change in the right areas. The spirit of innovation must be maintained as sustainability reporting matures. We must continue to have the foresight, vision and courage to keep planting the trees, showing the way and making it easy for others to follow—never losing sight of the ultimate goal: economic and business decision-making that is aligned to deliver sustainable value creation that brings benefits to providers of financial capital, society and the environment.

*Paul Druckman*
**Chief Executive Officer**
**International Integrated Reporting Council**

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## About CK Capital

CK Capital is the investment research arm of Corporate Knights, Inc. Based in Toronto, Canada, CK Capital offers investment products and services to asset owners and managers, including the Clean Cap and Integrated Cap suite of equity indices and customized portfolio solutions. In 2013, CK Capital launched the world's first sustainable smart beta equity strategy.*

## About this report

This report investigates the extent to which the world's large companies are disclosing the seven "first generation" sustainability indicators: employee turnover, energy, greenhouse gases (GHGs), lost-time injury rate, payroll, waste and water. These metrics meet the twin test of being broadly relevant for businesses in all industries and being generally widely disclosed by the world's listed companies. Analysis is aggregated at the level of individual stock exchanges, and includes examination of disclosure rates based on most current reporting (2011), growth in disclosure rates (2007 – 2011) and disclosure timeliness. A policy inventory is also assembled, with 167 specific instruments analyzed along three dimensions: policy type, policy clarity and policy scope. The relationship between each exchange's performance in the disclosure ranking (Part I) and the policy environment in its home country (Part II) is analyzed.

## About Aviva Investors

Aviva Investors is the global asset management business of Aviva plc. The business delivers investment management solutions, services and client-driven performance to clients worldwide. Aviva Investors operates in 15 countries in Asia-Pacific, Europe, North America and the United Kingdom, with assets under management of £245 billion at June 30, 2013.

## About S&P

Standard & Poor's (S&P), a division of McGraw Hill Financial, is a leading provider of global credit benchmarks and research across industries, asset classes and geographies that investors, businesses and markets use to foster economic development and growth around the world. S&P and its predecessor organizations have been in business for over 150 years. As one of the world's leading providers of independent credit risk research and benchmarks, S&P publishes more than a million credit ratings on debt issued by sovereign, municipal, corporate and financial sector entities. In 2012 alone, S&P rated US$3.5 trillion in new debt. S&P has 1,400+ analysts, managers and economists in 23 offices around the world assessing the variables that affect creditworthiness. In frequent dialogue with senior managers and industry leaders, S&P examines everything from the state of an enterprise and its position in its industry, to the state of a region and the globe.

* For more information on CK Capital's investment services, please visit http://corporateknightscapital.com/

# Executive Summary

In this paper, the second in the series, we rank the world's stock exchanges based on the extent to which their large listed companies are disclosing the seven "first generation" sustainability indicators: employee turnover, energy, greenhouse gases (GHGs), lost-time injury rate, payroll, waste and water.

As in last year's ranking, we find that corporate sustainability reporting practices diverge sharply across the world's equity markets. European stock exchanges once again performed favourably, accounting for eight of the 10 top ranked exchanges, but this belies the incredible catch-up process that is unfolding in emerging markets: emerging markets-based stock exchanges are on track to overtake their developed-world counterparts in terms of quantitative sustainability disclosure performance by 2015.

While corporate sustainability disclosure can be driven by many factors, we find evidence that successful disclosure practices are closely associated with a specific policy permutation. Nine of the 10 top ranked exchanges are located in countries with sustainability disclosure policies that are mandatory, prescriptive and broad—what we refer to as "super policies." Of the 10 bottom-ranked exchanges, nine are based in countries with no super policies in place.

Corporate sustainability reporting is important. It is structurally and intellectually consistent with the general trend towards increasing corporate transparency. It provides a more complete picture of a company's social and environmental impacts. And it gives investors an additional source of information that can be mined—and potentially exploited in the context of portfolio management.

The great slowdown that we have discovered in quantitative corporate sustainability reporting is therefore triply problematic. Closing the existing disclosure gap will almost certainly require intervention by policymakers.

Yet this is hardly a straightforward task. Sustainability data often falls into a "grey zone" insofar as financial materiality is concerned, which can give companies scope for legally circumventing disclosure requirements. And for some stock exchanges, sustainability disclosure policy may be at cross-purposes with their business model.

Beyond these considerations, policymakers of all stripes are often burdened with a complex and almost overwhelming set of policy tools that can be used to drive corporate reporting practices.

For policymakers that are looking to overcome these barriers, this paper provides insight into relevant disclosure trends, clear analysis about which policies are working, and a framework to begin the process.

## Headline Findings

- The **BME Spanish Exchanges**, based in Spain, had the highest overall score in this year's ranking, moving up from 4th position in last year's assessment.[1] The strong showing of the BME Spanish Exchanges reflects the comparatively advanced reporting practices of large Spanish listings, which may be aided by legislation recently introduced by the Government of Spain.[2]
- Stock exchanges based in emerging markets are on track to **overtake those based in developed markets by 2015**, in terms of the proportion of their large listings that disclose the seven first generation sustainability indicators. This would constitute a watershed moment in the history of corporate reporting, as the developed world has effectively had a 20-year head start in driving sustainability disclosure.
- Super policies—disclosure policies that are **mandatory, prescriptive** and **broad**—are most strongly correlated with sustainability disclosure excellence.
- After early and rapid gains prior to 2008, global disclosure rates for most of the first generation indicators are **flattening out**, indicating a slowdown in the growth of quantitative sustainability reporting by the world's listed companies.

### Top 10 Stock Exchanges by Overall Score

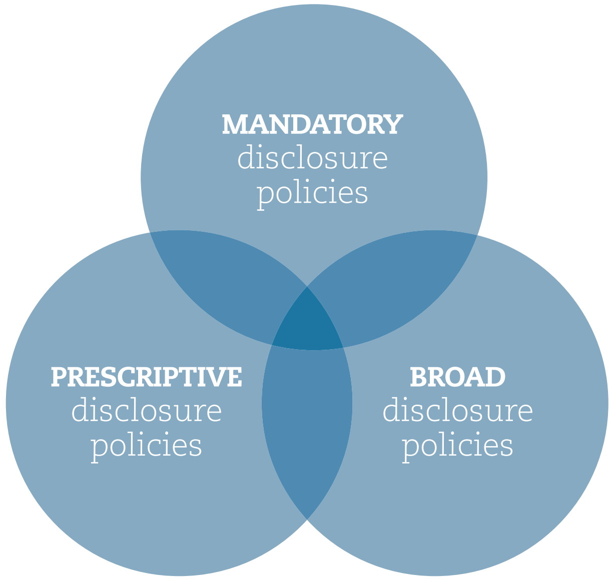
| RANK, 2013 | RANK, 2012 | NAME OF STOCK EXCHANGE | COUNTRY | NUMBER OF LARGE COMPANIES | OVERALL SCORE, 2013 (MAX 100) |
|---|---|---|---|---|---|
| 1 | 4 | BME Spanish Exchanges | Spain | 37 | 83 |
| 2 | 3 | Helsinki Stock Exchange | Finland | 19 | 82 |
| 3 | N/A | Tokyo Stock Exchange | Japan | 341 | 80 |
| 4 | 7 | Oslo Stock Exchange | Norway | 20 | 75 |
| 5 | 5 | Johannesburg Stock Exchange | South Africa | 49 | 74 |
| 6 | 10 | Euronext Paris | France | 106 | 72 |
| 7 | 2 | Copenhagen Stock Exchange | Denmark | 20 | 71 |
| 8 | 15 | SIX Swiss Exchange | Switzerland | 54 | 68 |
| 9 | N/A | Athens Stock Exchange | Greece | 9 | 67 |
| 10 | 1 | Euronext Amsterdam | Netherlands | 32 | 66 |

*Source: CK Capital*

1 The BME Spanish Exchanges consist of the Madrid Stock Exchange, the Valencia Stock Exchange, the Bilbao Stock Exchange and the Barcelona Stock Exchange.

2 The Spanish Sustainable Economy Law Article 39, which entered into force in 2011, contains reporting obligations for private and public companies as well as guidelines for the inclusion of non-financial information in company financial disclosures.

**Essential design characteristics of sustainability disclosure policy**




*Policymakers should consider incorporating these three characteristics into their policy design process.*

*Source: CK Capital*

## Key Findings

### *Sustainability disclosure trends*

- The global **Materials sector**, which consists primarily of mining companies, is the world's most transparent from a first generation sustainability indicator standpoint, while the **Financials sector** is the most opaque.
- Large companies, defined as those with a market cap in excess of US$2 billion, **are nearly 10 times more likely** than small companies to engage in quantitative sustainability reporting.
- Only **3% of the world's large companies** (117 out of 3,972) and **0.04% of the world's small companies** (20 out of 56,710) currently offer their stakeholders complete first generation sustainability reporting.

### *Stock exchange ranking*

- The **BME Spanish Exchanges** took top spot in this year's ranking, followed by the Helsinki Stock Exchange, the Tokyo Stock Exchange, the Oslo Stock Exchange and the Johannesburg Stock Exchange.
- The Korea Exchange was the "most improved" exchange, jumping from the 27th spot in last year's ranking to 16th in this year's study.
- Australia is home to the world's "quickest" sustainability reporters. The Australian Securities Exchange placed 2nd on this measure in last year's study, which speaks to a permanently quickened reporting cycle in the Australian market relative to other countries.[3]
- The Tokyo Stock Exchange placed 1st overall in a sub-ranking of the world's 10 largest exchanges, followed by the Euronext Paris, the London Stock Exchange, the Shanghai Stock Exchange and the Hong Kong Stock Exchange. The two U.S.-based exchanges, the NYSE and Nasdaq, placed 8th and 9th respectively.

### *Sustainability disclosure policies*

- Across the 40 countries covered in our study, 60% of the quantitative disclosure policies in place (100 of 167) **were enacted in developed countries**; the remainder (40%) were implemented in emerging markets.

3 Some of this out-performance may reflect the predominance of a June fiscal year-end in the Australian market.

- **Governments** have historically been the primary implementing authority, responsible for 114 of the 167 policies in our inventory (68%).
- **Securities regulators** are the distinct minority player, implementing only eight sustainability disclosure policies since the early 1970s, or 5% of all policies reviewed in our study.
- The 45 stock exchanges in our sample were **responsible for 31 disclosure policies**, all of which were implemented after 2000, and in many cases at the behest of government or securities regulators.

## Recommendations

Our analysis gives rise to three main recommendations.

First, stock exchanges—**and policymakers of all description**—that are considering implementing a sustainability disclosure policy would be well-advised to structure it as a mandatory, prescriptive and broad instrument. Mandatory policies impose reporting obligations on affected companies, although the degree to which policymakers can (or choose to) impose this characteristic varies. Prescriptive policies are clear and provide details about the expected disclosures. Broad policies—those that cover a wide range of sustainability indicators and offer few carve outs in terms of company size or industry type—are desirable because they offer flexibility and cast a wide reporting net. In order to craft policies that are prescriptive and broad, policymakers can reference sustainability reporting standards developed by transnational standard-setters, such as the Global Reporting Initiative (GRI). This type of policy hybridization—public policymakers using privately developed standards—is increasingly used in the financial and health & safety industries, and offers clear benefits in the sustainability reporting field.

Second, **stock exchanges** have hitherto played a relatively minor role in the development of sustainability disclosure policy, although their *potential* role is recognized to be hugely significant. By incorporating clear sustainability disclosure requirements into their listing standards, stock exchanges can create a powerful incentive for companies to measure and publicly disclose sustainability performance data to the market. Many stock exchanges have expressed the legitimate concern that imposing stricter listing requirements could discourage future listings, which runs central to their business model. While this perspective is logically sound, we recommend that stock exchanges invest the necessary human and financial resources to fully explore the perceived negative trade-off between sustainability standards and the listing propensity of public firms. This could take the form of interviews with senior management at both existing and prospective listings. CK Capital uncovered sparse evidence to support this perceived negative trade-off, indicating more research in this area is urgently required.

Third, of all the players that can influence corporate behaviour through policy, the world's **securities regulators** have to date been the least prolific, which is perhaps understandable given their historic mandate. But, like stock exchanges, securities regulators could theoretically play a significant role by integrating sustainability disclosure into capital markets requirements. We recommend that the **International Organization of Securities Commissions (IOSCO)** set up a roundtable to explore whether (and how) capital markets rules to facilitate corporate sustainability disclosure could be in the long-term interest of its membership.

Additionally, we recommend that the **World Federation of Exchanges (WFE)** build a forum that its members can use to share best practices regarding the integration of sustainability disclosure standards into listing requirements.

# Introduction

In our inaugural report in this series, published in June 2012 under the auspices of the Sustainable Stock Exchanges initiative, we explored global sustainability disclosure trends by introducing the first sustainability disclosure ranking of the world's stock exchanges.[4] The report analyzed the world's composite exchanges using a comprehensive "all in" measure of corporate sustainability reporting, with a specific focus on how each exchange's large listings compared on measures of reporting breadth, reporting improvement rate and reporting timeliness.

In last year's report, we demonstrated that corporate sustainability reporting practices diverged sharply across the world's composite exchanges. The Netherlands took top spot with a score of 81/100, followed by Denmark (81), Finland (78), Spain (77) and South Africa (75) rounding out the top five. Thailand, Turkey, Israel, Poland and Peru found themselves in the bottom five.

Left unexamined in last year's report was the relationship between sustainability disclosure and sustainability disclosure policy.

For this year's report, we set out to investigate this question for companies trading on 45 stock exchanges around the world.

While most companies disclose sustainability data voluntarily and not as a response to policy, our hypothesis was that the world's top sustainability disclosers—and, by extension, their stock exchanges—would still be based in countries with a relatively rich policy environment.

To test this hypothesis, we built a parsimonious analytical framework that let us break down disclosure policies along three dimensions: policy type, policy clarity and policy scope. Ultimately, looking across the 40 countries in our sample, we sought to identify those policy characteristics that have been historically correlated with sustainability disclosure excellence.

In summary, this year's report has two overall objectives.

First, like last year's study, this year's report shows which stock exchanges are home to the world's most advanced corporate sustainability reporters. While our analytical window has changed marginally—to the 2007 – 2011 period from 2006 – 2010 last year—the methodology is effectively identical. Exchanges are once again scored on the extent to which their large listings disclose what we have termed the seven "first generation" sustainability indicators: employee turnover, energy, greenhouse gases (GHGs), lost-time injury rate, payroll, waste and water. And each exchange's overall score is once again a function of three factors: reporting breadth, reporting improvement rate and reporting timeliness.

Because we use a standardized evaluation framework that holds constant over time, stock exchanges can use our study to benchmark the quantitative sustainability reporting of their large listings. This in turn provides a rules-based platform for stock exchanges to compete against one another, insofar as sustainability disclosure and corporate transparency is concerned.

Second, unlike last year's study, this year's report aims to provide first-level insight into the types of policies that have been associated with top-tier disclosure practices. Targeting the global policymaking community, this section aims to support the roll-out of smart disclosure policy.

4 The report is available for download at this link: http://corporateknightscapital.com/publications/

## Breakout discussion:

### the seven first generation sustainability indicators

This report investigates the extent to which the world's large public companies are disclosing the seven first generation sustainability indicators. These are metrics that are a) broadly relevant for companies across all industries; and b) among the most widely disclosed by the world's publicly traded companies. **Figure 1** shows the proportion of the world's ~4,000 large companies that disclosed each first generation sustainability indicator in 2011, and how each indicator is tethered to financial materiality.[5] [6]

**Figure 1:** First generation sustainability indicators

| FIRST GENERATION SUSTAINABILITY INDICATOR | GLOBAL REPORTING INITIATIVE (GRI) INDICATOR | DISCLOSURE RATE, 2011 | MATERIALITY DRIVER |
|---|---|---|---|
| Employee turnover | LA2 | 14% | Low employee turnover is often correlated with effective human capital management, which is a well-established returns driver in many sectors. |
| Energy | EN3, EN4 | 27% | 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 | 30% | 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. |
| Lost-time injury rate | LA7 | 13% | Workplace health and safety can be a useful proxy for management quality. |
| Payroll | LA3 | 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. |
| Waste | EN22 | 22% | Waste generated per unit of revenue can be an insightful measure of operational efficiency. |
| Water | EN8 | 25% | Water is an increasingly scarce global resource, and a firm's water use practices can reflect management foresight. |

*Source: The Global Reporting Initiative, CK Capital*

This report comes at a critical juncture in the evolution of corporate sustainability reporting, with various groups calling for more disclosure that is comparable across reporting entities and that is more relevant for investment decision-making. These trends have been the catalyst for a number of recent innovations in the sustainability reporting space. Notable developments include:

- The Global Reporting Initiative's G4 Sustainability Reporting Guidelines;[7]
- The pilot reporting framework developed by the International Integrated Reporting Council (IIRC)[8]; and
- The Sustainability Accounting Standards Board's (SASB) sustainability reporting standards.[9]

5 For a complete description of the GRI Indicators, see Appendix A. For more information on these and other GRI Indicators, please visit https://www.globalreporting.org/reporting/G3andG3-1/Pages/default.aspx

6 Large companies defined as those with more than US$2 billion in market capitalization.

7 For more information, see https://www.globalreporting.org/reporting/g4/Pages/default.aspx

8 Information about the IIRC's pilot reporting framework is available at http://www.theiirc.org/

9 Details about the SASB's forthcoming reporting standards can be found at http://www.sasb.org/

The policy landscape for corporate sustainability disclosure has also been highlighted in recent years by several key developments. Chief among these is the outcome document of the 2012 United Nations Conference on Sustainable Development (Rio+20). Paragraph 47 of the document called on governments and other stakeholders, with the support of the UN system, "to develop models for best practice and facilitate action for the integration of sustainability reporting."[10]

Moreover, the European Commission's proposed legislation on non-financial reporting could enhance the social and environmental transparency of large European companies and further encourage quantitative sustainability disclosures.[11]

These developments make the case that corporate sustainability reporting is becoming an increasingly important business tool. Despite its (largely) voluntary nature, sustainability reporting has been found to be "a vital component of shareholder, employee, and stakeholder relations, a differentiator in competitive industries and (a means to) foster investor confidence, trust and employee loyalty."[12] Several academic papers have found that firms that voluntarily disclose information to the market, including sustainability data, have a lower cost of capital than firms that do not.[13]

For these reasons, demand among institutional investors, asset managers, community groups and other stakeholders for comparable, quantitative corporate sustainability data is likely to increase going forward.

Against this backdrop, stock exchanges have hitherto played a relatively minor role in the development of sustainability disclosure policy, although their potential role is recognized to be hugely significant. By incorporating sustainability disclosure requirements into their listing standards, stock exchanges can create a powerful incentive for companies to measure and publicly disclose sustainability performance data to the market.

Many stock exchanges have expressed the legitimate concern that imposing stricter listing requirements could discourage future listings, which runs central to their business model.

Some exchanges, such as the BM&FBOVESPA in Brazil and the Johannesburg Stock Exchange in South Africa, have carved out an early leadership position on the sustainability disclosure front.

Eight exchanges and counting have joined the Sustainable Stock Exchanges, a United Nations initiative aimed at exploring how stock exchanges can enhance corporate transparency.[14]

And while most exchanges have not formally committed to the concept of sustainability reporting, a great many are strategically reviewing whether (and how) sustainability reporting fits with their long-term business plan. Many of these challenges are likely to be discussed at the 53rd General Assembly of the World Federation of Exchanges, during a special panel discussion on Sustainability.[15]

10 Excerpt taken from "The Future We Want," paragraph 47. To download the report, please visit http://www.uncsd2012.org/thefuturewewant.html

11 For a review of the proposed legislation and stakeholder consultation, see http://ec.europa.eu/internal_market/accounting/non-financial_reporting/

12 "The Value of Sustainability Reporting," Ernst & Young and the Boston College Center for Corporate Citizenship, 2013, page 4.

13 For a good discussion of this relationship, see Cheynel, Edwige, "A Theory of Voluntary Disclosure and Cost of Capital" (April 12, 2012). Review of Accounting Studies, Forthcoming. Available at SSRN: http://ssrn.com/abstract=2112174

14 Sustainable Stock Exchanges is an initiative co-convened by the United Nations-supported Principles for Responsible Investment, the UN Conference on Trade and Development, the UN Environment Programme Finance Initiative, and the UN Global Compact. It is a peer-to-peer learning platform for exploring how exchanges, in collaboration with investors, regulators and companies, can enhance corporate transparency—and ultimately performance—on ESG (environmental, social and corporate governance) issues and encourage sustainable investment. For more information, see http://www.sseinitiative.org/

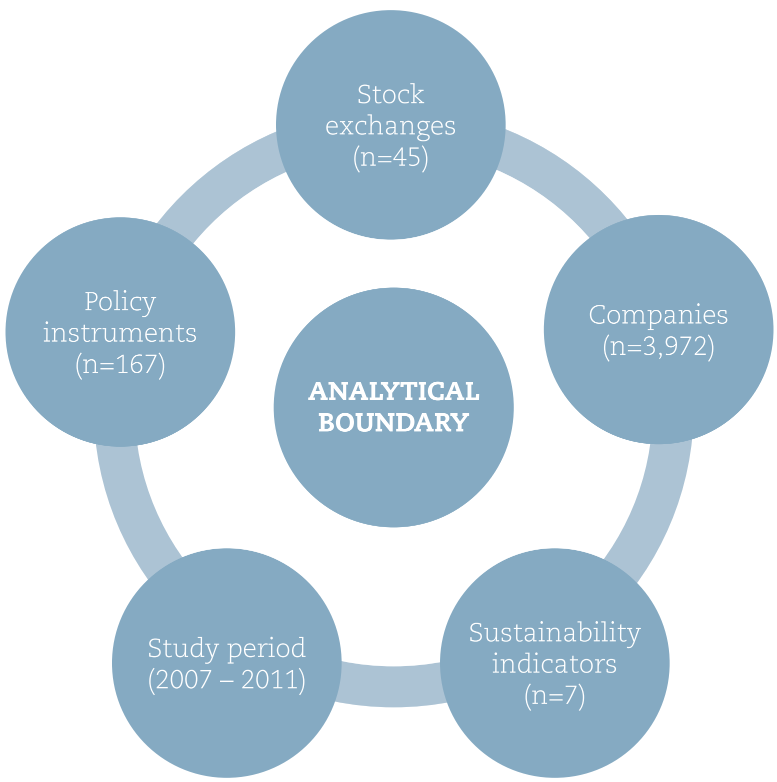
15 As of October 3, 2013, the agenda includes a Sustainability panel from 14:30 to 15:30 on October 30, 2013. For more information, see http://www.wfemexico2013.com/agenda.php

# Methodology

The analytical boundary for this year's study is summarized in **Figure 2**. The disclosure practices of 3,972 companies were analyzed across the 2007 – 2011 period, with a focus on our seven first generation sustainability indicators. Since most companies disclose sustainability data between three and 12 months after their financial year-end, 2011 data is the most recent full data set and was therefore used in this year's ranking.[16] A total of 45 individual stock exchanges, distributed across 40 countries, are represented in this sample.

In the second part of the study, a total of 167 policy instruments from these 40 countries were catalogued along three dimensions: policy type, policy clarity and policy scope.

**Figure 2:** Analytical boundary




*Source: CK Capital*

16 This is to say that a non-trivial proportion of public companies that report sustainability data have not yet disclosed their data for 2012.

The methodology that we have developed in this report to measure corporate sustainability disclosure and to guide the policy analysis is comprehensive, clear and analytically rigorous.[17] However, it is not perfect. We highlight below some elements that fall outside our study.

*Large vs. medium exchanges*. While small exchanges, defined in our study as those with less than 10 large company listings,[18] are automatically excluded from the ranking, all other exchanges are treated equally. This means that the largest exchanges, such as the New York Stock Exchange with 921 large company listings, are put into the same analytical bucket as medium sized exchanges, such as the Amsterdam exchange (32 large company listings). While there is no statistical relationship between the size of an exchange and its performance in our ranking,[19] large exchanges may face more structural challenges than medium sized exchanges in operationalizing sustainability disclosure requirements.

*Exchange characteristics.* In our study, characteristics such as ownership structure, or the degree of autonomy that exchanges have to implement listing requirements, are left unexamined.

*Sector composition.* The sector composition of each exchange's large listings is not taken into account in our ranking. Exchanges that are home to a disproportionate share of companies in industries known to have strong disclosure practices, such as mining and energy companies, may be advantaged in our ranking.

*Bloomberg data conventions.* All data is subject to the data collection methodologies employed by Bloomberg. For instance, in cases where a first-time sustainability reporter discloses both current and historical performance data simultaneously, Bloomberg's convention is to backfill the data. In order to enhance the comparability of data, Bloomberg discards a small but unspecified number of data points that do not meet its quality thresholds. While the merits of this practice are obvious, it could cloud the analysis of specific corporate reporting trends. It also means that historical disclosure rates presented in this year's report may be marginally different than those presented in the 2012 report.

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

17 The report's methodology is outlined in full in Appendix B.

18 The specific rule is that an exchange must have maintained a minimum of 10 large listings for a minimum of three years out of five in our study period (2007 – 2011). A large company is defined as one with market capitalization in excess of US$2 billion.

19 A scatter plot of exchange size (by number of listings) versus ranking score showed no statistically significant relationship between the two variables.

# Corporate Sustainability Disclosure: The State of Play

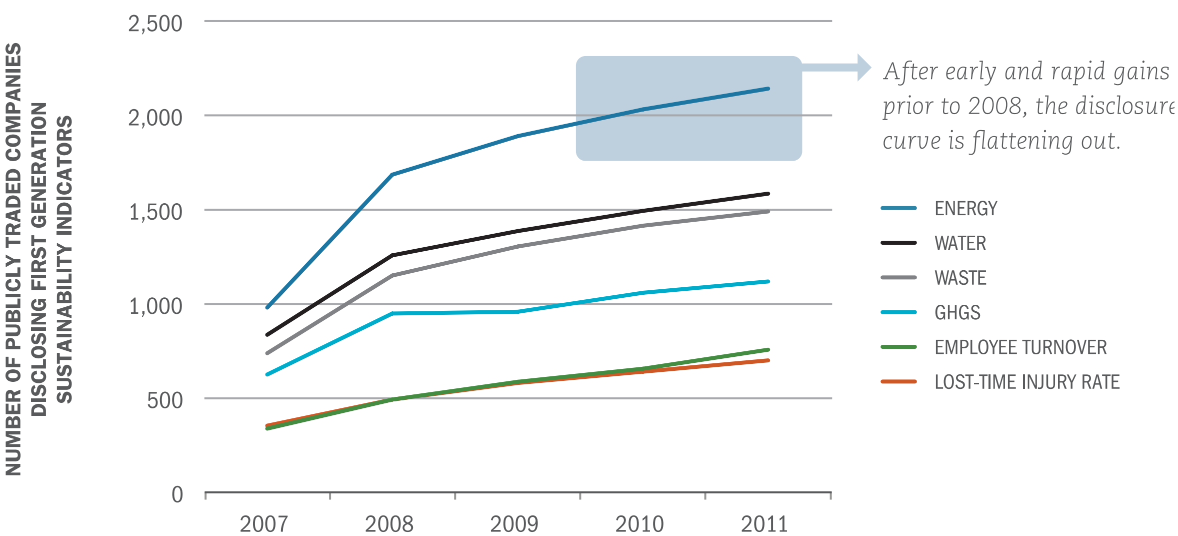
Before turning to the main sections of this paper, it is instructive to first analyze the current state of global corporate sustainability disclosure. This analysis helps provide context for this paper's subsequent discussions. The data collected through our study support three main findings.

***More and more companies are disclosing sustainability data, but the rate of change is slowing dramatically.***

It is a common refrain in sustainability and policy circles that sustainability disclosure is on the rise. Our analysis substantiates this view, but it also reveals that the *growth rate* in disclosure is slowing. At least for the seven first generation indicators, disclosure is effectively plateauing. As an illustrative example, the number of public companies disclosing energy data to the market grew from a mere 979 in 2007 to 2,141 in 2011, an increase of 119%. However, the *annual increase* in companies reporting energy use dropped from 72% in 2007 – 2008 to 5% in 2010 – 2011. A similar pattern is found on each of the other first generation indicators. These data are shown in **Figure 3**.[20]

We believe this slowdown may reflect a natural saturation rate of quantitative sustainability reporting among the world's publicly traded companies, at least in the context of the current global policy environment. It is likely that new types of intervention by policymakers would be needed to push disclosure beyond these saturation rates, and, ultimately, to achieve complete first generation reporting by the world's publicly traded companies.

**Figure 3:** Number of publicly traded companies disclosing first generation sustainability indicators, 2007 – 2011




*Source: CK Capital, Bloomberg*

20 Payroll is excluded from Figure 3 because, unlike the other first generation sustainability indicators, it is effectively a mandatory disclosure item in many financial reporting regimes, including the International Accounting Standards Board's IAS 19 – Employee Benefits.

### *Disclosure rates vary substantially by sector*

Disclosure rates for first generation sustainability indicators vary significantly by industrial sector. In many ways, this is an entirely expected outcome; substantial differences exist across industries in terms of the type and magnitude of sustainability impacts. Moreover, each industry faces a different pressure and incentive structure to (voluntarily) engage in sustainability disclosure.[21]

But beyond these conventions, the sector-specific disclosure rates found in this year's study present a number of interesting findings. The data show that the Materials sector, which consists primarily of mining companies, is by far the world's most transparent sector. As shown in **Figure 4**, the Materials sector has the highest sectoral disclosure rate on five of the seven first generation sustainability indicators.[22] [23]

This finding generally corresponds to the significant environmental and community impacts associated with mining activities, the increasing sophistication of NGOs focused on scrutinizing mining operations (especially in emerging markets) and other factors. It is noteworthy that almost half (46%) of the world's large Materials companies now disclose their GHG emissions.

By contrast, the Financials sector, which consists primarily of commercial banks and insurance companies, is the world's most opaque sector from a quantitative sustainability disclosure standpoint. With the notable exception of Payroll data,[24] which is disclosed by 61% of the world's large financial institutions, first generation indicators are poorly reported in the Financials sector. Only 16% of the world's large financial institutions currently disclose their water use, only 13% disclose employee turnover data and only 3% disclose their lost-time injury rate. This compares to an average disclosure rate across all large companies of 25% for water, 14% for employee turnover and 13% for lost-time injury rate.

**Figure 4:** Large company disclosure rates by sector, 2011

| GLOBAL INDUSTRY CLASSIFICATION SYSTEM (GICS) SECTOR | FIRST GENERATION SUSTAINABILITY INDICATORS: EMPLOYEE TURNOVER | ENERGY | GHGS | LOST-TIME INJURY RATE | PAYROLL | WASTE | WATER |
|---|---|---|---|---|---|---|---|
| Consumer Discretionary | 8% | 21% | 27% | 7% | 59% | 20% | 21% |
| Consumer Staples | 13% | 34% | 35% | 17% | 68% | 27% | 32% |
| Energy | 14% | 21% | 24% | 21% | 39% | 17% | 18% |
| Financials | 13% | 18% | 20% | 3% | 61% | 12% | 16% |
| Health Care | 10% | 28% | 25% | 13% | 49% | 23% | 24% |
| Industrials | 15% | 30% | 37% | 14% | 67% | 27% | 27% |
| Information Technology | 11% | 25% | 27% | 6% | 42% | 23% | 23% |
| Materials | 21% | 47% | 46% | 33% | 67% | 38% | 41% |
| Telecommunication Services | 22% | 33% | 37% | 10% | 78% | 25% | 32% |
| Utilities | 22% | 35% | 41% | 21% | 66% | 33% | 36% |

*Source: CK Capital, Bloomberg*

21 For instance, the extent of NGO monitoring varies significantly by sector, and by country.

22 The highest disclosure rate for an indicator across sectors is highlighted in green, while the lowest disclosure rate is highlighted in red.

23 These disclosure rates have been calculated as the ratio of the number of large companies in a given sector (based on the Global Industry Classification System – GICS) that are disclosing a given first generation sustainability indicator to the total number of large companies as at December 31, 2011.

24 The disclosure of payroll data is in part regulated by financial reporting standards such as IFRS, which may explain the notably higher disclosure rate of that indicator compared to the other six.

While the GRI and other organizations have found the global financial services sector to be a high reporting sector, it is the weakest sector globally on the seven first generation sustainability indicators.

### *Sustainability disclosure is mostly a large-company phenomenon, although considerable reporting gaps exist even among large companies*

A well-known large-cap bias is said to exist with sustainability disclosures and we find concrete evidence of this trend insofar as the seven first generation indicators are concerned.

Of the 60,682 publicly traded companies in our starting analytical universe, 3,972 (7%) can be designated as large and 56,710 (93%) as small using our standard threshold of US$2 billion in market capitalization.[25] This distribution pattern is effectively the same as the one we encountered in last year's study, and it underscores how the vast majority of the world's listed companies are small or micro-caps.

Of the large companies surveyed, 2,737 (69%) disclosed at least one of the seven first generation sustainability indicators in 2011, and 117 (3%) disclosed all of the indicators. Of the small companies in our study, only 4,216 (7%) disclosed at least one of the seven first generation sustainability indicators in 2011, and only 20 (0.04%) disclosed all seven indicators.

These data plainly show how large companies are nearly 10 times more likely than small companies to engage in quantitative sustainability reporting, using the seven first generation indicators as a yardstick. Small and micro-caps are effectively absent in the world of first generation sustainability reporting. While small firms typically have fewer resources than their large company counterparts to channel to non-core activities, the sustainability footprint of the world's ~57,000 small public companies is far from non-trivial. While taking into consideration the resource constraints facing small firms, policymakers may want to explore new and innovative ways to incentivize (or mandate) the participation of these firms in the realm of sustainability disclosure and sustainability management in general.

All of this is *not* to suggest that the reporting practices of the world's large companies are somehow beyond improvement, or even sufficiently expansive. As mentioned above, despite today's environment of heightened corporate awareness about the benefits of sustainability disclosure, and the modest but consistent proliferation of policy instruments that encourage (or mandate) sustainability reporting, only 3% of the world's large companies (117 out of 3,972) currently offer their stakeholders complete first generation sustainability reporting. This is a decidedly sub-optimal state of affairs for investors, community groups, employees and other company stakeholders.

25 This is the same threshold that we used in our 2012 report.

# Part I: Measuring Sustainability Disclosure on the World's Stock Exchanges

In this section we rank the world's stock exchanges based on the sustainability disclosure practices of their listed companies.

A total of 45 stock exchanges[26] were included in our study, and the sustainability disclosure practices of each exchange's large listings were evaluated on three measures: disclosure rate, disclosure growth and disclosure timeliness.[27]

## Methodology

The ranking is established by deriving a *disclosure score, disclosure growth score* and a *disclosure timeliness score* as follows:

**a.** Disclosure score: The disclosure score ranges from 0 – 50. The first step in determining the score involved looking at the average number of first generation sustainability indicators disclosed by large companies trading on each qualifying stock exchange in 2011. In the second step, this raw score was percent ranked.[28] In the third and final step, each exchange's percent ranked score was multiplied by 50.

**b.** Disclosure growth score: The disclosure growth score ranges from 0 – 20. The first step in determining the score involved looking at the average compound annual growth rate over the 2007 – 2011 period of disclosure by large companies on each qualifying exchange for each of the first generation sustainability metrics. In the second step, this raw score was percent ranked. In the third step, each exchange's percent rank was multiplied by 20.

**c.** Disclosure timeliness score: The disclosure timeliness score ranges from 0 – 30. The first step in determining the score involves looking at the percentage of large companies on each exchange with a Q4 2012 financial year-end that had published 2012 sustainability data by July 1, 2013. In the second step, this raw score was percent ranked. In the third step, each exchange's percent rank was multiplied by 30.

Each exchange's overall score is a sum of these three sub-scores.

While this approach allows for comprehensive assessment, it does not purport to be a *complete* evaluation of corporate sustainability disclosure practices. For instance, it does not measure the *quality* of data being reported (e.g., the comparability or accuracy of the data).[29] However, as mentioned above, our approach constitutes a robust measure of disclosure performance, based on clear and objective criteria.

26 Identified as stock exchanges with at least 10 large companies in any three of the five years in our study period (2007 – 2011). Large companies defined as those in Bloomberg's equity universe with a market capitalization of at least US$2 billion as of December 31, 2011.

27 The weighting scheme that we employed for these factors is effectively arbitrary. The disclosure score was overweighted (50%) because it was felt to be the most important and most easily measured metric. The disclosure growth score was underweighted (20%) because it was felt to be comparatively the least important and the most difficult to measure. The disclosure timeliness score was weighted in between the other factors (30%) because it receives comparatively little attention in the sustainability disclosure literature.

28 Percent ranking is a common statistical technique that converts a value in a data set into a percentage based on each value's relationship to the total data set. To illustrate, the Euronext Lisbon stock exchange had the highest raw disclosure score, at 5.4 out of a possible 7. It therefore received a percent rank of 100%. The Nasdaq stock exchange, by contrast, had the lowest raw disclosure score at 0.48 out of 7. It therefore received a percent rank of 0%.

29 However, since Bloomberg employs quality control mechanisms at source, our analysis was based on data that had already passed integrity thresholds.

## Results

The overall results of our assessment are found in **Figure 5**.

**Figure 5:** Overall results

| RANK, 2013 | RANK, 2012 | QUARTILE, 2013 | QUARTILE, 2012 | NAME OF STOCK EXCHANGE | COUNTRY | NUMBER OF LARGE COMPANIES | OVERALL SCORE, 2013 (MAX 100) |
|---|---|---|---|---|---|---|---|
| 1 | 4 | 1st | 1st | BME Spanish Exchanges | Spain | 37 | 83 |
| 2 | 3 | 1st | 1st | Helsinki Stock Exchange | Finland | 19 | 82 |
| 3 | N/A | 1st | N/A | Tokyo Stock Exchange | Japan | 341 | 80 |
| 4 | 7 | 1st | 1st | Oslo Stock Exchange | Norway | 20 | 75 |
| 5 | 5 | 1st | 1st | Johannesburg Stock Exchange | South Africa | 49 | 74 |
| 6 | 10 | 1st | 2nd | Euronext Paris | France | 106 | 72 |
| 7 | 2 | 1st | 1st | Copenhagen Stock Exchange | Denmark | 20 | 71 |
| 8 | 15 | 1st | 2nd | SIX Swiss Exchange | Switzerland | 54 | 68 |
| 9 | N/A | 1st | N/A | Athens Stock Exchange | Greece | 9 | 67 |
| 10 | 1 | 1st | 1st | Euronext Amsterdam | Netherlands | 32 | 66 |
| 11 | 12 | 1st | 2nd | London Stock Exchange | United Kingdom | 185 | 65 |
| 12 | 6 | 1st | 1st | Stockholm Stock Exchange | Sweden | 46 | 65 |
| 13 | 8 | 2nd | 1st | Borsa Italiana | Italy | 43 | 65 |
| 14 | 16 | 2nd | 2nd | Euronext Lisbon | Portugal | 9 | 64 |
| 15 | 13 | 2nd | 2nd | Deutsche Börse | Germany | 81 | 62 |
| 16 | 27 | 2nd | 3rd | Korea Exchange | South Korea | 84 | 60 |
| 17 | 11 | 2nd | 2nd | Australian Securities Exchange | Australia | 86 | 60 |
| 18 | 17 | 2nd | 2nd | Singapore Exchange | Singapore | 49 | 60 |
| 19 | 26 | 2nd | 3rd | Moscow Exchange | Russia | 33 | 56 |
| 20 | 21 | 2nd | 3rd | Santiago Stock Exchange | Chile | 34 | 56 |
| 21 | 9 | 2nd | 1st | BM&FBOVESPA | Brazil | 83 | 56 |
| 22 | 19 | 2nd | 3rd | Euronext Brussels | Belgium | 21 | 52 |
| 23 | 18 | 2nd | 2nd | Hong Kong Stock Exchange | China | 198 | 51 |

**Figure 5:** Overall results *(cont'd)*

| RANK, 2013 | RANK, 2012 | QUARTILE, 2013 | QUARTILE, 2012 | NAME OF STOCK EXCHANGE | COUNTRY | NUMBER OF LARGE COMPANIES | OVERALL SCORE, 2013 (MAX 100) |
|---|---|---|---|---|---|---|---|
| 24 | 23 | 3rd | 3rd | Bursa Malaysia | Malaysia | 47 | 50 |
| 25 | N/A | 3rd | N/A | Taiwan Stock Exchange | China | 64 | 50 |
| 26 | N/A | 3rd | N/A | Shanghai Stock Exchange | China | 148 | 49 |
| 27 | 24 | 3rd | 3rd | Wiener Börse | Austria | 15 | 47 |
| 28 | 25 | 3rd | 3rd | Mexican Stock Exchange | Mexico | 42 | 46 |
| 29 | N/A | 3rd | N/A | Osaka Securities Exchange | Japan | 14 | 46 |
| 30 | 28 | 3rd | 4th | Toronto Stock Exchange | Canada | 140 | 42 |
| 31 | N/A | 3rd | N/A | Bolsa Colombia | Colombia | 16 | 41 |
| 32 | 32 | 3rd | 4th | Borsa Istanbul | Turkey | 29 | 40 |
| 33 | N/A | 3rd | N/A | New York Stock Exchange | United States | 921 | 39 |
| 34 | 30 | 3rd | 4th | National Stock Exchange | India | 99 | 39 |
| 35 | 34 | 4th | 4th | Warsaw Stock Exchange | Poland | 17 | 35 |
| 36 | N/A | 4th | N/A | Nasdaq | United States | 323 | 33 |
| 37 | N/A | 4th | N/A | Indonesia Stock Exchange | Indonesia | 46 | 32 |
| 38 | N/A | 4th | N/A | Shenzhen Stock Exchange | China | 105 | 29 |
| 39 | 20 | 4th | 3rd | Philippine Stock Exchange | Philippines | 31 | 26 |
| 40 | 31 | 4th | 4th | Bangkok Stock Exchange | Thailand | 40 | 23 |
| 41 | N/A | 4th | N/A | Kuwait Stock Exchange | Kuwait | 14 | 17 |
| 42 | N/A | 4th | N/A | Saudi Arabia Stock Exchange | Saudi Arabia | 40 | 15 |
| 43 | 35 | 4th | 4th | Lima Stock Exchange | Peru | 15 | 12 |
| 44 | N/A | 4th | N/A | Qatar Stock Exchange | Qatar | 18 | 11 |
| 45 | 33 | 4th | 4th | Tel Aviv Stock Exchange | Israel | 16 | 8 |

*Source: CK Capital*

The BME Spanish Exchanges, based in Spain, received top billing in this year's ranking, moving up from 4th position in last year's assessment.[30] The strong showing of the BME Spanish Exchanges reflects the comparatively advanced reporting practices of large Spanish listings, which may be aided by legislation recently introduced by the Government of Spain.[31]

The top 10 were rounded out by the Helsinki Stock Exchange, the Tokyo Stock Exchange, the Oslo Stock Exchange, the Johannesburg Stock Exchange, the Euronext Paris, the Copenhagen Stock Exchange, the SIX Swiss Exchange, the Athens Stock Exchange and the Euronext Amsterdam.

It is no surprise to see the strong performance of European stock exchanges in our ranking. Corporate sustainability reporting has long been encouraged across Europe, with the recent Grenelle II legislation in France the latest in a long line of progressive European disclosure policy.

Seven of the stock exchanges that made the top 10 in last year's assessment are also in this year's top 10.

The Euronext Amsterdam stock exchange, last year's top ranked exchange, came in 10th place in this year's assessment. Despite comparable performance in terms of its disclosure timeliness score and disclosure score, the exchange's disclosure growth score dropped precipitously in this year's ranking, indicating a general slowdown in the uptake of quantitative sustainability reporting by Dutch firms.[32]

At the other end of the spectrum, the Tel Aviv, Qatar, Lima, Saudi Arabia and Kuwait stock exchanges placed in the bottom five in this year's ranking. The Lima and Tel Aviv stock exchanges were also bottom five performers in last year's ranking.

The Korea stock exchange is the "most improved" exchange, jumping from the 27th spot in last year's ranking to 16th in this year's study. This jump is mainly due to a rapid increase in the number of first generation indicators reported by South Korean companies. Last year, large companies trading in South Korea were found to disclose on average 2.4 of seven first generation indicators, while this year South Korean companies disclosed, on average, 3.7 indicators. Part of this surge in quantitative sustainability disclosure may be a result of South Korea's Green Posting System, which was passed in 2012 but included prior industry consultation.

30 The BME Spanish Exchanges consist of the Madrid Stock Exchange, the Valencia Stock Exchange, the Bilbao Stock Exchange and the Barcelona Stock Exchange.

31 The Spanish Sustainable Economy Law Article 39, which entered into force in 2011, contains reporting obligations for private and public companies as well as guidelines for the inclusion of non-financial information in company financial disclosures.

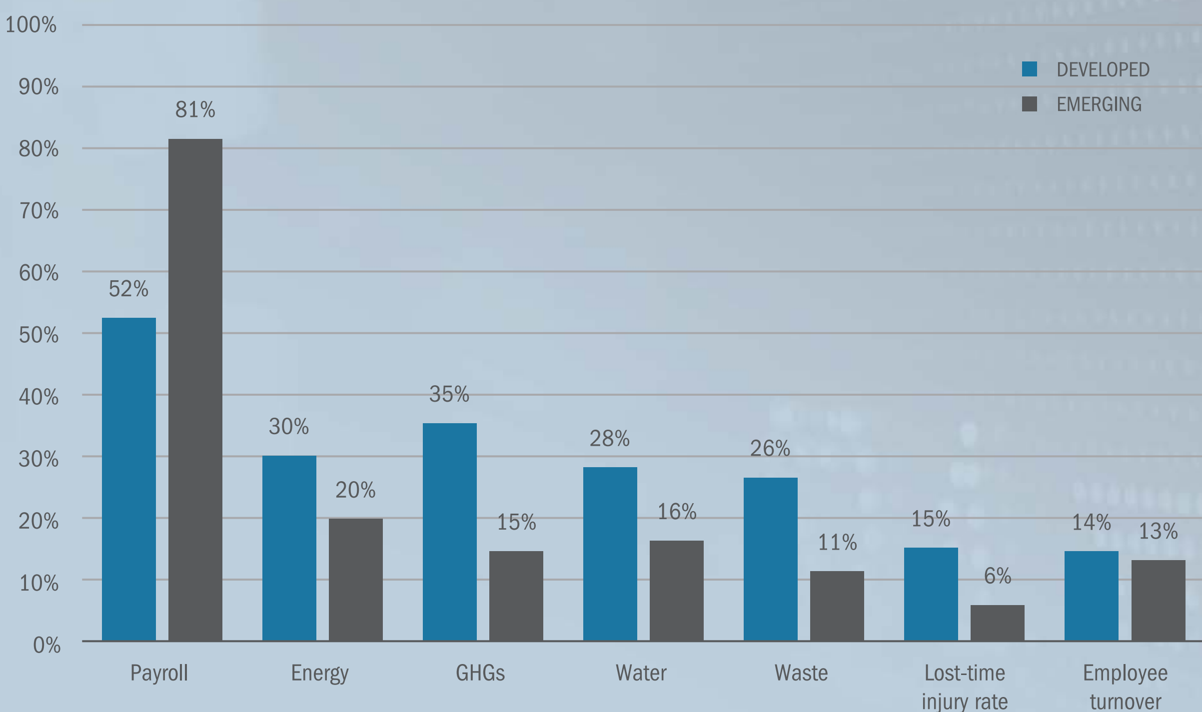
32 The annualized growth rate of the average disclosure of the seven first generation indicators over the 2007 – 2011 period for the Euronext Amsterdam stock exchange (Netherlands composite exchange) was 5%, compared to 35% over the 2006 – 2010 period.

# Break-out discussion:

## developed vs. emerging markets

Do companies listed on emerging markets-based exchanges exhibit different sustainability disclosure patterns than their developed market counterparts? We compare the reporting breadth, reporting improvement rate and reporting timeliness of both segments to find out.

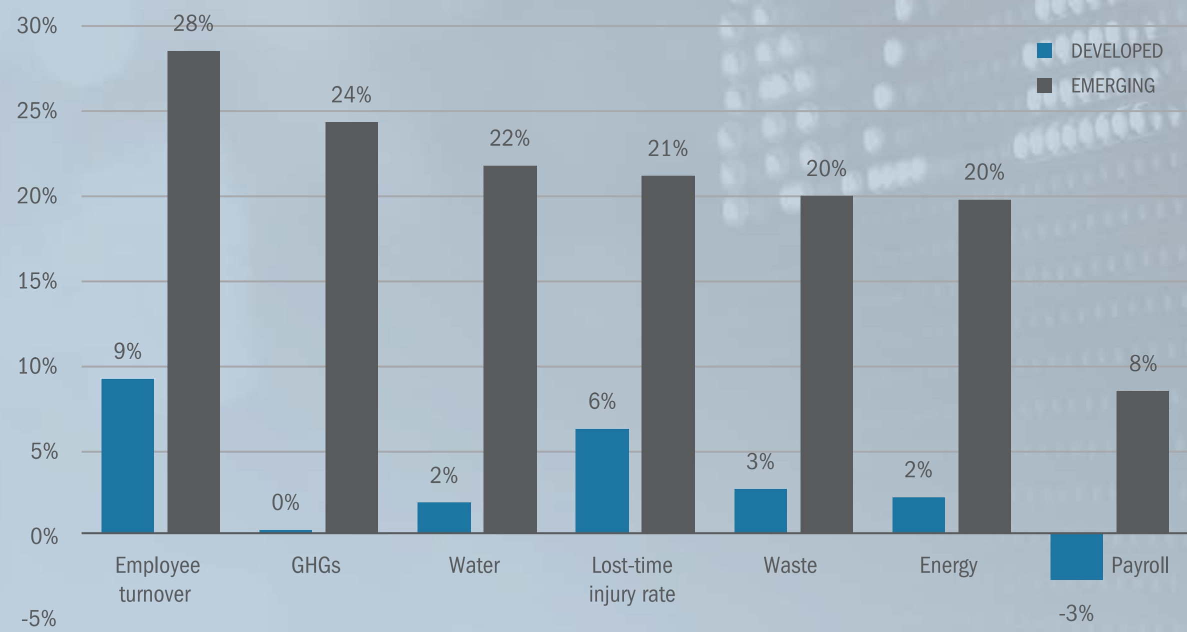
**Figure 6:** First generation indicator disclosure rate by economic region, 2011




*Source: CK Capital*

As shown in **Figure 6**, disclosure rates in 2011 were almost uniformly higher for companies listed on exchanges based in developed markets. Interestingly, the data show that Payroll disclosure is higher among companies based in emerging markets. This anomaly likely reflects the fact that the United States, the largest developed market economy, has not adopted International Financial Reporting Standards (IFRS), the accounting standard followed by the majority of the rest of the world that mandates disclosure of payroll costs.

**Figure 7:** First generation indicator disclosure growth rate by economic region, 2007 – 2011




*Source: CK Capital*

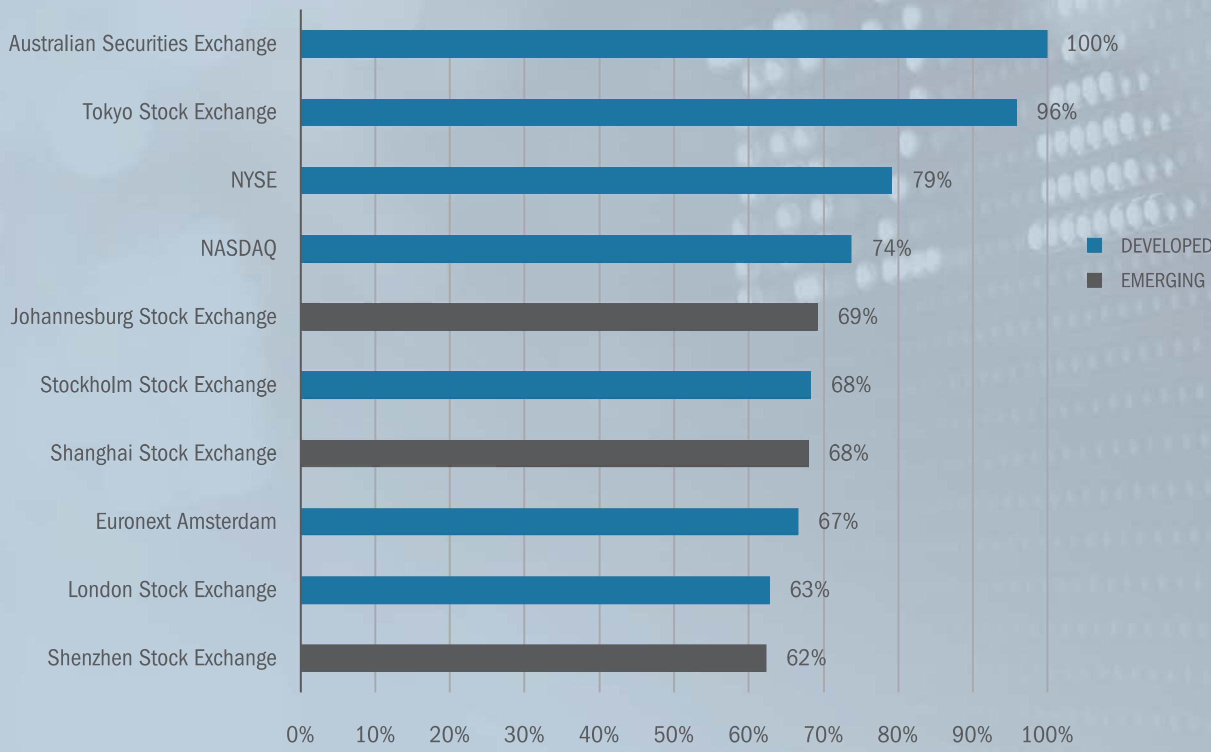
As shown in **Figure 7**, the compound annual growth rates (CAGRs) of the disclosure rates of the seven first generation indicators for companies listed on developed market exchanges are significantly lower than those of their emerging markets counterparts. This shows that companies listed on exchanges in emerging markets are improving disclosure at a faster rate than in developed markets; however, as the indicator disclosure rate chart (**Figure 6**) suggests, the emerging markets exchange CAGRs benefit from lower overall disclosure rates, which lowers the bar when calculating growth rates.

Still, these data reveal that a great catch-up process is taking place on the world's emerging markets-based exchanges. A back of the envelope analysis suggests that emerging markets exchanges will overtake developed market exchanges by 2015, in terms of disclosure of the seven indicators, on average, assuming that 2007 – 2011 disclosure growth rates continue going forward.[33]

Sustainability disclosure excellence among emerging markets firms is typified by the Brazilian mining giant Vale SA, India's Tata Motors and Digi, a Malaysian telecommunications company. These firms are three of only 117 large companies globally (out of a total of 3,972) that currently offer their investors complete first generation sustainability reporting.

33 This calculation assumed that disclosure rates for developed and emerging markets exchanges continue to grow from 2012 onwards at the respective compound annual growth rates experienced over the 2007 – 2011 period. The number of years required for emerging markets exchanges to surpass the disclosure rates of developed market exchanges was then calculated for each indicator. An average of the number of years required across the seven indicators was then taken to determine when emerging markets exchanges would overtake the exchanges of developed markets.

**Figure 8:** Reporting timeliness scores, top 10 exchanges




*Source: CK Capital*

Finally, an analysis of the reporting timeliness of the top 10 exchanges reveals that exchanges in developed markets are clearly leading exchanges in emerging markets. As shown in **Figure 8**, only three exchanges of the top 10 in terms of reporting timeliness are based in emerging markets: Johannesburg, Shanghai and Shenzhen. This finding also likely reflects the greater size of companies listed on exchanges based in the developed markets, and the greater resources and stakeholder needs that accompany companies of their stature.

In sum, exchanges in the developed markets are leading the way in terms of disclosure rates and reporting timeliness; however, exchanges in the emerging markets are quickly closing the disclosure gap.

## Disclosure score

The Euronext Lisbon exchange had the highest disclosure score of all exchanges considered in this year's ranking. The nine large companies trading on the Euronext Lisbon disclosed, on average, 5.3 of the seven first generation indicators in 2011.[34]

As shown in **Figure 9**,[35] the Euronext Lisbon exchange's nine large companies offered complete disclosure on Payroll and GHGs, and eight of these firms (89%) also reported Energy.

The Euronext Lisbon's strong disclosure patterns are consistent with last year's findings, where the exchange was found to be among the top five overall in Payroll, Energy, Water and GHG emissions disclosure.

Of the first generation metrics, Payroll is the most widely disclosed. As shown in **Figure 9**, 75% or more of the large firms on each of the top 10 performing exchanges disclosed this information in 2011. This likely reflects the widespread global transition to IFRS, which requires the disclosure of payroll costs.[36] Lost-time injury rate is the most poorly disclosed indicator.

**Figure 9:** Top 10 performing exchanges – Disclosure score

| IDENTIFIERS | | | PERCENTAGE DISCLOSURE RATES | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| EXCHANGE | COUNTRY | NUMBER OF COMPANIES | EMPLOYEE TURNOVER | ENERGY | GHGS | LOST-TIME INJURY RATE | PAYROLL | WASTE | WATER | DISCLOSURE SCORE |
| Euronext Lisbon | Portugal | 9 | 56% | 89% | 100% | 56% | 100% | 67% | 78% | 50 |
| Helsinki Stock Exchange | Finland | 19 | 53% | 74% | 79% | 47% | 89% | 79% | 74% | 49 |
| Athens Stock Exchange | Greece | 9 | 44% | 89% | 89% | 11% | 100% | 56% | 89% | 48 |
| BME Spanish Exchanges | Spain | 37 | 57% | 70% | 70% | 19% | 95% | 62% | 70% | 47 |
| Osaka Securities Exchange | Japan | 14 | 7% | 57% | 79% | 7% | 100% | 64% | 79% | 46 |
| Copenhagen Stock Exchange | Denmark | 20 | 40% | 50% | 70% | 35% | 90% | 45% | 60% | 44 |
| Tokyo Stock Exchange | Japan | 341 | 5% | 62% | 70% | 20% | 95% | 61% | 62% | 43 |
| Euronext Paris | France | 106 | 42% | 54% | 51% | 35% | 84% | 50% | 57% | 42 |
| Korea Exchange | South Korea | 84 | 33% | 67% | 64% | 33% | 82% | 45% | 43% | 41 |
| Oslo Stock Exchange | Norway | 20 | 40% | 55% | 65% | 50% | 75% | 40% | 25% | 40 |

*Source: CK Capital*

34 Complete data tables showing each exchange's disclosure rate on each indicator for each year during the 2007 – 2011 period are provided in Appendix D.

35 Disclosure rates of 75% or higher are highlighted in green, while those 25% or lower are highlighted in red.

36 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.

## Disclosure growth score

The Mexico Stock Exchange had the highest disclosure growth score of all exchanges considered in this year's ranking. The exchange had an average compound annual growth rate of 34% across the seven first generation indicators from 2007 – 2011. This finding demonstrates that the 42 large companies trading in Mexico are rapidly building up their reporting capabilities, particularly around water, energy and employee turnover. This uptick in sustainability reporting may be driven in part by two disclosure instruments recently introduced in Mexico.[37]

As shown in **Figure 10**,[38] six of the top 10 performers are based in emerging markets: Brazil, Chile, China, India, Mexico and Russia. This finding is consistent with the view that emerging markets companies are quickly closing the disclosure gap between themselves and their developed world counterparts.

**Figure 10:** Top 10 performing exchanges – Disclosure growth score

| IDENTIFIERS | | | PERCENTAGE DISCLOSURE RATES | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| EXCHANGE | COUNTRY | NUMBER OF COMPANIES | EMPLOYEE TURNOVER | ENERGY | GHGS | LOST-TIME INJURY RATE | PAYROLL | WASTE | WATER | DISCLOSURE GROWTH SCORE |
| Mexican Stock Exchange | Mexico | 42 | 45% | 45% | 39% | 17% | 0% | 31% | 65% | 20 |
| Singapore Exchange | Singapore | 49 | 63% | 46% | 32% | 1% | -2% | 57% | 42% | 20 |
| Athens Stock Exchange | Greece | 9 | 26% | 36% | 26% | -11% | 18% | 59% | 36% | 19 |
| Santiago Stock Exchange | Chile | 34 | 24% | 21% | 24% | -6% | 65% | 24% | 28% | 19 |
| Taiwan Stock Exchange | China | 64 | 32% | 41% | 27% | 16% | 0% | 40% | 25% | 18 |
| Oslo Stock Exchange | Norway | 20 | 66% | 15% | 20% | 24% | -3% | 40% | 4% | 18 |
| Hong Kong Stock Exchange | China | 198 | 21% | 25% | 7% | 27% | 0% | 47% | 25% | 17 |
| Moscow Exchange | Russia | 33 | 26% | 29% | 49% | 0% | 0% | 16% | 16% | 17 |
| BM&FBOVESPA | Brazil | 83 | 18% | 14% | 23% | 18% | 15% | 25% | 14% | 16 |
| National Stock Exchange | India | 99 | 23% | 11% | 14% | 45% | 0% | 14% | 10% | 16 |

*Source: CK Capital*

37 The Mexican Government's General Law on Climate Change, passed in 2012, sets mandatory emissions measurement and disclosure requirements. In 2011, the Mexican Stock Exchange launched its first sustainable investment index, 'IPC Sustentable.'

38 Disclosure rates of 75% or higher are highlighted in green, while those 25% or lower are highlighted in red.

## Disclosure timeliness score

The speed with which public companies disclose sustainability data to the market is an important and often overlooked component in a sustainability reporting strategy. Timely sustainability data is sought by market participants to ensure relevance, actionability and market fairness.

Most companies that disclose sustainability data continue to do so through stand-alone "sustainability reports" or "corporate social responsibility reports." These publications are in most cases released sometime *after* the publication of corresponding financial information. Most companies that disclose sustainability data do so between three and 12 months *after* their financial year-end.

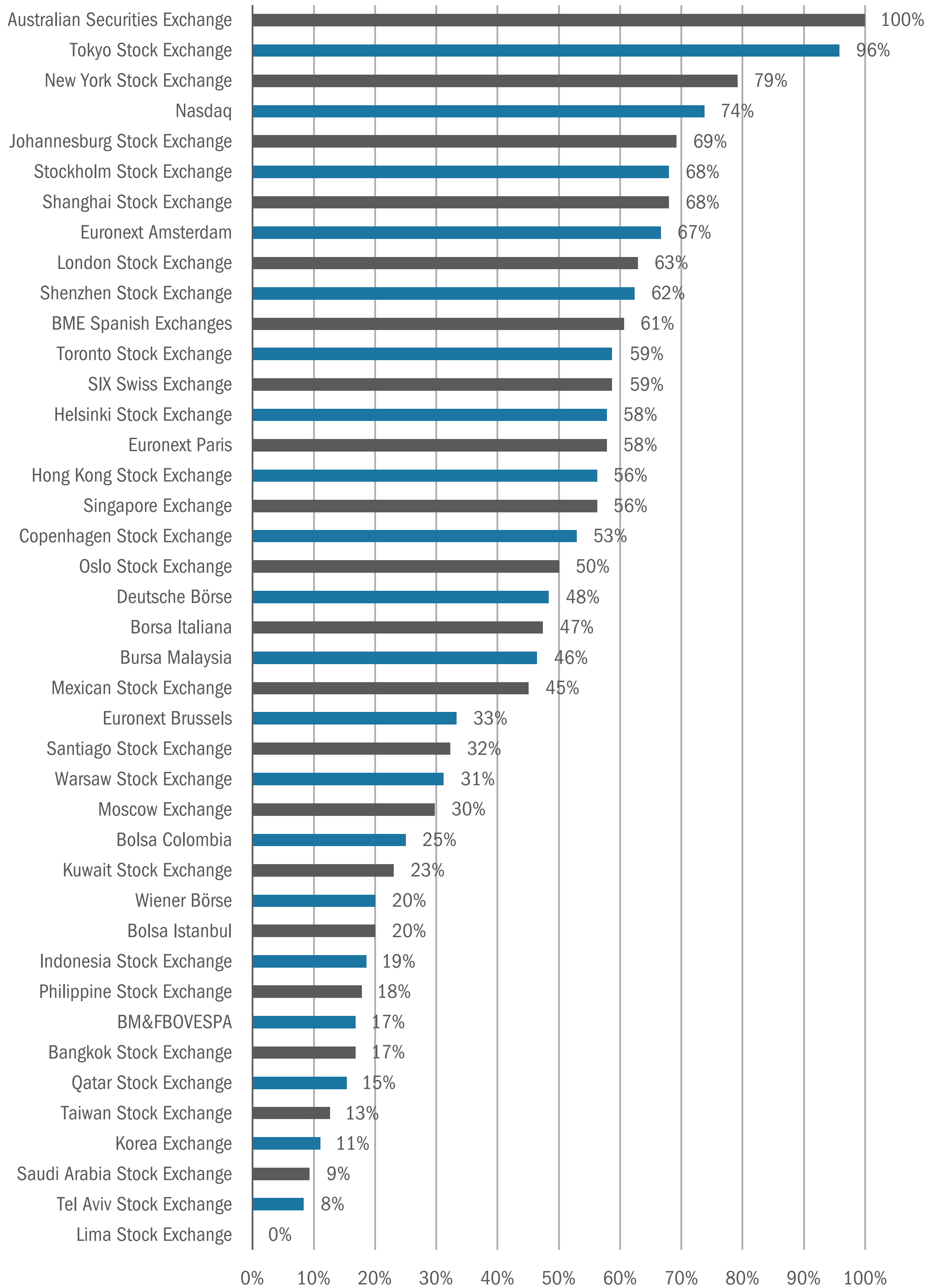
However, more and more companies are shifting away from this model in favour of an integrated approach, where sustainability and financial data are released simultaneously in a single, coordinated report. While a small number of reporters can currently be said to follow the practice of integrated reporting, the number is growing rapidly.[39] The format and content of integrated reporting frameworks are still evolving, but they represent a significant step forward in elevating the importance and usability of sustainability data in investment decision-making.

In the analysis that follows, the relative speed with which companies on the 45 exchanges in our sample are releasing sustainability data to the market is assessed.

Taking our universe of stock exchanges, we considered all companies that had a market capitalization of at least US$2 billion as at July 1, 2013. Next, we screened out companies that had not disclosed any first generation sustainability data over our study period (2007 – 2011). From the remaining companies, we removed those that had a fiscal year-end between January 2012 and September 2012 such that only the companies with a fiscal year-end in Q4 2012 remained. For each of those companies, we looked at the existence of publicly-disclosed sustainability data as at July 1, 2013. For statistical significance, if a given stock exchange had less than 10 companies remaining after applying the above screens, it was not included in the analysis. The results are shown in **Figure 11**.

39 Source: http://www.irmagazine.com/articles/sustainability/19011/integrated-reporting-tricky-combination/

**Figure 11:** Reporting timeliness score




*Source: CK Capital*

Our analysis indicates that the Australian Securities Exchange is home to the world's "quickest" sustainability reporters. All the large companies trading on the Australian Securities Exchange with a Q4 2012 year-end had disclosed sustainability data by July 1, 2013. This is followed by the Tokyo Stock Exchange (96%), the New York Stock Exchange (79%), the Nasdaq (74%) and the Johannesburg Stock Exchange (69%).

The Australian Securities Exchange placed 2nd on this measure out of 35 exchanges surveyed in last year's study, which speaks to a permanently quickened reporting cycle in the Australian market relative to other countries.[40]

It is worth highlighting the case of the Shanghai Stock Exchange and the Shenzhen Stock Exchange. Our analysis reveals a notable progression in terms of the speed with which companies listed on these two exchanges are coming to market with sustainability data after their fiscal year-end. Fully 68% of the large companies trading on the Shanghai Stock Exchange with a Q4 2012 year-end had disclosed sustainability data as at July 1, 2013, up from 24% last year. The corresponding figures for the Shenzhen Stock Exchange are 62% this year and 24% last year.

Corporate sustainability reporting has been the subject of mounting attention by the Chinese government in recent years, mostly in the wake of public outcry from excessive levels of air and water pollution. Another possible cause for the rapid improvement in reporting timeliness is the rising presence of Chinese companies on the international business landscape, which has increased the degree to which these firms are being scrutinized by stakeholder groups.

However, remarkable improvements in disclosure timeliness have not been met with comparable improvement in disclosure breadth: on average, large companies trading on the Shanghai and Shenzhen stock exchanges disclosed just one out of the seven first generation sustainability indicators in 2011.

Companies trading on the Lima Stock Exchange and Tel Aviv Stock Exchange are among the slowest to report sustainability data to the market. For example, only 8% of the large companies trading on the Tel Aviv stock exchange with a Q4 2012 year-end had disclosed sustainability data as at July 1st, 2013. In the case of the Lima stock exchange, none of the large companies had disclosed any sustainability data by July 1, 2013.

40 Some of this out-performance may reflect the predominance of a June fiscal year-end in the Australian market.

# Break-out discussion:

## a sub-ranking of the world's 10 largest exchanges

Given their greater resources and institutional prominence, the world's largest stock exchanges are arguably in the best position to drive improvements in corporate sustainability disclosure. To examine how they stack up against each other on this front, we present a sub-ranking of the world's 10 largest exchanges, by number of large company listings, below.[41]

**Figure 12:** Ranking of large exchanges

| RANK | STOCK EXCHANGE | COUNTRY | ECONOMY | NUMBER OF LARGE COMPANIES | DISCLOSURE SCORE (MAX 50) | GROWTH SCORE (MAX 20) | TIMELINESS SCORE (MAX 30) | OVERALL SCORE (MAX 100) |
|---|---|---|---|---|---|---|---|---|
| 1 | Tokyo Stock Exchange | Japan | Developed | 341 | 50 | 9 | 30 | 89 |
| 2 | Euronext Paris | France | Developed | 106 | 44 | 13 | 7 | 64 |
| 3 | London Stock Exchange | United Kingdom | Developed | 185 | 39 | 2 | 17 | 58 |
| 4 | Shanghai Stock Exchange | China | Emerging | 148 | 17 | 16 | 20 | 52 |
| 5 | Hong Kong Stock Exchange | China | Emerging | 198 | 28 | 20 | 3 | 51 |
| 6 | National Stock Exchange | India | Emerging | 99 | 33 | 18 | 0 | 51 |
| 7 | Toronto Stock Exchange | Canada | Developed | 140 | 22 | 11 | 10 | 43 |
| 8 | New York Stock Exchange | United States | Developed | 921 | 11 | 4 | 27 | 42 |
| 9 | Nasdaq | United States | Developed | 323 | 0 | 7 | 23 | 30 |
| 10 | Shenzhen Stock Exchange | China | Emerging | 105 | 6 | 0 | 13 | 19 |

*Source: CK Capital*

As shown in **Figure 12**, the Tokyo Stock Exchange ranks 1st among the world's large exchanges, with an overall score of 89. It achieved both a perfect disclosure score and reporting timeliness score, indicating that listed companies are both comprehensive and timely in their sustainability data disclosures as compared to peers on other large exchanges

The top five large exchanges are based in either Europe or Asia, whereas three of the bottom five exchanges are based in North America (the New York Stock Exchange and Nasdaq in the United States, and the Toronto Stock Exchange in Canada). It is unclear precisely why the three large North American exchanges trail their large exchange peers in terms of overall sustainability disclosure practices, although the relative dearth of substantive disclosure policies likely plays a role.[42]

41 The 10 largest exchanges—based on the total number of large listings—from our starting universe of 45 exchanges were considered in this sub-ranking. The sub-ranking percent ranks each large exchange against its large peers.

42 From our inventory of 167 disclosure policies, four were implemented in Canada and three in the United States.

# **Part II:**
# Policy Analysis

In this section, we analyze the relationship between disclosure policy and disclosure performance. We catalogue disclosure polices in each of the 40 countries represented in the stock exchange ranking from Part I, and determine which policy characteristics are correlated with sustainability disclosure excellence (as defined in the stock exchange ranking).

The unit of analysis for this section of the report is a policy instrument, with policies grouped by country. This set-up recognizes that sustainability disclosure policies can effectively be implemented by four sets of actors within a given country: i) stock exchanges; ii) securities regulators; iii) specific government departments; and iv) industry/professional associations. All of these organizations can influence corporate sustainability disclosure behaviour by issuing guidance or regulation for listed companies within their respective jurisdictional power.

We concentrate our analysis on policies that are designed to improve the disclosure of the seven first generation sustainability indicators. As mentioned earlier, policies explicitly designed to enhance corporate reporting of other sustainability metrics are excluded.[43]

The complete policy inventory, which consists of 167 specific policy instruments, can be found in **Appendix C**.

## Policy trends

As shown in **Figure 13**, legislation imposing sustainability disclosure obligations began to emerge in the 1970s and early 1980s, with the United States' *Clean Air Act (1970)* and the Bursa Malaysia's *Environmental Quality Act (1974)* among the earliest examples.

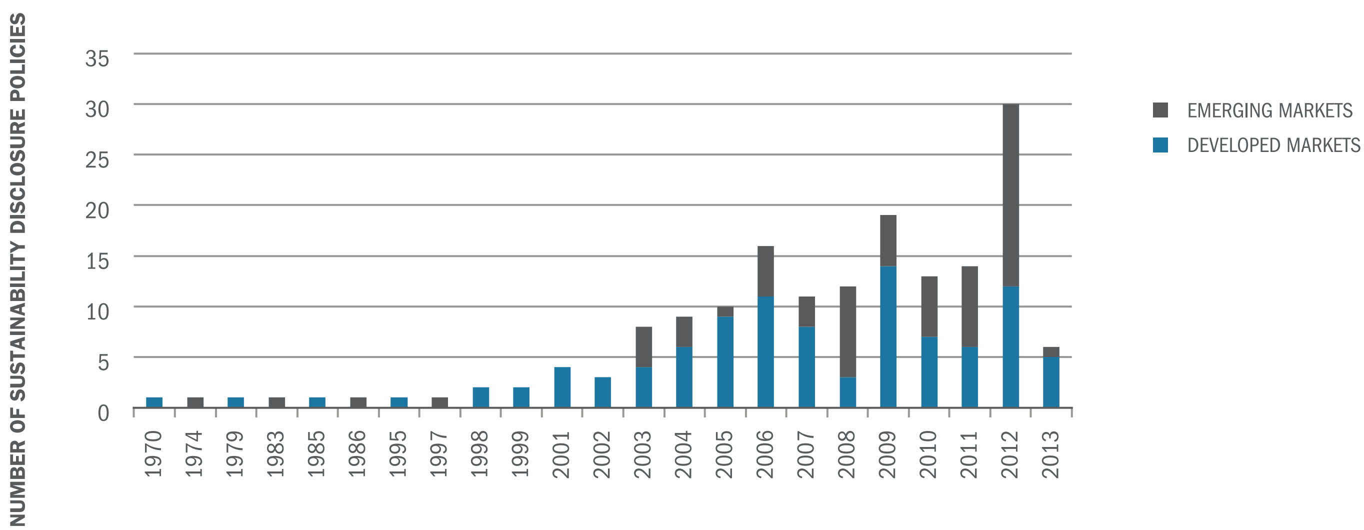
The number of disclosure policies increased significantly in the early and mid-2000s, reaching an apex of 30 policies in 2012.

In total, 100 of the 167 policies (60%) were enacted in developed countries, with the remainder (67 of 167, or 40%) implemented in emerging market countries.[44] In recent years, the distribution between quantitative disclosure policies has been generally evenly split between authorities in developed and emerging markets.

43 For instance, the effect of policies designed to improve the disclosure of corporate governance factors, such as France's Corporate Governance Code of Listed Corporations (2010), is not captured in our analysis.

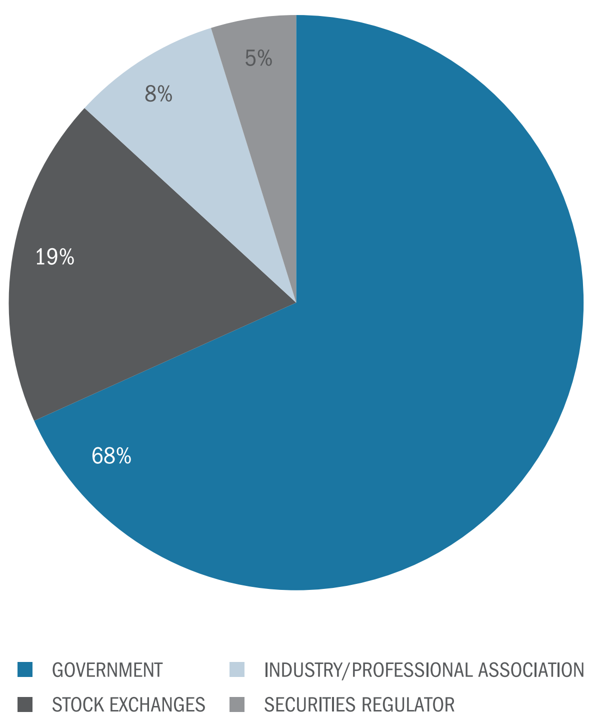
44 Country classifications taken from http://www.imf.org/external/pubs/ft/weo/2012/01/pdf/tables.pdf

**Figure 13:** Sustainability disclosure policies by year and country classification




*Source: CK Capital*

**Figure 14:** Breakdown of sustainability disclosure policies by authority

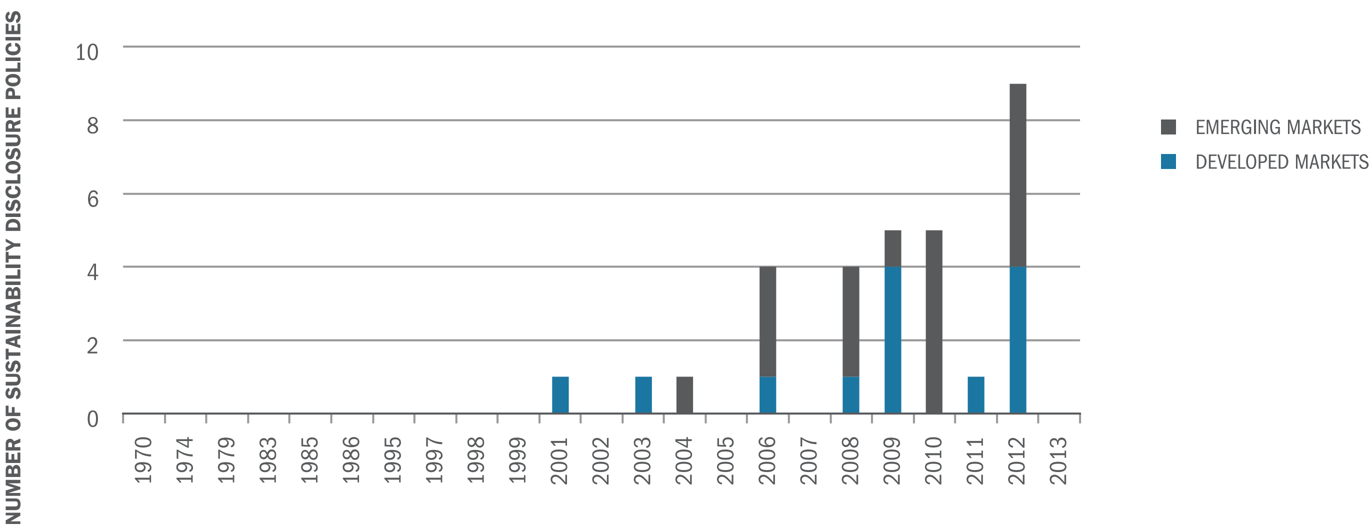



*Source: CK Capital*

**Figure 14** shows that governments have historically been the primary implementing authority, responsible for 114 of the 167 policies in our inventory (68%). Securities regulators are the distinct minority player, implementing only eight sustainability disclosure policies since the early 1970s, or 5% of all policies reviewed in our study.

Stock exchanges passed a total of 31 disclosure policies in our inventory, accounting for 19% of the total, but as shown in **Figure 15** stock exchanges are a new entrant in the sustainability disclosure field. All 31 stock exchange-led policies were implemented after 2000, and in 2012 a total of nine stock exchange-led policies took effect. While stock exchanges have hitherto played a relatively minor role on the policy front, they have been quite active in recent years.

**Figure 15:** Stock exchange-led sustainability disclosure policies by year and country classification




*Source: CK Capital*

# Background

Implementing effective sustainability disclosure policies is not an easy task for policymakers. Sustainability data often falls into a "grey zone" insofar as financial materiality is concerned. This means that many companies can legally circumvent well-intentioned disclosure policies—even, in some cases, mandatory disclosure policies put forward by securities regulators—by invoking the materiality principle.[45] In other instances, the lack of proper enforcement for non-compliance often leads to less than optimal results.

Stock exchanges face an additional burden. Unlike governments and securities regulators, they increasingly operate as for-profit companies, and are sometimes owned by listed entities. Many stock exchanges have expressed the legitimate concern that implementing sustainability reporting requirements into their listed standards could discourage future listings.

Perhaps most importantly, a complex, almost overwhelming set of tools is at the policymaker's disposal. Permutations include voluntary, sector-specific disclosure policies, mandatory "all inclusive" policies, the increasingly referenced "comply or explain" model, and policies that use enforcement mechanisms vs. those that do not. While good work is being done to help policymakers identify best practices,[46] there is a dearth of quantitative evidence to help the global policymakers in this regard.

Our analytical approach is inspired from available policy research and academic literature that discusses, among other things, the merits of policy type, clarity and scope in effectively achieving the desired policy objectives—in our case, encouraging corporate sustainability disclosure.

In 2000, the Organisation for Economic Co-operation and Development (OECD) issued a report entitled, "Reducing the risk of policy failure: challenges for regulatory compliance".[47] The paper presents the results of research conducted to inform regulatory reform among OECD countries, more specifically to achieve regulatory effectiveness, defined as "how well

45 According to a recent study, almost 75% of U.S. publicly traded companies are ignoring a three-year-old Securities and Exchange Commission requirement that they inform investors of the risks that climate change may pose to their bottom lines. For more information, see http://insideclimatenews.org/news/20130919/most-us-companies-ignoring-sec-rule-disclose-climate-risks

46 For instance, see http://unctad.org/meetings/en/SessionalDocuments/ciiisard67_en.pdf

47 Organisation for Economic Co-operation and Development. "Reducing the risk of policy failure: challenges for regulatory compliance," 2000. Retrieved from http://www.oecd.org/gov/regulatory-policy/46466287.pdf on September 27, 2013.

regulatory systems achieve their policy objectives." The findings are based primarily on a growing body of anecdotes and studies from OECD countries. The report suggests the following three factors as the main reasons for non-compliance to a given policy:

**a.** the degree to which the target group knows of and comprehends the rules;

**b.** the degree to which the target group is willing to comply—either because of economic incentives, positive attitudes arising from a sense of good citizenship, acceptance of policy goals, or pressure from enforcement activities; and

**c.** the degree to which the target group is able to comply with the rules.

The extent to which the target group knows of and comprehends the rules of the policy can directly be influenced by the language of the policy; the more explicative or prescriptive the rules of the policy, the clearer they are and the easier it should be for the target group to comply with. Weil, Fung and Graham (2006) argue that disclosure policies can be strengthened by selecting accurate metrics to be reported by target groups. [48]

As pointed out in the OECD report, there are several factors that may affect the target group's willingness to comply with a given policy's requirements. However, one major determinant is the extent of enforcement activities. In most cases, mandatory policies include provisions that deal with enforcement mechanisms. This research provides empirical support for our finding that mandatory, prescriptive and broad sustainability disclosure policies are most strongly correlated with sustainability disclosure excellence.

# Results

While based on an admittedly parsimonious framework, our analysis finds that there are three common characteristics to effective sustainability disclosure policies. The takeaway for policymakers is that disclosure policies should be mandatory (as opposed to voluntary), prescriptive (as opposed to principles-based) and broad (as opposed to narrow), in terms of the number of sustainability indicators and types of companies targeted. We refer to policies that share these three dimensions as super policies.

**Figure 16** defines the three dimensions that form CK Capital's Policy Analysis Tool.

**Figure 16:** CK Capital's policy analysis tool

| DIMENSION | OPTIONS | DESCRIPTION | RATIONALE |
|---|---|---|---|
| POLICY TYPE | MANDATORY | Policies that impose a requirement to comply; i.e., to disclose the information specified in the policy. | Mandatory policies are more likely to generate higher disclosure since adherence to the provisions is motivated by the desire to avoid the negative consequences of enforcement. |
| | VOLUNTARY | Compliance with the disclosure requirement is optional. | |
| POLICY CLARITY | PRESCRIPTIVE | The policy clearly specifies the categories or specific items to be disclosed. | It is expected that clearer policies may encourage adoption and may facilitate implementation, hence leading to higher take-up and disclosure by affected entities. |
| | PRINCIPLES | Policies that only speak of sustainability/CSR reporting as a general requirement. | |
| POLICY SCOPE | BROAD | The policy affects the disclosure of more than one first generation sustainability indicator across multiple sectors. | Policies that either affect a larger number of indicators or are applicable to multiple sectors are more likely to lead to higher disclosure rates as they help establish sustainability reporting as a standard corporate practice. |
| | NARROW | The policy only concerns a single first generation sustainability indicator, or a single industrial sector. | |

*Source: CK Capital*

48 Weil, Fung and Graham. "The effectiveness of regulatory policies. Journal of Policy Analysis and Management," 2006, Vol. 25, No. 1, 155 – 181.

## Break-out discussion:

### what does a super policy look like?

As mentioned above, super policies in the field of corporate sustainability disclosure are policies that are mandatory in terms of their application, prescriptive in terms of their guidance and broad in terms of their scope. In **Figure 17** we call out several leading examples of super policies around the world.

**Figure 17:** Examples of super policies

| POLICY NAME | COUNTRY | YEAR | AUTHORITY | AFFECTED STOCK EXCHANGES | DESCRIPTION |
|---|---|---|---|---|---|
| Grenelle II | France | 2010 | Government | Euronext Paris | Grenelle II, which was initiated in 2010 but passed in 2012, requires sustainability reporting for companies with more than 500 employees or more than 100 million in either revenue or assets. For qualifying firms, it sets disclosure obligations for 42 social and environmental fields. The legislation also requires a third-party to verify the extra-financial information included in the report. Grenelle II ultimately sets the stage for integrated reporting in France. |
| Business Responsibility Reports | India | 2012 | Securities regulator | Bombay Stock Exchange, National Stock Exchange | Following up on the Indian Government's "National Voluntary Guidelines" published in 2011, the Securities and Exchange Board of India mandated the inclusion of Business Responsibility Reports in the annual reports of India's 100 largest listed entities based on market capitalization at both the National Stock Exchange and Bombay Stock Exchange. Business Responsibility Reports include a variety of specific environmental and social indicators, including energy and water use, as well as health and safety data, and metrics around workforce diversity. |
| Energy Conservation Act | Singapore | 2012 | Government | Singapore Exchange | In 2012, Singapore passed the Energy Conservation Act, which requires qualifying companies to report on energy consumption, GHG emissions, energy management strategies and conservation plans. The Act details a variety of indicators that must be disclosed, thus providing clarity for affected reporting entities. |

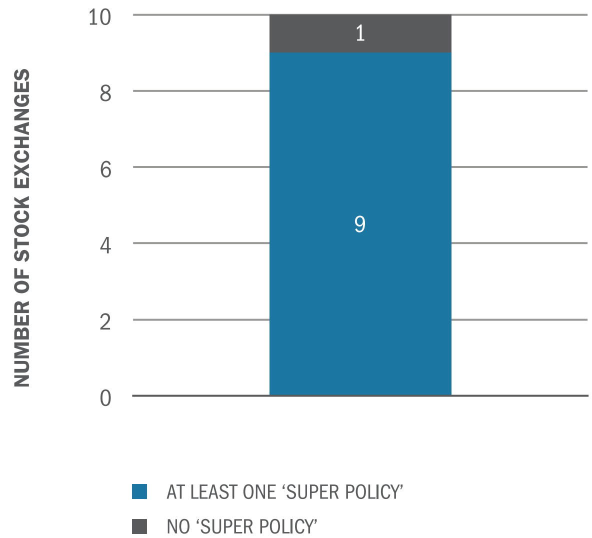
*Source: CK Capital*

**Figure 18** takes the top 10 exchanges from our stock exchange ranking and breaks them into two categories: those located in countries with at least one super policy and those based in countries with no super policies. Nine of the top 10 exchanges are based in countries with at least one super policy in force. [49]

**Figure 19** performs the same segmentation on the bottom 10 exchanges from our stock exchange ranking.[50] The data show that nine of the 10 bottom performing stock exchanges are based in countries *with no super policies*. The single exception is the Shenzhen Stock Exchange, which is based in Shenzhen, China. A single super policy was found to exist in the Chinese market,[51] although the impact of this policy may be offset by China's "implementation gap".[52]

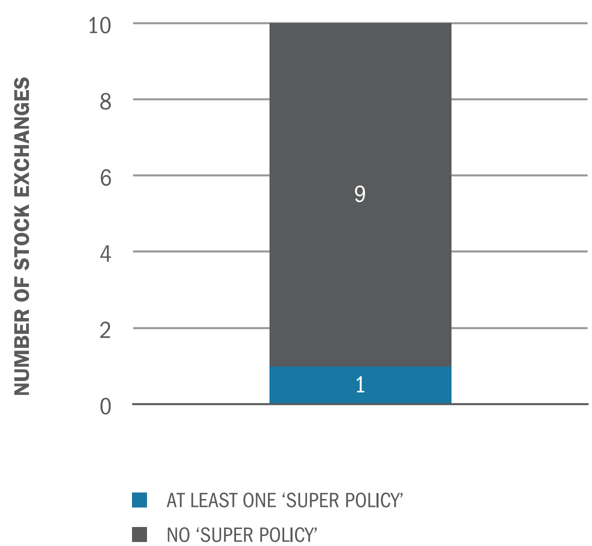
Taken together, this analysis suggests that sustainability disclosure excellence is associated |with so-called super policies—disclosure policies that are mandatory, prescriptive and broad. Our data also demonstrate that comparatively poor disclosure practices are associated with a policy environment characterized by the absence of super policies.

**Figure 18:** Top 10 exchanges by overall score, by home country policy environment




*Source: CK Capital*

**Figure 19:** Bottom 10 exchanges by overall score, by home country policy environment




*Source: CK Capital*

49 The exception is the Athens Stock Exchange (Greece). Certain economic and socio-cultural factors may explain the performance of large Greek companies in the absence of a super policy, including possible informal conditions encouraged by European regulators as part of their bailout.

50 The bottom 10 exchanges were the Nasdaq, the Indonesia Stock Exchange, the Shenzhen Stock Exchange, the Philippine Stock Exchange, the Bangkok Stock Exchange, the Kuwait Stock Exchange, the Saudi Arabia Stock Exchange, the Lima Stock Exchange, the Qatar Stock Exchange and, in 45th position, the Tel Aviv Stock Exchange.

51 The policy in question is the set of Social Responsibility Guidelines published by the Shenzhen Stock Exchange in 2006.

52 For a discussion of China's implementation gap, see http://www.tandfonline.com/doi/abs/10.1080/1523908X.2012.752186#.UmFX3PnkuYg

# Conclusion

In this report we investigated the extent to which the world's large companies are disclosing the seven "first generation" sustainability indicators: employee turnover, energy, greenhouse gases (GHGs), lost-time injury rate, payroll, waste and water. Analysis was aggregated at the level of individual stock exchanges, and included examination of disclosure rates (2011), growth in disclosure rates (2007 – 2011) and disclosure timeliness.

In order to review the relationship between corporate sustainability disclosure and disclosure policy, an inventory of 167 specific instruments was assembled, with each instrument analyzed along three dimensions: policy type, policy clarity and policy scope.

The report's main findings are summarized below:

## Overall

- The **BME Spanish Exchanges**, based in Spain, had the highest overall score in this year's ranking, moving up from 4th position in last year's assessment.[53] The strong showing of the BME Spanish Exchanges reflects the comparatively advanced reporting practices of large Spanish listings, which may be aided by legislation recently introduced by the Government of Spain.[54]
- Stock exchanges based in emerging markets are on track to **overtake those based in developed markets by 2015**, in terms of the proportion of their large listings that disclose the seven first generation sustainability indicators. This would constitute a watershed moment in the history of corporate reporting, as the developed world has effectively had a 20-year head start in driving sustainability disclosure.
- Super policies—disclosure policies that are **mandatory, prescriptive** and **broad**—are most strongly correlated with sustainability disclosure excellence.
- After early and rapid gains prior to 2008, global disclosure rates for most of the first generation indicators are **flattening out**, indicating a slowdown in the growth of quantitative sustainability reporting by the world's listed companies.

## Sustainability disclosure trends

- The global **Materials sector**, which consists primarily of mining companies, is the world's most transparent from a first generation sustainability indicator standpoint, while the **Financials sector** is the most opaque.
- Large companies, defined as those with a market cap in excess of US$2 billion, **are nearly 10 times more likely** than small companies to engage in quantitative sustainability reporting.
- Only **3% of the world's large companies** (117 out of 3,972) and **0.04% of the world's small companies** (20 out of 56,710) currently offer their stakeholders complete first generation sustainability reporting.

53 The BME Spanish Exchanges consist of the Madrid Stock Exchange, the Valencia Stock Exchange, the Bilbao Stock Exchange and the Barcelona Stock Exchange.

54 The Spanish Sustainable Economy Law Article 39, which entered into force in 2011, contains reporting obligations for private and public companies as well as guidelines for the inclusion of non-financial information in company financial disclosures.

## Stock exchange ranking

- The **BME Spanish Exchanges** took top spot in this year's ranking, followed by the Helsinki Stock Exchange, the Tokyo Stock Exchange, the Oslo Stock Exchange and the Johannesburg Stock Exchange.
- The Korea Exchange was the **"most improved" exchange**, jumping from the 27th spot in last year's ranking to 16th in this year's study.
- Australia is home to the world's **"quickest" sustainability reporters**. The Australian Securities Exchange placed 2nd on this measure in last year's study, which speaks to a permanently quickened reporting cycle in the Australian market relative to other countries.[55]
- The **Tokyo Stock Exchange** placed 1st overall in a sub-ranking of the world's 10 largest exchanges, followed by the Euronext Paris, the London Stock Exchange, the Shanghai Stock Exchange and the Hong Kong Stock Exchange. The two U.S.-based exchanges, the NYSE and Nasdaq, placed 8th and 9th respectively.

## Sustainability disclosure policies

- Across the 40 countries covered in our study, 60% of the quantitative disclosure policies in place (100 of 167) **were enacted in developed countries**, with the remainder (40%) implemented in emerging markets. In recent years, the distribution between the two has been essentially evenly split.
- **Governments** have historically been the primary implementing authority, responsible for 114 of the 167 policies in our inventory (68%).
- **Securities regulators** are the distinct minority player, implementing only eight sustainability disclosure policies since the early 1970s, or 5% of all policies reviewed in our study.
- The 45 stock exchanges in our sample were **responsible for 31 disclosure policies**, all of which were implemented after 2000.

55 Some of this out-performance may reflect the predominance of a June fiscal year-end in the Australian market.

# Recommendations

Our analysis gives rise to three main recommendations.

First, stock exchanges—**and policymakers of all description**—that are considering implementing a sustainability disclosure policy would be well-advised to structure it as a mandatory, prescriptive and broad instrument. Mandatory policies impose reporting obligations on affected companies, although the degree to which policymakers can (or choose to) impose this characteristic varies. Prescriptive policies are clear and provide details about the expected disclosures. Broad policies—those that cover a wide range of sustainability indicators and offer few carve outs in terms of company size or industry type—are desirable because they offer flexibility and cast a wide reporting net. In order to craft policies that are prescriptive and broad, policymakers can reference sustainability reporting standards developed by transnational standard-setters, such as the Global Reporting Initiative (GRI). This type of policy hybridization—public policymakers using privately developed standards—is increasingly used in the financial and health & safety industries, and offers clear benefits in the sustainability reporting field.

Second, **stock exchanges** have hitherto played a relatively minor role in the development of sustainability disclosure policy, although their potential role is recognized to be hugely significant. By incorporating sustainability disclosure requirements into their listing standards, stock exchanges can create a powerful incentive for companies to measure and publicly disclose sustainability performance data to the market. Many stock exchanges have expressed the legitimate concern that imposing stricter listing requirements could discourage future listings, which runs central to their business model. While this perspective is logically sound, we recommend that stock exchanges invest the necessary human and financial resources to fully explore the perceived negative trade-off between sustainability standards and the listing propensity of public firms. This could take the form of interviews with senior management at both existing and prospective listings. CK Capital uncovered scant evidence to support this perceived negative trade-off, and more research in this area is urgently required.

Third, of all the actors that can influence corporate behaviour through policy, the world's securities regulators have to date been the least prolific, which is perhaps understandable given their historic mandate. But, like stock exchanges, **securities regulators** could theoretically play a significant role by integrating sustainability disclosure into capital markets requirements. We recommend that the **International Organization of Securities Commissions (IOSCO)** set up a roundtable to explore whether (and how) capital markets rules to facilitate corporate sustainability disclosure could be in the long-term interest of its membership.

Additionally, we recommend that the **World Federation of Exchanges (WFE)** build a forum that its members could use to share best practices regarding the integration of sustainability disclosure standards into listing requirements.

# Appendices

## Appendix A

### GRI Indicators

| GRI INDICATOR | DESCRIPTION |
|---|---|
| LA3 | Benefits provided to full-time employees that are not provided to temporary or part-time employees by significant location. |
| EN3, EN4 | Direct and indirect energy consumption by primary energy source. |
| EN16 | Total direct and indirect greenhouse gas emissions by weight. |
| EN8 | Total water withdrawal by source. |
| EN22 | Total weight of waste by type and disposal method. |
| LA2 | Total number and rate of new employee hire and employee turnover by age group, gender and region. |
| LA7 | Rates of injury, occupational diseases, lost days, and absenteeism, and total number of work-related fatalities by region. |

The Global Reporting Initiative produces a comprehensive and freely available sustainability reporting framework. GRI's Guidelines, a core element of its sustainability reporting framework, contain key sustainability indicators which organizations can report against. For more information about the GRI's Guidelines, please visit https://www.globalreporting.org/Pages/default.aspx

# Appendix B

## Methodology

This paper pursues two separate but fundamentally related lines of inquiry. The first section is concerned with measuring corporate sustainability disclosure on the world's stock exchanges. In the second section, an inventory of specific policy instruments is assembled, with a view to determining which policies are correlated with superior disclosure practices.

In this chapter we provide a detailed overview of the methodology used to guide our analysis. Methodological transparency is an essential quality in efforts to measure or rank actors based on a concept as complex—and potentially nebulous—as corporate sustainability disclosure.

### *Part I: Measuring Sustainability Disclosure on the World's Stock Exchanges*

The methodology in this year's paper is effectively a reproduction of the approach we used in last year's study, which was released at the Rio+20 Conference in June 2012.[56]

**Unit of analysis:** The unit of analysis consists of an individual stock exchange.[57]

**Analytical scope:** The analytical scope is described along five dimensions:

- *Companies:* Analysis is constrained to include only 'large' publicly traded (e.g., listed) companies.[58] A total of 3,972 companies were considered in the study.
- *Stock exchanges:* Analysis is constrained to include only large exchanges.[59] A total of 45 exchanges were considered in the study.
- *Sustainability indicators:* Analysis is constrained to include only the seven "first generation" sustainability indicators, as shown below.

**The Seven First Generation Sustainability Indicators**

| INDICATOR | BLOOMBERG ESG FIELD |
|---|---|
| Employee turnover | EMPLOYEE_TURNOVER_PCT |
| Energy | ENERGY_CONSUMPTION |
| GHGs | TOTAL_GHG_EMISSIONS and TOTAL_CO2_EMISSIONS |
| Lost-time injury rate | LOST_TIME_INCIDENT_RATE |
| Payroll | IS_PERSONNEL_EXP |
| Waste | TOTAL_WASTE |
| Water | TOTAL_WATER_USE |

*Source: CK Capital, Bloomberg*

- *Study period:* The project uses a performance year study period of 2007 – 2011.[60]
- *Geography:* No constraints employed; the project's analytical boundary consists of all large publicly traded companies, irrespective of the location of their headquarters or the exchange on which their shares trade.
- *Data source:* The paper's analysis was based on data pulled from Bloomberg's ESG database on July 2, 2013.[61]

**Ranking model:** As in our 2012 report, stock exchanges are ranked on three measures: i) the proportion of their large listings that disclosed each first generation indicator in performance year 2011 (50% weight); ii) the growth rate in the proportion of their large listings that disclosed each indicator over the 2007 – 2011 period (20% weight); and iii) the timeliness with which large companies disclose their sustainability data (30% weight).[62]

56 Last year's report, entitled "Trends in Sustainability Disclosure: Benchmarking the World's Composite Stock Exchanges," can be downloaded at this link: http://corporateknightscapital.com/publications/

57 This represents a slight but significant change from our 2012 report, where the unit of analysis was a composite stock exchange.

58 Defined as companies that had a market capitalization in excess of US$2 billion as of December 31, 2011.

59 The universe of stock exchanges comprised in our study is determined by considering all stock exchanges that had at least 10 actively traded large companies as of December 31 in any three of the five years covered by this study (i.e., 2007 – 2011). In our 2012 report, the criterion was at least 10 actively traded large companies as of December 31, 2010.

60 Performance year refers to the year to which a company's sustainability data corresponds. For instance, most companies disclosed their 2011 performance year sustainability data at varying points in calendar year 2012.

61 The data pull consisted of the following steps: for each company in the project's analytical boundary (n=3,972), disclosure of the first generation indicators (n=7) was pulled for each year during the 2007 – 2011 window. Companies were then aggregated into analytical buckets based on their primary stock exchange.

62 This refers to the gap between the end of a company's performance year and the date on which the data are publicly disclosed.

***Part II: Policy Inventory***

In the Policy Inventory section we compile an exhaustive list of all qualifying policy instruments and analyze the extent to which they are correlated with the stock exchange ranking from **Part I**.

**Unit of analysis:** Policies

**Analytical scope:** The analytical scope is defined along three dimensions:

- *Countries:* Policies in 40 countries were analyzed. The 45 stock exchanges from Part I are located in these 40 countries.

- *Policies:* Recognizing that corporate sustainability disclosure can be driven by policies enacted by many different regulatory actors, a holistic definition of policy instrument is used. Specifically, policies enacted by i) stock exchanges; ii) securities regulators; iii) government departments; and iv) industry/professional associations are analyzed. A total of 167 policy instruments were considered in the study.

- *Study period:* Analysis is constrained to include only those policies that could have reasonably influenced corporate sustainability disclosure from performance years 2007 – 2011.

- *Data source:* A variety of data sources were consulted in order to build the policy inventory. These include: Carrots and Sticks III,[63] the ISAR SSE Guidance Document,[64] the SSE policy database,65 the Corporate Social Responsibility: National Public Policies in the European Union report 2010,66 the European Union's Directives transposition database and the Hauser Center for Non-Profit Organizations' Global CSR Disclosure Requirements.

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63 The report can be found at https://www.globalreporting.org/resourcelibrary/Carrots-and-Sticks.pdf

64 Available at http://unctad.org/meetings/en/SessionalDocuments/ciiisard67_en.pdf

65 The database can be found at http://www.sseinitiative.org/sustainability-reporting-policies/

66 Available at http://ec.europa.eu/social/main.jsp?langId=en&catId=331&newsId=1012&furtherNews=yes

**Policy assessment model:** All qualifying policy instruments (n=167) were assessed along three dimensions, as shown below.

### Policy assessment model

| DIMENSION | OPTIONS | DESCRIPTION | RATIONALE |
|---|---|---|---|
| POLICY TYPE | MANDATORY | Policies that impose a requirement to comply; i.e., to disclose the information specified in the policy. | Mandatory policies are more likely to generate higher disclosure since adherence to the provisions is motivated by the desire to avoid the negative consequences of enforcement. |
| | VOLUNTARY | Compliance with the disclosure requirement is optional. | |
| POLICY CLARITY | PRESCRIPTIVE | The policy clearly specifies the categories or specific items to be disclosed. | It is expected that clearer policies may encourage adoption and may facilitate implementation, hence leading to higher take-up and disclosure by affected entities. |
| | PRINCIPLES | Policies that only speak of sustainability/CSR reporting as a general requirement. | |
| POLICY SCOPE | BROAD | The policy affects the disclosure of more than one first generation sustainability indicator across multiple sectors. | Policies that either affect a larger number of indicators or are applicable to multiple sectors are more likely to lead to higher disclosure rates as they help establish sustainability reporting as a standard corporate practice. |
| | NARROW | The policy only concerns a single first generation sustainability indicator, or a single industrial sector. | |

*Source: CK Capital*

## Assumptions

The existence of at least one policy that is mandatory in nature, that is prescriptive and that has broad applicability is assumed to create positive spill-over effects where affected companies are then encouraged to adhere to other non-voluntary, narrow or principles-based policies that are in existence in their given jurisdictions.

While we examine disclosure performance by large companies over the 2007 – 2011 period, disclosure policies that came into force after 2011 are also included in our analysis. It is assumed that such policies have influenced corporate sustainability disclosure in the years prior to enactment as a result of the consultation process between the implementing authority and the corporations.

# Appendix C

## Policy Inventory

| COUNTRY | STOCK EXCHANGE(S) | DEVELOPED VS EMERGING | POLICY NAME | EFFECTIVE DATE | AUTHORITY | POLICY TYPE | POLICY CLARITY | POLICY SCOPE |
|---|---|---|---|---|---|---|---|---|
| Australia | Australian Securities Exchange | Developed | Australian Minerals Industry Framework for Sustainable Development | 2005 | Industry/ professional association | Voluntary | Prescriptive | Broad |
| | | | Corporations Act 2001 – section 299(1)(f) | 2001 | Government | Mandatory | Prescriptive | Broad |
| | | | Corporations Act 2001 – Section 299A | 2004 | Government | Mandatory | Principles | Broad |
| | | | Energy Efficiency Opportunities Act | 2006 | Government | Mandatory | Principles | Narrow |
| | | | National Environment Protection Measure | 1998 | Government | Mandatory | Prescriptive | Narrow |
| | | | National Greenhouse and Energy Reporting | 2007 | Government | Mandatory | Prescriptive | Broad |
| Austria | Wiener Börse | Developed | Amendment to the Accounting Act | 2004 | Government | Voluntary | Principles | Broad |
| | | | Guidelines: Reporting about Sustainability | 2003 | Government | Voluntary | Principles | Broad |
| | | | Success and Social Responsibility – A Guide to Future-Proofing Your Business | 2009 | Industry/ professional association | Voluntary | Prescriptive | Broad |
| Belgium | Euronext Brussels | Developed | The Social Balance Sheet of 2003 | 2003 | Government | Mandatory | Prescriptive | Broad |
| Brazil | BM&FBOVESPA | Emerging | Brazilian Accounting Norm T 15 | 2004 | Government | Voluntary | Prescriptive | Broad |
| | | | Ibase Model | 1997 | Industry/ professional association | Voluntary | Prescriptive | Broad |
| | | | Law No. 11638 | 2007 | Government | Mandatory | Prescriptive | Narrow |
| | | | Pronouncement No. 13 | 2012 | Government | Voluntary | Prescriptive | Broad |
| | | | Recommendation of report or explain | 2012 | Stock exchange | Voluntary | Prescriptive | Broad |
| | | | Resolution No. 254 | 2012 | Government | Mandatory | Prescriptive | Narrow |
| | | | Solid Waste National Policy | 2010 | Government | Mandatory | Prescriptive | Narrow |
| | | | The ANEEL Requirements for Annual Sustainability Report | 2006 | Securities regulator | Mandatory | Principles | Broad |

## Policy Inventory *(cont'd)*

| COUNTRY | STOCK EXCHANGE(S) | DEVELOPED VS EMERGING | POLICY NAME | EFFECTIVE DATE | AUTHORITY | POLICY TYPE | POLICY CLARITY | POLICY SCOPE |
|---|---|---|---|---|---|---|---|---|
| Canada | Toronto Stock Exchange | Developed | Building the Canadian Advantage: A Corporate Social Responsibility (CSR) Strategy for the Canadian International Extractive Sector | 2009 | Government | Voluntary | Prescriptive | Broad |
| | | | CSA Staff Notice: 51-333 – Environmental Reporting Guidance (wrt National Instrument 51-102 Continuous Disclosure Obligations) | 2010 | Securities regulator | Voluntary | Prescriptive | Broad |
| | | | Public Accountability Statements | 2003 | Government | Mandatory | Prescriptive | Broad |
| | | | The Greenhouse Gas Emissions Reporting Program | 1999 | Government | Mandatory | Prescriptive | Narrow |
| Chile | Santiago Stock Exchange | Emerging | Guide for Preparing Sustainability Reports | 2003 | Industry/ professional association | Voluntary | Prescriptive | Broad |
| | | | The economic dimension – Embedding social sustainability reports: towards basic quarterly financial statements | 2006 | Government | Voluntary | Prescriptive | Broad |

## Policy Inventory *(cont'd)*

| COUNTRY | STOCK EXCHANGE(S) | DEVELOPED VS EMERGING | POLICY NAME | EFFECTIVE DATE | AUTHORITY | POLICY TYPE | POLICY CLARITY | POLICY SCOPE |
|---|---|---|---|---|---|---|---|---|
| China | Hong Kong Stock Exchange, Shanghai Stock Exchange, Shenzhen Stock Exchange, Taiwan Stock Exchange | Emerging | CASS-CSR reporting guideline (2.0) | 2012 | Government | Voluntary | Principles | Broad |
| | | | China Sustainability Reporting Guidelines for Apparel and Textile Enterprises | 2008 | Industry/ professional association | Voluntary | Prescriptive | Broad |
| | | | Corporate Social Responsibility Best Practice Principles (the CSR Principles) | 2010 | Stock exchange | Mandatory | Prescriptive | Broad |
| | | | CSR Notice & Environmental Disclosure Guidelines | 2008 | Stock exchange | Voluntary | Prescriptive | Broad |
| | | | Environmental Information Disclosure Act | 2008 | Government | Voluntary | Prescriptive | Broad |
| | | | Environmental, Social and Governance Reporting Guide | 2012 | Stock exchange | Voluntary | Prescriptive | Broad |
| | | | Green Securities Law | 2008 | Government | Mandatory | Principles | Broad |
| | | | Guide on Social Responsibility for Chinese International Contractors | 2012 | Government | Voluntary | Principles | Broad |
| | | | Guidelines on Corporate Social Responsibility for Banking Financial Institutions | 2009 | Industry/ professional association | Voluntary | Prescriptive | Broad |
| | | | Guidelines on Social Responsibility for Industrial Corporations and Federations | 2011 | Industry/ professional association | Voluntary | Prescriptive | Broad |
| | | | Guidelines to the State-owned Enterprises | 2008 | Government | Voluntary | Principles | Broad |
| | | | Indicator System for the China CSR Monitoring and Evaluation Platform | 2011 | Government | Voluntary | Prescriptive | Broad |
| | | | Shanghai Municipal Local Standards on Corporate Social Responsibility | 2008 | Government | Voluntary | Principles | Broad |
| | | | Social Responsibility Guidelines | 2006 | Stock exchange | Mandatory | Prescriptive | Broad |
| | | | TWSE corporate governance and corporate social responsibility Index | 2012 | Stock exchange | Voluntary | Prescriptive | Broad |

## Policy Inventory *(cont'd)*

| COUNTRY | STOCK EXCHANGE(S) | DEVELOPED VS EMERGING | POLICY NAME | EFFECTIVE DATE | AUTHORITY | POLICY TYPE | POLICY CLARITY | POLICY SCOPE |
|---|---|---|---|---|---|---|---|---|
| Colombia | Bolsa Colombia | Emerging | National Program for Voluntary Report on GHG Emissions | 2012 | Government | Voluntary | Prescriptive | Narrow |
| Denmark | Copenhagen Stock Exchange | Developed | Action Plan for CSR | 2012 | Government | Voluntary | Prescriptive | Broad |
| | | | Amendment to the Danish Financial Statements Act | 2009 | Government | Mandatory | Prescriptive | Broad |
| | | | Danish Financial Statements Act | 2001 | Government | Mandatory | Prescriptive | Narrow |
| | | | The Green Accounts Act | 1995 | Government | Mandatory | Prescriptive | Broad |
| Finland | Helsinki Stock Exchange | Developed | Act No. 1304 | 2004 | Government | Voluntary | Principles | Narrow |
| | | | General guidelines for recording, accounting and disclosing of environmental issues | 2006 | Industry/ professional association | Voluntary | Prescriptive | Broad |
| | | | Government Resolution on State Ownership Policy | 2011 | Government | Mandatory | Prescriptive | Broad |
| | | | The Finnish Accounting Act | 2004 | Government | Mandatory | Principles | Narrow |
| France | Euronext Paris | Developed | Bilan Carbone | 2004 | Government | Voluntary | Prescriptive | Narrow |
| | | | Bilan d'Emissions de GES | 2011 | Government | Mandatory | Prescriptive | Narrow |
| | | | Grenelle Act II | 2012 | Government | Mandatory | Prescriptive | Broad |
| | | | National Sustainable Development Strategy 2010 – 2013 | 2010 | Government | Voluntary | Prescriptive | Broad |
| | | | New Economic Regulations Act | 2001 | Government | Mandatory | Prescriptive | Broad |
| Germany | Deutsche Börse | Developed | Action Plan for CSR | 2010 | Government | Voluntary | Prescriptive | Broad |
| | | | BilReG – Reform Act on Accounting Regulations | 2005 | Government | Mandatory | Prescriptive | Broad |
| | | | German Sustainability Code | 2011 | Government | Voluntary | Prescriptive | Broad |
| Greece | Athens Stock Exchange | Developed | Law 3487 | 2006 | Government | Voluntary | Principles | Broad |

## Policy Inventory *(cont'd)*

| COUNTRY | STOCK EXCHANGE(S) | DEVELOPED VS EMERGING | POLICY NAME | EFFECTIVE DATE | AUTHORITY | POLICY TYPE | POLICY CLARITY | POLICY SCOPE |
|---|---|---|---|---|---|---|---|---|
| India | National Stock Exchange | Emerging | Annual Environmental Audit Report | 1986 | Government | Mandatory | Prescriptive | Broad |
| | | | Corporate Responsibility for Environmental Protection | 2003 | Government | Mandatory | Prescriptive | Broad |
| | | | CSR Voluntary Guidelines | 2009 | Government | Voluntary | Principles | Broad |
| | | | DPE Guidelines on CSR and Sustainability | 2013 | Government | Voluntary | Prescriptive | Broad |
| | | | Guidance Note on Non-Financial Disclosures | 2011 | Industry/ professional association | Voluntary | Principles | Broad |
| | | | National Voluntary Guidelines | 2011 | Securities regulator | Mandatory | Prescriptive | Broad |
| | | | National Voluntary Guidelines on Social, Environmental & Economic Responsibilities of Business | 2011 | Government | Voluntary | Prescriptive | Broad |
| | | | The Companies Bill | 2012 | Government | Mandatory | Principles | Broad |
| Indonesia | Indonesia Stock Exchange | Emerging | Government Regulation No. 47/2012 | 2012 | Government | Mandatory | Principles | Broad |
| | | | Indonesian Stock Exchange KEHATI-SRI Index | 2009 | Stock exchange | Voluntary | Prescriptive | Broad |
| | | | Law No. 40/2007 | 2007 | Government | Mandatory | Principles | Broad |
| | | | Regulation No. 24/2012 | 2012 | Government | Mandatory | Prescriptive | Narrow |
| | | | Regulation No.KEP-431/BL | 2012 | Securities regulator | Mandatory | Principles | Broad |
| Israel | Tel Aviv Stock Exchange | Developed | Greenhouse Gas Registry | 2010 | Government | Voluntary | Prescriptive | Narrow |
| | | | Greenhouse Gas Reporting Protocol | 2011 | Government | Voluntary | Prescriptive | Narrow |
| | | | MAALA SRI Index | 2006 | Stock exchange | Voluntary | Prescriptive | Broad |
| | | | Pollutant Release and Transfer Register | 2012 | Government | Mandatory | Prescriptive | Narrow |

## Policy Inventory *(cont'd)*

| COUNTRY | STOCK EXCHANGE(S) | DEVELOPED VS EMERGING | POLICY NAME | EFFECTIVE DATE | AUTHORITY | POLICY TYPE | POLICY CLARITY | POLICY SCOPE |
|---|---|---|---|---|---|---|---|---|
| Italy | Borsa Italiana | Developed | 2012/2014 Italian National Action Plan for Corporate Social Responsibility | 2013 | Government | Mandatory | Prescriptive | Broad |
| | | | Directors' report on financial statements | 2009 | Industry/ professional association | Voluntary | Prescriptive | Broad |
| | | | Disclosure of non-financial factors by pension funds | 2002 | Government | Mandatory | Principles | Broad |
| | | | Legislative Decree No. 150/2009 | 2009 | Government | Mandatory | Principles | Broad |
| | | | Legislative decree No. 32/2007 | 2007 | Government | Voluntary | Principles | Broad |
| | | | Memorandum of Understanding with the Carbon Disclosure Project | 2013 | Government | Mandatory | Prescriptive | Broad |
| | | | Ministerial Decree – 24 Jan 2008 | 2008 | Government | Mandatory | Principles | Broad |
| | | | Operational Guidelines for CSR in the banking sector | 2005 | Industry/ professional association | Voluntary | Prescriptive | Broad |
| | | | The CSR-SC project | 2002 | Government | Voluntary | Prescriptive | Broad |
| | | | The Social reporting standards, 2013 | 2013 | Industry/ professional association | Voluntary | Prescriptive | Broad |
| Japan | Osaka Securities Exchange, Tokyo Stock Exchange | Developed | ELV Recycling Law | 2002 | Government | Mandatory | Prescriptive | Narrow |
| | | | Emissions Trading Exchange | 2009 | Stock exchange | Voluntary | Prescriptive | Narrow |
| | | | Environmental Reporting Guidelines | 2007 | Government | Voluntary | Prescriptive | Broad |
| | | | Japan Green Chip 35 ETF | 2009 | Stock exchange | Voluntary | Prescriptive | Broad |
| | | | Law Concerning the Promotion of Business Activities with Environmental Consideration | 2005 | Government | Mandatory | Principles | Broad |
| | | | Law concerning the Rational Use of Energy, Act on Promotion of Global Warming Countermeasures | 1979 | Government | Mandatory | Prescriptive | Broad |
| | | | Mandatory GHG Accounting System | 2005 | Government | Mandatory | Prescriptive | Narrow |
| | | | Morningstar Socially Responsible Investment Index | 2003 | Stock exchange | Voluntary | Prescriptive | Broad |
| | | | Principles for Financial Action towards a Sustainable Society | 2012 | Industry/ professional association | Voluntary | Principles | Broad |
| | | | Voluntary Emission Trading Scheme | 2005 | Government | Voluntary | Prescriptive | Narrow |

## Policy Inventory *(cont'd)*

| COUNTRY | STOCK EXCHANGE(S) | DEVELOPED VS EMERGING | POLICY NAME | EFFECTIVE DATE | AUTHORITY | POLICY TYPE | POLICY CLARITY | POLICY SCOPE |
|---|---|---|---|---|---|---|---|---|
| Kuwait | Kuwait Stock Exchange | Emerging | None | N/A | N/A | N/A | N/A | N/A |
| Malaysia | Bursa Malaysia | Emerging | Business Sustainability Program | 2010 | Stock exchange | Voluntary | Prescriptive | Broad |
| | | | CSR disclosure incorporated into Listing Requirements | 2008 | Stock exchange | Mandatory | Principles | Broad |
| | | | CSR Framework for voluntary reporting | 2006 | Stock exchange | Voluntary | Prescriptive | Broad |
| | | | CSR in Annual reports | 2007 | Government | Mandatory | Principles | Broad |
| | | | Environmental Quality Act | 1974 | Government | Mandatory | Prescriptive | Broad |
| | | | National Annual Corporate Report Awards | 2008 | Stock exchange | Voluntary | Prescriptive | Broad |
| | | | Powering Business Sustainability: A guide for directors | 2010 | Stock exchange | Voluntary | Prescriptive | Broad |
| Mexico | Mexican Stock Exchange | Emerging | Climate Change law | 2012 | Government | Mandatory | Prescriptive | Broad |
| | | | GHG Program | 2004 | Government | Voluntary | Prescriptive | Narrow |
| | | | Pollutant Release and Transfer Register | 2005 | Government | Mandatory | Prescriptive | Broad |
| | | | The Mexican Stock Exchange's Sustainable Quotes and Prices Index | 2012 | Stock exchange | Voluntary | Prescriptive | Broad |
| Netherlands | Euronext Amsterdam | Developed | Dutch Civil Code | 2006 | Government | Voluntary | Principles | Broad |
| | | | Environmental Protection Act | 2006 | Government | Mandatory | Prescriptive | Broad |
| | | | Guidelines for the integration of social and environmental activities in financial reporting | 2009 | Government | Voluntary | Prescriptive | Broad |
| | | | Law of 16 July 2005 | 2005 | Government | Mandatory | Prescriptive | Broad |
| | | | Recommendations for Dutch State Holdings | 2009 | Government | Voluntary | Principles | Broad |
| | | | Recommendations on supply chain disclosure and due diligence | 2009 | Government | Voluntary | Prescriptive | Broad |
| | | | The Pollution Emission Register in the Netherlands | 1999 | Government | Mandatory | Prescriptive | Broad |
| | | | Transparency Benchmark | 2004 | Government | Voluntary | Prescriptive | Broad |
| Norway | Oslo Stock Exchange | Developed | Act amending the Norwegian Accounting Act 2013 | 2013 | Government | Mandatory | Prescriptive | Broad |
| | | | Corporate social responsibility in a global economy | 2009 | Government | Voluntary | Prescriptive | Broad |
| | | | Norwegian Accounting Act | 1998 | Government | Mandatory | Prescriptive | Broad |
| | | | Norwegian Code of Practice: Corporate Governance | 2010 | Securities regulator | Mandatory | Principles | Broad |

## Policy Inventory *(cont'd)*

| COUNTRY | STOCK EXCHANGE(S) | DEVELOPED VS EMERGING | POLICY NAME | EFFECTIVE DATE | AUTHORITY | POLICY TYPE | POLICY CLARITY | POLICY SCOPE |
|---|---|---|---|---|---|---|---|---|
| Peru | Lima Stock Exchange | Emerging | None | N/A | N/A | N/A | N/A | N/A |
| Philippines | Philippine Stock Exchange | Emerging | Corporate Social Responsibility Act | 2009 | Government | Voluntary | Principles | Narrow |
| | | | Corporate Social Responsibility Act | 2011 | Government | Mandatory | Principles | Narrow |
| Poland | Warsaw Stock Exchange | Developed | RESPECT index | 2012 | Stock exchange | Voluntary | Prescriptive | Broad |
| | | | The Warsaw Stock Exchange index of responsible companies | 2009 | Stock exchange | Voluntary | Prescriptive | Broad |
| Portugal | Euronext Lisbon | Developed | Law 238/91 | 2005 | Government | Voluntary | Principles | Narrow |
| | | | Resolution of the Council of Ministers, No. 49 | 2007 | Government | Voluntary | Principles | Narrow |
| | | | Social Balance | 1985 | Government | Mandatory | Prescriptive | Broad |
| | | | Sustainability Report | 2006 | Government | Mandatory | Principles | Narrow |
| Qatar | Qatar Stock Exchange | Emerging | None | N/A | N/A | N/A | N/A | N/A |
| Russia | Moscow Exchange | Emerging | Directive 1710p-P13 | 2012 | Government | Mandatory | Prescriptive | Broad |
| | | | Order 11-46/pz-n | 2011 | Government | Mandatory | Prescriptive | Broad |
| Saudi Arabia | Saudi Arabia Stock Exchange | Emerging | Saudi Arabian Responsible Competitiveness Index | 2008 | Government | Voluntary | Principles | Broad |
| Singapore | Singapore Exchange | Developed | Energy Conservation Act | 2012 | Government | Mandatory | Prescriptive | Broad |
| | | | Guide to Sustainability Reporting for Listed Companies | 2011 | Stock exchange | Voluntary | Prescriptive | Broad |
| | | | Voluntary guidance | 2012 | Stock exchange | Voluntary | Principles | Broad |
| South Africa | Johannesburg Stock Exchange | Emerging | JSE Socially Responsible Investment Index | 2004 | Stock exchange | Voluntary | Prescriptive | Broad |
| | | | Listing Requirement | 2010 | Stock exchange | Mandatory | Principles | Narrow |
| | | | The Mineral Resources and Petroleum Bill | 2009 | Government | Mandatory | Prescriptive | Broad |
| South Korea | Korea Exchange | Developed | BEST Sustainable Management guidelines | 2006 | Government | Voluntary | Prescriptive | Broad |
| | | | Environmental Reporting Guidelines | 2007 | Government | Voluntary | Prescriptive | Broad |
| | | | Green Posting System | 2012 | Government | Mandatory | Prescriptive | Broad |

## Policy Inventory *(cont'd)*

| COUNTRY | STOCK EXCHANGE(S) | DEVELOPED VS EMERGING | POLICY NAME | EFFECTIVE DATE | AUTHORITY | POLICY TYPE | POLICY CLARITY | POLICY SCOPE |
|---|---|---|---|---|---|---|---|---|
| Spain | BME Spanish Exchanges | Developed | Law 7 | 2006 | Government | Voluntary | Principles | Broad |
| | | | National Accounting Plan | 2007 | Government | Mandatory | Prescriptive | Narrow |
| | | | Resolution of 8 of February 2006 | 2006 | Industry/ professional association | Voluntary | Prescriptive | Narrow |
| | | | Spanish Sustainable Economy Law Article 39 | 2011 | Government | Mandatory | Prescriptive | Broad |
| Sweden | Stockholm Stock Exchange | Developed | Annual Accounts Act | 2005 | Government | Mandatory | Principles | Broad |
| | | | Guidelines for External Reporting by State-Owned Companies | 2007 | Government | Mandatory | Prescriptive | Broad |
| | | | Guidelines on environmental information in the Directors' Report section of the Annual Report | 2012 | Government | Voluntary | Prescriptive | Broad |
| | | | OMX GES Nordic Sustainability Index | 2008 | Stock exchange | Voluntary | Prescriptive | Broad |
| | | | Sustainability goals for State-owned enterprises | 2012 | Government | Mandatory | Principles | Broad |
| Switzerland | SIX Swiss Exchange | Developed | BBGI-EthicalQuote Swiss Equities | 2012 | Stock exchange | Voluntary | Prescriptive | Broad |
| Thailand | Bangkok Stock Exchange | Emerging | Guidance Document 'Approach to Social Responsibility Implementation for Corporations' | 2012 | Stock exchange | Voluntary | Prescriptive | Broad |
| | | | Principles of Good Corporate Governance for Listed Companies | 2006 | Stock exchange | Voluntary | Principles | Broad |
| Turkey | Borsa Istanbul | Emerging | Communiqué on 'Corporate Governance Principles' | 2011 | Securities regulator | Mandatory | Principles | Broad |
| | | | CSR In Turkey, Corporate Sustainability Reporting | 2003 | Securities regulator | Voluntary | Principles | Broad |
| | | | Environment Law No. 2872 | 1983 | Government | Mandatory | Principles | Broad |
| | | | GHG Regulation | 2012 | Government | Mandatory | Prescriptive | Narrow |
| | | | Istanbul Stock Exchange Sustainability Index (ISE SI) | 2010 | Stock exchange | Voluntary | Prescriptive | Broad |
| | | | Labour Law No. 4857 | 2003 | Government | Mandatory | Principles | Broad |
| | | | Occupational Health and Safety Law No. 6331 | 2012 | Government | Mandatory | Prescriptive | Narrow |

## Policy Inventory *(cont'd)*

| COUNTRY | STOCK EXCHANGE(S) | DEVELOPED VS EMERGING | POLICY NAME | EFFECTIVE DATE | AUTHORITY | POLICY TYPE | POLICY CLARITY | POLICY SCOPE |
|---|---|---|---|---|---|---|---|---|
| United Kingdom | London Stock Exchange | Developed | FTSE 4Good Index | 2001 | Stock exchange | Voluntary | Prescriptive | Broad |
| | | | FTSE Regulation 2012 | 2012 | Stock exchange | Mandatory | Prescriptive | Broad |
| | | | Quoted companies GHG reporting | 2013 | Government | Mandatory | Prescriptive | Narrow |
| | | | Reporting Guidelines – Environmental Key Performance Indicators | 2006 | Government | Voluntary | Prescriptive | Broad |
| | | | The Carbon Reduction Commitment | 2010 | Government | Mandatory | Prescriptive | Narrow |
| | | | The Climate Change Act | 2008 | Government | Mandatory | Prescriptive | Narrow |
| | | | The Companies Act | 2007 | Government | Mandatory | Principles | Broad |
| | | | UK Social Stock Exchange | 2009 | Stock exchange | Voluntary | Prescriptive | Broad |
| United States | Nasdaq, New York Stock Exchange | Developed | Clean Air Act | 1970 | Government | Mandatory | Prescriptive | Narrow |
| | | | EPA Mandatory Greenhouse Gas Reporting Rule | 2009 | Government | Mandatory | Prescriptive | Narrow |
| | | | Regulation S-K | 2010 | Securities regulator | Mandatory | Principles | Broad |

# Appendix D

## Employee Turnover

| STOCK EXCHANGE | 2007 | 2008 | 2009 | 2010 | 2011 | CAGR | NUMBER OF LARGE LISTINGS |
|---|---|---|---|---|---|---|---|
| Athens Stock Exchange | 17% | 40% | 25% | 25% | 44% | 26% | 9 |
| Australian Securities Exchange | 23% | 35% | 23% | 25% | 26% | 3% | 86 |
| Bangkok Stock Exchange | 0% | 0% | 0% | 0% | 3% | 0% | 40 |
| BM&FBOVESPA | 15% | 30% | 28% | 34% | 30% | 18% | 83 |
| BME Spanish Exchanges | 25% | 39% | 42% | 46% | 57% | 22% | 37 |
| Bolsa Colombia | 0% | 9% | 21% | 15% | 13% | 11% | 16 |
| Borsa Istanbul | 0% | 7% | 15% | 17% | 17% | 34% | 29 |
| Borsa Italiana | 26% | 51% | 48% | 45% | 42% | 13% | 43 |
| Bursa Malaysia | 10% | 10% | 11% | 18% | 15% | 11% | 47 |
| Copenhagen Stock Exchange | 30% | 38% | 38% | 35% | 40% | 7% | 20 |
| Deutsche Börse | 23% | 29% | 35% | 38% | 37% | 12% | 81 |
| Euronext Amsterdam | 24% | 26% | 26% | 29% | 31% | 7% | 32 |
| Euronext Brussels | 12% | 20% | 15% | 15% | 19% | 12% | 21 |
| Euronext Lisbon | 31% | 40% | 42% | 30% | 56% | 16% | 9 |
| Euronext Paris | 28% | 36% | 40% | 40% | 42% | 10% | 106 |
| Helsinki Stock Exchange | 35% | 47% | 47% | 43% | 53% | 11% | 19 |
| Hong Kong Stock Exchange | 2% | 4% | 5% | 5% | 5% | 21% | 198 |
| Indonesia Stock Exchange | 0% | 0% | 4% | 3% | 4% | 0% | 46 |
| Johannesburg Stock Exchange | 20% | 44% | 42% | 42% | 45% | 22% | 49 |
| Korea Exchange | 9% | 23% | 46% | 44% | 33% | 39% | 84 |
| Kuwait Stock Exchange | 0% | 0% | 0% | 0% | 7% | 0% | 14 |
| Lima Stock Exchange | 0% | 0% | 0% | 0% | 7% | 0% | 15 |
| London Stock Exchange | 21% | 33% | 34% | 28% | 27% | 7% | 185 |
| Mexican Stock Exchange | 3% | 5% | 17% | 16% | 14% | 45% | 42 |
| Moscow Exchange | 10% | 27% | 17% | 19% | 24% | 26% | 33 |
| Nasdaq | 3% | 5% | 3% | 4% | 4% | 12% | 323 |
| National Stock Exchange | 5% | 10% | 13% | 12% | 12% | 23% | 99 |
| New York Stock Exchange | 4% | 8% | 6% | 6% | 5% | 5% | 921 |
| Osaka Securities Exchange | 9% | 8% | 8% | 8% | 7% | -6% | 14 |
| Oslo Stock Exchange | 5% | 38% | 12% | 26% | 40% | 66% | 20 |
| Philippine Stock Exchange | 0% | 14% | 22% | 23% | 10% | -12% | 31 |
| Qatar Stock Exchange | 0% | 0% | 0% | 0% | 0% | 0% | 18 |
| Santiago Stock Exchange | 7% | 11% | 15% | 18% | 18% | 24% | 34 |
| Saudi Arabia Stock Exchange | 0% | 0% | 0% | 0% | 0% | 0% | 40 |

## Employee Turnover *(cont'd)*

| STOCK EXCHANGE | 2007 | 2008 | 2009 | 2010 | 2011 | CAGR | NUMBER OF LARGE LISTINGS |
|---|---|---|---|---|---|---|---|
| Shanghai Stock Exchange | 0% | 2% | 4% | 4% | 7% | 64% | 148 |
| Shenzhen Stock Exchange | 0% | 3% | 5% | 4% | 4% | 7% | 105 |
| Singapore Exchange | 2% | 7% | 10% | 10% | 14% | 63% | 49 |
| SIX Swiss Exchange | 22% | 26% | 33% | 28% | 33% | 10% | 54 |
| Stockholm Stock Exchange | 23% | 43% | 34% | 38% | 39% | 14% | 46 |
| Taiwan Stock Exchange | 5% | 14% | 15% | 14% | 16% | 32% | 64 |
| Tel Aviv Stock Exchange | 0% | 0% | 0% | 0% | 0% | 0% | 16 |
| Tokyo Stock Exchange | 2% | 2% | 3% | 5% | 5% | 31% | 341 |
| Toronto Stock Exchange | 11% | 16% | 17% | 14% | 14% | 7% | 140 |
| Warsaw Stock Exchange | 0% | 0% | 8% | 6% | 6% | 0% | 17 |
| Wiener Börse | 20% | 33% | 27% | 28% | 13% | -10% | 15 |

## Energy

| STOCK EXCHANGE | 2007 | 2008 | 2009 | 2010 | 2011 | CAGR | NUMBER OF LARGE LISTINGS |
|---|---|---|---|---|---|---|---|
| Athens Stock Exchange | 26% | 50% | 58% | 75% | 89% | 36% | 9 |
| Australian Securities Exchange | 36% | 52% | 48% | 47% | 27% | -7% | 86 |
| Bangkok Stock Exchange | 7% | 25% | 13% | 9% | 10% | 11% | 40 |
| BM&FBOVESPA | 25% | 54% | 48% | 41% | 43% | 14% | 83 |
| BME Spanish Exchanges | 43% | 61% | 68% | 74% | 70% | 13% | 37 |
| Bolsa Colombia | 0% | 9% | 14% | 10% | 13% | 11% | 16 |
| Borsa Istanbul | 0% | 0% | 12% | 17% | 14% | 0% | 29 |
| Borsa Italiana | 40% | 65% | 59% | 64% | 56% | 9% | 43 |
| Bursa Malaysia | 6% | 10% | 11% | 13% | 11% | 13% | 47 |
| Copenhagen Stock Exchange | 39% | 62% | 63% | 55% | 50% | 6% | 20 |
| Deutsche Börse | 42% | 65% | 55% | 53% | 51% | 5% | 81 |
| Euronext Amsterdam | 45% | 70% | 67% | 58% | 50% | 2% | 32 |
| Euronext Brussels | 32% | 47% | 40% | 40% | 33% | 1% | 21 |
| Euronext Lisbon | 54% | 50% | 50% | 50% | 89% | 13% | 9 |
| Euronext Paris | 41% | 53% | 58% | 58% | 54% | 7% | 106 |
| Helsinki Stock Exchange | 57% | 67% | 74% | 83% | 74% | 7% | 19 |
| Hong Kong Stock Exchange | 5% | 12% | 13% | 12% | 12% | 25% | 198 |
| Indonesia Stock Exchange | 4% | 20% | 17% | 17% | 13% | 33% | 46 |
| Johannesburg Stock Exchange | 27% | 48% | 60% | 60% | 49% | 16% | 49 |
| Korea Exchange | 47% | 73% | 76% | 73% | 67% | 9% | 84 |
| Kuwait Stock Exchange | 0% | 0% | 0% | 0% | 0% | 0% | 14 |
| Lima Stock Exchange | 0% | 0% | 8% | 6% | 7% | 0% | 15 |
| London Stock Exchange | 43% | 66% | 59% | 50% | 41% | -1% | 185 |
| Mexican Stock Exchange | 6% | 21% | 33% | 28% | 29% | 45% | 42 |
| Moscow Exchange | 10% | 27% | 25% | 23% | 27% | 29% | 33 |
| Nasdaq | 6% | 11% | 10% | 11% | 8% | 7% | 323 |
| National Stock Exchange | 23% | 31% | 36% | 34% | 35% | 11% | 99 |
| New York Stock Exchange | 12% | 18% | 19% | 18% | 14% | 4% | 921 |
| Osaka Securities Exchange | 64% | 67% | 67% | 67% | 57% | -3% | 14 |
| Oslo Stock Exchange | 32% | 63% | 59% | 63% | 55% | 15% | 20 |
| Philippine Stock Exchange | 0% | 0% | 22% | 18% | 13% | 0% | 31 |
| Qatar Stock Exchange | 0% | 0% | 0% | 0% | 0% | 0% | 18 |
| Santiago Stock Exchange | 11% | 22% | 30% | 29% | 24% | 21% | 34 |
| Saudi Arabia Stock Exchange | 0% | 0% | 0% | 3% | 3% | 0% | 40 |
| Shanghai Stock Exchange | 0% | 12% | 10% | 10% | 13% | 3% | 148 |

## Energy *(cont'd)*

| STOCK EXCHANGE | 2007 | 2008 | 2009 | 2010 | 2011 | CAGR | NUMBER OF LARGE LISTINGS |
|---|---|---|---|---|---|---|---|
| Shenzhen Stock Exchange | 0% | 9% | 6% | 5% | 5% | -20% | 105 |
| Singapore Exchange | 4% | 7% | 12% | 12% | 18% | 46% | 49 |
| SIX Swiss Exchange | 38% | 43% | 44% | 43% | 50% | 7% | 54 |
| Stockholm Stock Exchange | 40% | 54% | 45% | 51% | 43% | 2% | 46 |
| Taiwan Stock Exchange | 5% | 17% | 24% | 19% | 20% | 41% | 64 |
| Tel Aviv Stock Exchange | 21% | 14% | 23% | 17% | 0% | 0% | 16 |
| Tokyo Stock Exchange | 61% | 63% | 67% | 66% | 62% | 0% | 341 |
| Toronto Stock Exchange | 20% | 32% | 27% | 25% | 23% | 3% | 140 |
| Warsaw Stock Exchange | 6% | 13% | 15% | 19% | 12% | 19% | 17 |
| Wiener Börse | 25% | 25% | 27% | 33% | 33% | 7% | 15 |

## GHG Emissions

| STOCK EXCHANGE | 2007 | 2008 | 2009 | 2010 | 2011 | CAGR | NUMBER OF LARGE LISTINGS |
|---|---|---|---|---|---|---|---|
| Athens Stock Exchange | 35% | 70% | 75% | 75% | 89% | 26% | 9 |
| Australian Securities Exchange | 50% | 69% | 60% | 55% | 41% | -5% | 86 |
| Bangkok Stock Exchange | 7% | 25% | 19% | 9% | 10% | 11% | 40 |
| BM&FBOVESPA | 20% | 51% | 41% | 41% | 46% | 23% | 83 |
| BME Spanish Exchanges | 43% | 53% | 68% | 77% | 70% | 13% | 37 |
| Bolsa Colombia | 0% | 9% | 14% | 10% | 13% | 11% | 16 |
| Borsa Istanbul | 4% | 0% | 4% | 10% | 10% | 0% | 29 |
| Borsa Italiana | 28% | 51% | 48% | 50% | 47% | 14% | 43 |
| Bursa Malaysia | 3% | 19% | 15% | 13% | 13% | 41% | 47 |
| Copenhagen Stock Exchange | 52% | 85% | 81% | 75% | 70% | 8% | 20 |
| Deutsche Börse | 48% | 65% | 58% | 56% | 53% | 3% | 81 |
| Euronext Amsterdam | 52% | 70% | 59% | 61% | 53% | 1% | 32 |
| Euronext Brussels | 28% | 67% | 60% | 50% | 38% | 8% | 21 |
| Euronext Lisbon | 46% | 70% | 50% | 70% | 100% | 21% | 9 |
| Euronext Paris | 35% | 48% | 51% | 52% | 51% | 10% | 106 |
| Helsinki Stock Exchange | 43% | 67% | 63% | 83% | 79% | 16% | 19 |
| Hong Kong Stock Exchange | 8% | 14% | 11% | 8% | 10% | 7% | 198 |
| Indonesia Stock Exchange | 4% | 10% | 9% | 3% | 4% | 1% | 46 |
| Johannesburg Stock Exchange | 32% | 59% | 67% | 67% | 57% | 16% | 49 |
| Korea Exchange | 50% | 75% | 74% | 73% | 64% | 6% | 84 |
| Kuwait Stock Exchange | 0% | 0% | 0% | 0% | 0% | 0% | 14 |

## GHG Emissions *(cont'd)*

| STOCK EXCHANGE | 2007 | 2008 | 2009 | 2010 | 2011 | CAGR | NUMBER OF LARGE LISTINGS |
|---|---|---|---|---|---|---|---|
| Lima Stock Exchange | 0% | 0% | 8% | 6% | 7% | 0% | 15 |
| London Stock Exchange | 59% | 84% | 75% | 68% | 60% | 0% | 185 |
| Mexican Stock Exchange | 6% | 32% | 38% | 25% | 24% | 39% | 42 |
| Moscow Exchange | 0% | 5% | 8% | 5% | 15% | 49% | 33 |
| Nasdaq | 12% | 21% | 14% | 12% | 8% | -8% | 323 |
| National Stock Exchange | 8% | 14% | 16% | 14% | 14% | 14% | 99 |
| New York Stock Exchange | 24% | 37% | 29% | 27% | 20% | -4% | 921 |
| Osaka Securities Exchange | 82% | 83% | 83% | 83% | 79% | -1% | 14 |
| Oslo Stock Exchange | 32% | 63% | 53% | 68% | 65% | 20% | 20 |
| Philippine Stock Exchange | 0% | 14% | 44% | 27% | 16% | 4% | 31 |
| Qatar Stock Exchange | 0% | 0% | 0% | 0% | 0% | 0% | 18 |
| Santiago Stock Exchange | 7% | 17% | 19% | 18% | 18% | 24% | 34 |
| Saudi Arabia Stock Exchange | 0% | 0% | 0% | 3% | 3% | 0% | 40 |
| Shanghai Stock Exchange | 0% | 2% | 0% | 1% | 2% | 0% | 148 |
| Shenzhen Stock Exchange | 0% | 3% | 3% | 2% | 1% | -33% | 105 |
| Singapore Exchange | 6% | 11% | 14% | 16% | 18% | 32% | 49 |
| SIX Swiss Exchange | 38% | 43% | 45% | 46% | 50% | 7% | 54 |
| Stockholm Stock Exchange | 51% | 75% | 66% | 67% | 61% | 4% | 46 |
| Taiwan Stock Exchange | 10% | 17% | 26% | 27% | 27% | 27% | 64 |
| Tel Aviv Stock Exchange | 14% | 14% | 8% | 17% | 0% | 0% | 16 |
| Tokyo Stock Exchange | 72% | 72% | 76% | 76% | 70% | -1% | 341 |
| Toronto Stock Exchange | 31% | 46% | 39% | 29% | 29% | -1% | 140 |
| Warsaw Stock Exchange | 12% | 25% | 23% | 25% | 18% | 11% | 17 |
| Wiener Börse | 20% | 33% | 27% | 33% | 33% | 14% | 15 |

## Lost-time injury rate

| STOCK EXCHANGE | 2007 | 2008 | 2009 | 2010 | 2011 | CAGR | NUMBER OF LARGE LISTINGS |
|---|---|---|---|---|---|---|---|
| Athens Stock Exchange | 17% | 20% | 25% | 13% | 11% | -11% | 9 |
| Australian Securities Exchange | 36% | 48% | 42% | 46% | 37% | 1% | 86 |
| Bangkok Stock Exchange | 7% | 25% | 19% | 17% | 13% | 17% | 40 |
| BM&FBOVESPA | 6% | 19% | 15% | 14% | 11% | 18% | 83 |
| BME Spanish Exchanges | 14% | 17% | 18% | 14% | 19% | 8% | 37 |
| Bolsa Colombia | 0% | 9% | 7% | 5% | 6% | -12% | 16 |
| Borsa Istanbul | 0% | 0% | 4% | 3% | 0% | 0% | 29 |
| Borsa Italiana | 10% | 19% | 17% | 20% | 19% | 16% | 43 |
| Bursa Malaysia | 0% | 5% | 11% | 11% | 9% | 21% | 47 |
| Copenhagen Stock Exchange | 30% | 46% | 44% | 40% | 35% | 4% | 20 |
| Deutsche Börse | 14% | 24% | 20% | 21% | 21% | 10% | 81 |
| Euronext Amsterdam | 9% | 17% | 19% | 23% | 22% | 25% | 32 |
| Euronext Brussels | 16% | 27% | 25% | 25% | 19% | 4% | 21 |
| Euronext Lisbon | 23% | 20% | 25% | 40% | 56% | 25% | 9 |
| Euronext Paris | 19% | 30% | 32% | 32% | 35% | 17% | 106 |
| Helsinki Stock Exchange | 30% | 47% | 37% | 30% | 47% | 12% | 19 |
| Hong Kong Stock Exchange | 2% | 4% | 4% | 4% | 5% | 27% | 198 |
| Indonesia Stock Exchange | 0% | 0% | 4% | 0% | 2% | 0% | 46 |
| Johannesburg Stock Exchange | 20% | 37% | 36% | 33% | 20% | 0% | 49 |
| Korea Exchange | 11% | 19% | 41% | 35% | 33% | 32% | 84 |
| Kuwait Stock Exchange | 0% | 0% | 0% | 0% | 0% | 0% | 14 |
| Lima Stock Exchange | 0% | 0% | 0% | 0% | 0% | 0% | 15 |
| London Stock Exchange | 25% | 33% | 32% | 33% | 27% | 3% | 185 |
| Mexican Stock Exchange | 6% | 16% | 21% | 16% | 12% | 17% | 42 |
| Moscow Exchange | 0% | 0% | 6% | 2% | 9% | 0% | 33 |
| Nasdaq | 2% | 3% | 2% | 3% | 2% | -9% | 323 |
| National Stock Exchange | 2% | 5% | 11% | 8% | 10% | 45% | 99 |
| New York Stock Exchange | 8% | 13% | 12% | 11% | 10% | 5% | 921 |
| Osaka Securities Exchange | 9% | 8% | 8% | 8% | 7% | -6% | 14 |
| Oslo Stock Exchange | 21% | 38% | 47% | 53% | 50% | 24% | 20 |
| Philippine Stock Exchange | 0% | 0% | 0% | 5% | 3% | 0% | 31 |
| Qatar Stock Exchange | 0% | 0% | 0% | 0% | 0% | 0% | 18 |
| Santiago Stock Exchange | 7% | 11% | 11% | 5% | 6% | -6% | 34 |
| Saudi Arabia Stock Exchange | 0% | 0% | 0% | 0% | 0% | 0% | 40 |
| Shanghai Stock Exchange | 0% | 0% | 0% | 0% | 0% | 0% | 148 |

## Lost-time injury rate *(cont'd)*

| STOCK EXCHANGE | 2007 | 2008 | 2009 | 2010 | 2011 | CAGR | NUMBER OF LARGE LISTINGS |
|---|---|---|---|---|---|---|---|
| Shenzhen Stock Exchange | 0% | 0% | 0% | 0% | 1% | 0% | 105 |
| Singapore Exchange | 2% | 4% | 5% | 2% | 2% | 1% | 49 |
| SIX Swiss Exchange | 5% | 13% | 15% | 13% | 17% | 34% | 54 |
| Stockholm Stock Exchange | 12% | 14% | 18% | 16% | 17% | 11% | 46 |
| Taiwan Stock Exchange | 3% | 3% | 7% | 7% | 6% | 16% | 64 |
| Tel Aviv Stock Exchange | 0% | 0% | 0% | 0% | 0% | 0% | 16 |
| Tokyo Stock Exchange | 16% | 18% | 22% | 22% | 20% | 5% | 341 |
| Toronto Stock Exchange | 15% | 22% | 21% | 16% | 16% | 1% | 140 |
| Warsaw Stock Exchange | 6% | 0% | 0% | 0% | 0% | 0% | 17 |
| Wiener Börse | 5% | 8% | 13% | 17% | 20% | 41% | 15 |

## Payroll

| STOCK EXCHANGE | 2007 | 2008 | 2009 | 2010 | 2011 | CAGR | NUMBER OF LARGE LISTINGS |
|---|---|---|---|---|---|---|---|
| Athens Stock Exchange | 52% | 70% | 67% | 100% | 100% | 18% | 9 |
| Australian Securities Exchange | 82% | 79% | 83% | 81% | 79% | -1% | 86 |
| Bangkok Stock Exchange | 87% | 75% | 100% | 100% | 90% | 1% | 40 |
| BM&FBOVESPA | 55% | 84% | 76% | 89% | 96% | 15% | 83 |
| BME Spanish Exchanges | 92% | 92% | 89% | 89% | 95% | 1% | 37 |
| Bolsa Colombia | 75% | 100% | 79% | 70% | 75% | 0% | 16 |
| Borsa Istanbul | 77% | 71% | 92% | 97% | 93% | 5% | 29 |
| Borsa Italiana | 86% | 81% | 83% | 84% | 77% | -3% | 43 |
| Bursa Malaysia | 100% | 100% | 100% | 97% | 94% | -2% | 47 |
| Copenhagen Stock Exchange | 87% | 85% | 88% | 85% | 90% | 1% | 20 |
| Deutsche Börse | 87% | 87% | 87% | 88% | 85% | -1% | 81 |
| Euronext Amsterdam | 85% | 83% | 78% | 77% | 75% | -3% | 32 |
| Euronext Brussels | 80% | 87% | 85% | 95% | 90% | 3% | 21 |
| Euronext Lisbon | 100% | 100% | 100% | 100% | 100% | 0% | 9 |
| Euronext Paris | 88% | 85% | 83% | 84% | 84% | -1% | 106 |
| Helsinki Stock Exchange | 91% | 87% | 89% | 91% | 89% | -1% | 19 |
| Hong Kong Stock Exchange | 94% | 88% | 95% | 95% | 93% | 0% | 198 |
| Indonesia Stock Exchange | 92% | 80% | 100% | 97% | 100% | 2% | 46 |
| Johannesburg Stock Exchange | 86% | 81% | 80% | 82% | 76% | -3% | 49 |
| Korea Exchange | 97% | 98% | 96% | 85% | 82% | -4% | 84 |
| Kuwait Stock Exchange | 100% | 90% | 80% | 82% | 71% | -8% | 14 |
| Lima Stock Exchange | 50% | 57% | 62% | 76% | 60% | 5% | 15 |
| London Stock Exchange | 92% | 89% | 91% | 91% | 88% | -1% | 185 |
| Mexican Stock Exchange | 10% | 5% | 0% | 6% | 12% | 0% | 42 |
| Moscow Exchange | 95% | 100% | 100% | 98% | 94% | 0% | 33 |
| Nasdaq | 10% | 14% | 11% | 13% | 14% | 9% | 323 |
| National Stock Exchange | 98% | 97% | 99% | 100% | 100% | 0% | 99 |
| New York Stock Exchange | 12% | 12% | 13% | 13% | 11% | -1% | 921 |
| Osaka Securities Exchange | 100% | 100% | 100% | 100% | 100% | 0% | 14 |
| Oslo Stock Exchange | 84% | 88% | 82% | 79% | 75% | -3% | 20 |
| Philippine Stock Exchange | 85% | 86% | 89% | 95% | 97% | 3% | 31 |
| Qatar Stock Exchange | 77% | 75% | 83% | 79% | 78% | 0% | 18 |
| Santiago Stock Exchange | 11% | 28% | 78% | 79% | 82% | 65% | 34 |
| Saudi Arabia Stock Exchange | 78% | 76% | 79% | 90% | 85% | 2% | 40 |
| Shanghai Stock Exchange | 15% | 36% | 31% | 74% | 71% | 47% | 148 |

## **Payroll** *(cont'd)*

| STOCK EXCHANGE | 2007 | 2008 | 2009 | 2010 | 2011 | CAGR | NUMBER OF LARGE LISTINGS |
|---|---|---|---|---|---|---|---|
| Shenzhen Stock Exchange | 13% | 25% | 26% | 74% | 70% | 51% | 105 |
| Singapore Exchange | 90% | 96% | 90% | 90% | 84% | -2% | 49 |
| SIX Swiss Exchange | 84% | 80% | 80% | 82% | 80% | -1% | 54 |
| Stockholm Stock Exchange | 79% | 86% | 84% | 84% | 78% | 0% | 46 |
| Taiwan Stock Exchange | 97% | 97% | 96% | 97% | 95% | 0% | 64 |
| Tel Aviv Stock Exchange | 71% | 86% | 85% | 72% | 75% | 1% | 16 |
| Tokyo Stock Exchange | 96% | 97% | 98% | 94% | 95% | 0% | 341 |
| Toronto Stock Exchange | 2% | 3% | 3% | 5% | 5% | 30% | 140 |
| Warsaw Stock Exchange | 94% | 100% | 100% | 94% | 94% | 0% | 17 |
| Wiener Börse | 75% | 75% | 73% | 72% | 73% | -1% | 15 |

## Waste

| STOCK EXCHANGE | 2007 | 2008 | 2009 | 2010 | 2011 | CAGR | NUMBER OF LARGE LISTINGS |
|---|---|---|---|---|---|---|---|
| Athens Stock Exchange | 9% | 30% | 33% | 50% | 56% | 59% | 9 |
| Australian Securities Exchange | 23% | 33% | 24% | 25% | 22% | -1% | 86 |
| Bangkok Stock Exchange | 0% | 25% | 19% | 13% | 10% | -26% | 40 |
| BM&FBOVESPA | 15% | 32% | 36% | 41% | 37% | 25% | 83 |
| BME Spanish Exchanges | 37% | 53% | 63% | 66% | 62% | 14% | 37 |
| Bolsa Colombia | 0% | 9% | 21% | 15% | 19% | 27% | 16 |
| Borsa Istanbul | 4% | 0% | 4% | 13% | 10% | 0% | 29 |
| Borsa Italiana | 34% | 65% | 57% | 59% | 51% | 10% | 43 |
| Bursa Malaysia | 6% | 5% | 11% | 11% | 9% | 7% | 47 |
| Copenhagen Stock Exchange | 30% | 46% | 56% | 45% | 45% | 10% | 20 |
| Deutsche Börse | 42% | 62% | 51% | 51% | 47% | 3% | 81 |
| Euronext Amsterdam | 42% | 52% | 48% | 45% | 41% | -1% | 32 |
| Euronext Brussels | 28% | 47% | 40% | 45% | 43% | 11% | 21 |
| Euronext Lisbon | 38% | 40% | 58% | 50% | 67% | 15% | 9 |
| Euronext Paris | 34% | 43% | 49% | 50% | 50% | 10% | 106 |
| Helsinki Stock Exchange | 52% | 60% | 74% | 87% | 79% | 11% | 19 |
| Hong Kong Stock Exchange | 1% | 6% | 5% | 6% | 6% | 47% | 198 |
| Indonesia Stock Exchange | 4% | 10% | 4% | 0% | 0% | 0% | 46 |
| Johannesburg Stock Exchange | 11% | 22% | 22% | 21% | 20% | 16% | 49 |
| Korea Exchange | 33% | 56% | 59% | 55% | 45% | 8% | 84 |
| Kuwait Stock Exchange | 0% | 0% | 0% | 0% | 0% | 0% | 14 |
| Lima Stock Exchange | 0% | 0% | 0% | 0% | 7% | 0% | 15 |
| London Stock Exchange | 43% | 61% | 52% | 46% | 43% | 0% | 185 |
| Mexican Stock Exchange | 6% | 11% | 29% | 22% | 19% | 31% | 42 |
| Moscow Exchange | 22% | 41% | 39% | 33% | 39% | 16% | 33 |
| Nasdaq | 5% | 12% | 9% | 8% | 6% | 5% | 323 |
| National Stock Exchange | 6% | 8% | 13% | 9% | 10% | 14% | 99 |
| New York Stock Exchange | 9% | 16% | 15% | 14% | 11% | 5% | 921 |
| Osaka Securities Exchange | 82% | 75% | 75% | 75% | 64% | -6% | 14 |
| Oslo Stock Exchange | 11% | 38% | 29% | 42% | 40% | 40% | 20 |
| Philippine Stock Exchange | 0% | 14% | 22% | 18% | 10% | -12% | 31 |
| Qatar Stock Exchange | 0% | 0% | 0% | 0% | 0% | 0% | 18 |
| Santiago Stock Exchange | 11% | 28% | 22% | 21% | 26% | 24% | 34 |
| Saudi Arabia Stock Exchange | 0% | 0% | 0% | 0% | 0% | 0% | 40 |
| Shanghai Stock Exchange | 0% | 0% | 1% | 1% | 1% | 0% | 148 |

## Waste *(cont'd)*

| STOCK EXCHANGE | 2007 | 2008 | 2009 | 2010 | 2011 | CAGR | NUMBER OF LARGE LISTINGS |
|---|---|---|---|---|---|---|---|
| Shenzhen Stock Exchange | 0% | 3% | 1% | 2% | 0% | 0% | 105 |
| Singapore Exchange | 2% | 4% | 7% | 10% | 12% | 57% | 49 |
| SIX Swiss Exchange | 34% | 39% | 38% | 38% | 43% | 5% | 54 |
| Stockholm Stock Exchange | 26% | 43% | 39% | 36% | 33% | 6% | 46 |
| Taiwan Stock Exchange | 7% | 17% | 26% | 21% | 27% | 40% | 64 |
| Tel Aviv Stock Exchange | 0% | 0% | 8% | 6% | 0% | 0% | 16 |
| Tokyo Stock Exchange | 63% | 62% | 67% | 66% | 61% | -1% | 341 |
| Toronto Stock Exchange | 12% | 22% | 18% | 15% | 16% | 8% | 140 |
| Warsaw Stock Exchange | 12% | 38% | 23% | 25% | 12% | 0% | 17 |
| Wiener Börse | 15% | 25% | 20% | 22% | 20% | 7% | 15 |

## Water

| STOCK EXCHANGE | 2007 | 2008 | 2009 | 2010 | 2011 | CAGR | NUMBER OF LARGE LISTINGS |
|---|---|---|---|---|---|---|---|
| Athens Stock Exchange | 26% | 70% | 67% | 75% | 89% | 36% | 9 |
| Australian Securities Exchange | 27% | 40% | 36% | 35% | 29% | 2% | 86 |
| Bangkok Stock Exchange | 0% | 25% | 19% | 13% | 10% | -26% | 40 |
| BM&FBOVESPA | 27% | 62% | 50% | 46% | 46% | 14% | 83 |
| BME Spanish Exchanges | 47% | 61% | 71% | 77% | 70% | 11% | 37 |
| Bolsa Colombia | 0% | 9% | 21% | 15% | 19% | 27% | 16 |
| Borsa Istanbul | 8% | 7% | 15% | 23% | 17% | 22% | 29 |
| Borsa Italiana | 40% | 59% | 54% | 55% | 51% | 7% | 43 |
| Bursa Malaysia | 6% | 10% | 15% | 18% | 13% | 19% | 47 |
| Copenhagen Stock Exchange | 35% | 54% | 63% | 60% | 60% | 15% | 20 |
| Deutsche Börse | 44% | 64% | 49% | 47% | 48% | 2% | 81 |
| Euronext Amsterdam | 39% | 52% | 48% | 48% | 44% | 3% | 32 |
| Euronext Brussels | 28% | 47% | 40% | 40% | 38% | 8% | 21 |
| Euronext Lisbon | 62% | 60% | 75% | 70% | 78% | 6% | 9 |
| Euronext Paris | 42% | 57% | 63% | 60% | 57% | 7% | 106 |
| Helsinki Stock Exchange | 39% | 53% | 63% | 74% | 74% | 17% | 19 |
| Hong Kong Stock Exchange | 5% | 10% | 11% | 10% | 12% | 25% | 198 |
| Indonesia Stock Exchange | 4% | 10% | 22% | 17% | 11% | 27% | 46 |
| Johannesburg Stock Exchange | 23% | 37% | 53% | 53% | 43% | 17% | 49 |
| Korea Exchange | 33% | 54% | 62% | 58% | 43% | 6% | 84 |
| Kuwait Stock Exchange | 0% | 0% | 0% | 0% | 0% | 0% | 14 |
| Lima Stock Exchange | 0% | 0% | 8% | 6% | 13% | 0% | 15 |
| London Stock Exchange | 41% | 60% | 54% | 47% | 40% | -1% | 185 |
| Mexican Stock Exchange | 3% | 16% | 25% | 19% | 24% | 65% | 42 |
| Moscow Exchange | 22% | 41% | 42% | 33% | 39% | 16% | 33 |
| Nasdaq | 5% | 12% | 10% | 10% | 6% | 0% | 323 |
| National Stock Exchange | 8% | 14% | 16% | 11% | 11% | 10% | 99 |
| New York Stock Exchange | 12% | 18% | 18% | 17% | 13% | 1% | 921 |
| Osaka Securities Exchange | 82% | 83% | 83% | 83% | 79% | -1% | 14 |
| Oslo Stock Exchange | 21% | 38% | 29% | 32% | 25% | 4% | 20 |
| Philippine Stock Exchange | 0% | 14% | 33% | 23% | 10% | -12% | 31 |
| Qatar Stock Exchange | 0% | 0% | 0% | 0% | 0% | 0% | 18 |
| Santiago Stock Exchange | 11% | 22% | 26% | 26% | 29% | 28% | 34 |
| Saudi Arabia Stock Exchange | 0% | 0% | 0% | 3% | 3% | 0% | 40 |
| Shanghai Stock Exchange | 0% | 7% | 5% | 5% | 6% | -4% | 148 |

## Water *(cont'd)*

| STOCK EXCHANGE | 2007 | 2008 | 2009 | 2010 | 2011 | CAGR | NUMBER OF LARGE LISTINGS |
|---|---|---|---|---|---|---|---|
| Shenzhen Stock Exchange | 0% | 6% | 3% | 2% | 3% | -23% | 105 |
| Singapore Exchange | 6% | 11% | 14% | 14% | 24% | 42% | 49 |
| SIX Swiss Exchange | 36% | 41% | 45% | 44% | 46% | 6% | 54 |
| Stockholm Stock Exchange | 35% | 50% | 42% | 44% | 35% | 0% | 46 |
| Taiwan Stock Exchange | 10% | 17% | 22% | 23% | 25% | 25% | 64 |
| Tel Aviv Stock Exchange | 14% | 0% | 23% | 17% | 0% | 0% | 16 |
| Tokyo Stock Exchange | 62% | 62% | 67% | 66% | 62% | 0% | 341 |
| Toronto Stock Exchange | 11% | 22% | 22% | 16% | 16% | 10% | 140 |
| Warsaw Stock Exchange | 12% | 25% | 15% | 19% | 12% | 0% | 17 |
| Wiener Börse | 10% | 25% | 20% | 22% | 20% | 19% | 15 |

## Notes

# Notes