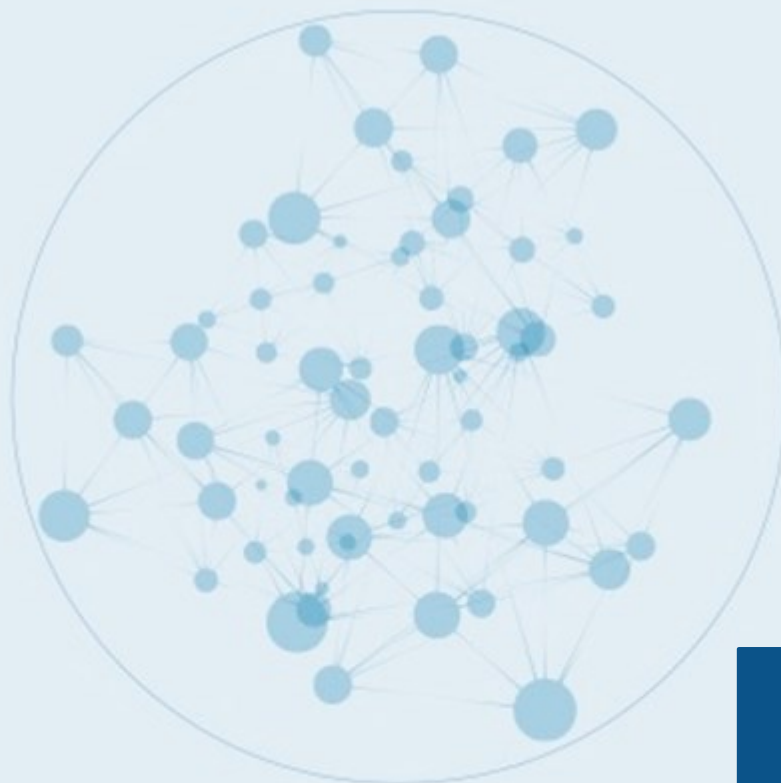




STOCK EXCHANGES AND SUSTAINABILITY



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The UNEP Inquiry

The Inquiry into the Design of a Sustainable Financial System has been initiated by the United Nations Environment Programme to advance policy options to improve the financial system's effectiveness in mobilizing capital towards a green and inclusive economy—in other words, sustainable development. Established in January 2014, it published its final report, *The Financial System We Need*, in October 2015.

More information on the Inquiry is at: www.unep.org/inquiry and www.unepinquiry.org or from: Ms. Mahenau Agha, Director of Outreach mahenau.gha@unep.org

About the author

Siobhan Cleary is a former Director of Strategy and Public Policy at the Johannesburg Stock Exchange and Yale World Fellow. She has represented the JSE on the Working Committee of the World Federation of Exchanges (WFE) and co-authored a chapter in the WFE anniversary book on the future of regulated securities exchanges. She is currently the Head of Strategy and Public Policy at the World Federation of Exchanges though was working as an independent consultant at the time that this was written.

About this report

This report forms part of the broader Inquiry and looks at not just effective mobilization of capital but the development of a financial system that is supportive of more sustainable outcomes. It does this by examining one part of the financial system, namely equity markets. The report and its conclusions are based on extensive desktop research and interviews, though the conclusions reached are those of the author. Finally, the scope of this paper is such that by its very nature it generalizes to a certain extent and may not treat all topics with the depth that they require. Thus, where the paper utilizes certain qualifications, these should be understood as recognizing that the statement does not hold in all instances.

Errors and omissions are the responsibility of the author.

Comments are welcome and should be sent to simon.zadek@unep.org

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Executive summary

Stock exchanges have historically played an important role in economic growth and development through enabling effective capital allocation. However, exchanges and markets more broadly have changed over time, in structure, interconnectedness and rate of activity. This has happened against a backdrop of growing recognition of the unsustainability of the current economic growth path in both social and environmental terms. Sustainability advocates and others have identified stock exchanges and evolving market structure as both contributors to the problem and a potential partner in the solution. Markets and by extension, the companies listed on exchanges and the investors in those companies, are increasingly short-term in outlook and appear not to value the environmental and social impact of corporate behaviour. This is due to a range of factors including (but not limited to) the lack of disclosure by listed companies of relevant environmental, social and governance information, as well as an evolving market structure and trading behaviour that favours trading above investing. Given that it is increasingly clear that environmental and social issues have an impact on corporate performance, exchanges (or the relevant securities regulators) must require disclosure in the same way that financial disclosure is required. Exchanges also have a role to play in developing sustainability indices, ratings and associated products that are useful to investors as they seek to shift to more sustainable investment. More fundamentally, it is necessary to address some of the challenges posed by new market structures. This requires improving the understanding of how the current and evolving market structure impacts on the core capital raising and allocation function of markets and redefining market quality to reflect this linkage. Markets will not, however, even if optimized for sustainability, solve the sustainability challenge, as they should reflect societal norms and expectations, rather than driving them.

1 Introduction

There is growing consensus that the current global economic growth trajectory is unsustainable: unsustainable in the sense that it is contributing to increasing inequality (social and economic exclusion) and that it is happening with disregard for planetary boundaries. It is therefore critical to not only reorient the economy towards a more environmentally and socially sustainable growth path but to mobilize substantial new investment towards this end. In order to achieve a sustainable economy it is necessary to have a sustainable financial system, that is to say one that is not only stable and resilient but one that also effectively mobilizes the allocation of capital towards a sustainable economy.

This paper forms part of the broader Inquiry into the Design of a Sustainable Financial System and examines the role of stock exchanges in the context of sustainable finance. The Inquiry seeks to identify policy and other options that would “deliver a step change in the financial system’s effectiveness in mobilizing capital towards a green and inclusive economy” and equity markets (with stock exchanges at their centre) have been identified both as part of the problem and potential part of the solution.

Stock exchanges – as the interface between listed companies and investors – are attractive targets as sustainability change agents. Not only are companies that are listed on exchanges required to comply with certain standards and to disclose information about the company’s performance on an ongoing basis, but equity markets themselves, if functioning well, should ensure allocation of capital to its most productive (ideally, sustainable) use. The Sustainable Stock Exchanges Initiative (SSE) 2014 Progress Report¹ points out that there are over 45,000 companies with a market capitalization of over US\$65 trillion listed on the 55 exchanges that are members of the World Federation of Exchanges and the SSE. The world’s 2,000 largest listed companies according to Forbes (2014) have revenues of US\$39 trillion and assets of US\$162 trillion.² Meanwhile, the OECD estimates that as at end 2013, assets under management of institutional investors in OECD countries came to US\$93 trillion and as at 2011, 38% of institutional assets were invested in public equities. Ensuring that these assets and this capital are directed towards more sustainable outcomes would be a significant step in the right direction. In order for this to happen however, regulators, policymakers and standard-setters need to address market shortcomings while also recognizing market limitations in enabling a significant shift.

This paper explores these themes in more detail and to that end, deals with the following: it begins by examining the theory regarding the role of stock exchanges in economic growth and development; it then goes on to look at how stock exchanges have changed over time both in legal form and focus and to identify their likely trajectory; next it looks at issues of market short-termism and a lack of incorporation of sustainability into investment decision making and the role of stock exchanges in this regard; it then goes on to examine existing exchange and investment sustainability initiatives; and concludes with a set of recommendations to more closely align exchanges (or markets) with the sustainability agenda.

2 Stock markets and (sustainable) economic development: Equity markets in theory

In theory, if equity markets function as they are supposed to, they would “*operate and sustain high performing companies and (to) earn good returns for savers without undue risk*”.³ This occurs through the interaction of the primary and secondary markets with capital raising happening in the primary market and trading of shares happening in the secondary market. While there is some dispute about the exact nature of the relationship between the primary and secondary markets and the link to the real economy, the model is relatively straightforward: companies with interesting growth prospects are able to raise capital in the primary market (for example, through listing on a stock exchange) from a large pool of public investors. The fact that there is a large number of investors lowers the investment risk for all investors (a single investor is not required to invest as much as they would, for example, in a private company) and the cost of capital for the company. Additionally, because there are different types of investors with different investment horizons, requirements, and perspectives on the prospects of the company and these investors are able to trade their shares in the secondary market (thereby realizing the value or loss of their investment) companies are able to raise capital for activities with time horizons that may exceed the time horizons of individual investors. Thus, the aggregating, risk-pooling and sharing function of the primary market, coupled with the exit opportunities provided by a liquid secondary market enable companies to raise capital cost-effectively for long investment-horizon initiatives.

Equity capital markets also have an informational component. First, as part of being “listed”, companies must publish information deemed to be important to shareholders, both initially and on a continuing basis; second, the share price, as reflective of investors’ views on management decisions and company prospects, provide valuable information to managers. This disclosure requirement coupled with the informational content of the share price greatly reduces the cost for investors of sourcing this information independently and enhances the ability of investors to exercise governance over the company through voice (company engagement) and/or exit (selling the shares).

While the model linking financial markets and the real economy is easy to articulate, economists have battled both to empirically demonstrate a link between financial markets and real economic growth and development and (even where such a link is found) to identify the transmission effects. In their 1996 paper on “Stock Market Development and Long Run Growth”,⁴ Levine and Zervos summarize some of the competing theoretical findings, stating that “*some theories provide a conceptual basis for believing that larger, more liquid, more efficient stock markets boost economic growth. Other theoretical models, however, have a more pessimistic opinion about the importance of stock markets.*”⁵ They nonetheless conclude their analysis with a finding of a strong correlation (but not causation) between “*stock market liquidity and “current and future rates of economic growth, capital accumulation, and productivity growth*”. In a subsequent study, Beck and Levine find that “on balance” stock market and bank development impacts positively on economic growth and development.⁶ Bond, Edmans and Goldstein (2011) meanwhile conclude that company share prices as determined by trading activity in the secondary market contain information about firm value and that this information may have a feedback effect on the firm’s behaviour. Tadesse concurs with the informational importance of stock market prices, arguing that these perform an important governance function in “*providing outside investors a variety of mechanisms for monitoring inside decision makers*”.⁷

This enthusiasm for the informational content of share prices needs to be tempered however with an appreciation of three key shortcomings of equity markets. The first is that although stock prices may

reflect investors' perspectives on known information about a firm (a weak form of the efficient markets hypothesis), this does not necessarily equate into an “*unbiased estimate of the fundamental value*”⁸ of the firm. Kay identifies three reasons for this: first, long-run company performance is difficult to predict; second, different investors and actors are incentivized and motivated in different ways, and third, investors do not behave as rationally as theory would predict (e.g. assorted stock bubbles). The second (a shortcoming in relation to sustainability) is that markets allocate capital on the basis of expected company performance and consequent expected returns for shareholders, not value judgements about social or environmental performance. The third is that markets value individual institutions, not systems. These last two points become critical in later discussions on concepts of materiality.

Finally, the role and value of stock markets also need to be contextualized within the broader financial economy in which they operate. In a May 2015 International Monetary Fund (IMF) Staff Discussion Note⁹ the authors support the economic and financial development link but build on the “too much finance” studies which suggest that financial deepening is only economically positive to a point. The authors construct a financial development index comprising a range of financial indicators for both financial institutions and financial markets. The conclusions of most relevance for this paper are as follows:

- financial development contributes to economic development up to a point, whereafter the positive impact weakens and eventually declines;
- while some financial sector functions remain intact at high levels of financial development, others (such as efficient capital allocation and effective corporate control) may weaken;
- above certain levels of financial development, both growth and macroeconomic stability are harmed.

Therefore, it is fair to conclude for the purposes of this paper that financial (stock market) development as represented by increased liquidity and market capitalization, within a framework of adequate disclosure and market regulation, will contribute positively to real economic development both through allocation and governance, up to a point. Furthermore, if one accepts Michael Spence's proposition that the purpose of economic growth is in fact “*inclusive, sustainable prosperity*” then by definition the most productive capital allocation should be the one that achieves this end. To the extent therefore that markets are undervaluing sustainability considerations, they are failing. That said however, one must also recognize the limits of markets in achieving inclusive, sustainable prosperity on their own given their imperfections. The questions that the rest of this paper seeks to address are to what extent can markets be utilized to bring about some of the necessary sustainability shift, what are the limits of markets in this and what is the role of stock exchanges both as part of the problem and part of the solution?

3 Stock markets in perspective

3.1 From coffee shops to trading floors¹⁰

While stock exchanges date back several centuries (for example, the London Stock Exchange was formed in 1801, the New York Stock Exchange and Board in 1817, the Bombay Stock Exchange in 1875 and the Johannesburg Stock Exchange in 1887), the developments of the last few decades are most relevant for this report. Prior to the Wall Street Crash of 1929, stock exchanges were truly voluntary, self-governed, member-controlled organizations. Stock trading (broadly defined to include both debt and equity) proliferated throughout the US, Western Europe and the trading centres of East Asia. For markets to function, it was necessary for the participants to know the rules of the game and to believe that all participants would play by the same rules. This led to the concept of exchange membership and the sanction of expulsion if the rules were not adhered to. As exchanges matured, the rules governing how the markets worked evolved, thereby increasing their efficacy and their usage. The use of exchanges was however by and large not government-regulated, and those wishing to buy and sell stocks and bonds did not have to use exchanges – they were simply an increasingly convenient mechanism for trading and price discovery. Exchanges therefore performed a somewhat delicate balancing act between regulating market behaviour in order to ensure trust in the market, and not wanting to alienate their users.

This voluntary self-regulatory structure changed after the Great Depression (for which stock market activity received its fair share of the blame) and the Second World War. Governments introduced greater regulatory oversight of various aspects of stock markets (from issuance to trading activities) and formalized the front-line regulatory function performed by the exchanges. This led in some jurisdictions to the establishment of de facto government-sanctioned exchange monopolies (for example Europe, Japan and South Africa – though not always a single exchange) while in the US over-the-counter trading alternatives remained viable despite the growing role and importance of the New York Stock Exchange (NYSE). As stock exchanges became better regulated, the attractiveness of and interest in equity investments increased. Exchanges financed the regulatory function that they performed through fees that they levied on their members while members earned revenues through trading activity. Members controlled access to markets and were protected through fixed commission charges set by the exchanges. This served to limit price competition between members but was also an increasing source of aggravation for those entities that had to trade through members in order to access the markets. Eventually in 1975, as a consequence of pressure from increasingly powerful institutional investors and banks (at this point, banks accounted for 75% of the trading activity on the NYSE) the exchange abolished fixed commissions. This and other regulatory interventions shifted trading activity back to the NYSE but also consolidated the positions of the larger investment banks relative to the smaller broker-dealers. Other markets did not follow suit immediately as they were still relatively insulated due the presence of capital and exchange controls.

3.2 A more competitive landscape

In the 1980s and 1990s, several factors coincided to accelerate the pace of change in stock exchanges and equity markets more broadly, namely deregulation, internationalization and innovation. The almost complete abandonment of exchange and capital controls during the 1980s and general wealth effects associated with strong economic growth led to a surge not just in equity trading but in cross-border trading. Total equity trading value increased from about US\$1.2 trillion to over US\$11 trillion from the end of the 1970s to the end of the 1980s while international trade grew even faster, from US\$73 billion to

over US\$1.5 trillion over the same period.¹¹ Technological advances enabled exchanges to replace trading floors with electronic matching engines, thereby enhancing trading price dissemination and facilitating access to the market. Finally, the changing composition of the investor base and relative power of various financial intermediaries put exchanges under increasing pressure to bring down prices and streamline access to markets. National exchanges (at least those in economies that were more tightly integrated into international financial markets) now faced competition not only within markets but across borders as well.

3.3 Changing ownership structure

At the end of the 1908s, most exchanges were still either member- or government-owned or some combination of the two. Faced with a newly competitive environment and the need to start investing larger sums in technology, exchanges began to question the durability of the mutual (member- or government-owned) structure. The Stockholm Stock Exchange was the first exchange to demutualize in 1993. The then-CEO of the exchange, commenting on the decision, said: *“the deregulation of financial markets created a completely new business climate ... many (exchanges) concluded that change was necessary. The core of their new strategies was to create a business culture to meet the competitive threats and profit from the business opportunities”*.¹² By 2000 exchanges in the Netherlands, Frankfurt, London, Paris, Hong Kong, Singapore, Toronto, and South Africa (among others) had either already demutualized or indicated their intention to do so. In many instances, exchanges followed the demutualization with a listing on their own exchange. By the end of 2013, for-profit institutions represented 72% of the World Federation of Exchanges’ (WFE) membership, with 40% as listed companies.¹³

3.4 Continued competition and evolution

Perhaps more important for exchanges than their change in legal form was the encouragement by regulators of direct competition to the trading part of the exchange business. As mentioned, the US was among the first jurisdictions to encourage competition among equity execution venues with the intention of increasing the quality (economic efficiency) of equity markets. The combination of Regulation Alternative Trading System (introduced in the late 1990s), decimalization in 2000 and finally, Regulation National Market System (Reg NMS) in 2005 contributed to the current US market structure where the same shares are traded across 11 exchanges and 50 alternative execution venues. The Europeans followed suit with the introduction of the Markets in Financial Instruments Directive (MiFID) in 2007 that broke the effective monopoly status of the European exchanges and resulted in similar (though not nearly as extensive) fragmentation of trading across a range of exchange and exchange-like venues. Regulators in Japan, Canada and Australia also explicitly opened their markets to trading competition. Most other jurisdictions recognize the possibility of exchange competition but in South Africa, Brazil and Hong Kong, there is still a single equity exchange and no alternative execution platforms. In some markets (including most of the more competitive jurisdictions), much of the primary regulatory responsibility for listings and regulation of the secondary market is performed by government and/or an independent regulator, with the exchange performing a narrower, second-tier of regulation (for example, in the UK, the Financial Conduct Authority – a government body – determines a company’s admission to the Official List before its listing on the London Stock Exchange). In other jurisdictions, the exchange is the primary regulator of listed companies and exchange participants.

While most exchanges remain heavily reliant on trading revenue as their main source of income, the for-profit exchanges are looking at ways to diversify revenues away from trading: focus areas include market data, alternative asset classes (such as derivatives), technology services and post-trade services (both

clearing and settlement). The larger exchanges are also focused on geographic expansion either through organic growth or through acquisition. The growth of low latency or high speed trading (in some instances driven by equity execution competitors started by low latency trading firms) encouraged exchanges to upgrade their trading technology, develop low latency data feeds, offer collocation facilities, and review pricing models and order types. At the same time, recognizing their public utility function, exchanges have also invested in the creation of alternative markets for small and medium enterprises such as the Alternative Investment Market (AIM) in the United Kingdom, TSX-Venture in Canada, Alt-X in South Africa and NewConnect in Poland.

3.5 Exchanges and sustainability

Almost all of the world's largest exchanges (the one notable exception is the London Stock Exchange) and many emerging and developing market exchanges are members of the World Federation of Exchanges which stipulates in its membership requirements that *"Exchanges should pursue purposes that are in the public interest, having as a goal to be fair, orderly and neutral to protect all public participants"*. This value statement suggests a recognition of a broader public utility function and arguably as part of this, exchanges around the world are to a greater or lesser extent engaging with the issue of sustainability. For example (see section 4.4 for more detail) the WFE established the Sustainability Working Group in 2014 with a focus on *"build(ing) consensus on the purpose, practicality, and materiality of Environmental, Social, and Governance (ESG) data"*¹⁴ and a growing number of exchanges are members of the Sustainable Stock Exchanges initiative¹⁵ with its objective (among others) of encouraging exchanges to *"enhance corporate ... performance ... on ESG issues ..."*¹⁶

3.6 Markets of the future

While historically exchanges have followed a fairly similar "development" path (i.e. invest in trading technology, expand into other asset classes, commercialize data, demutualize), there does not seem to be a clear blueprint for future evolution. As the larger exchanges expand both geographically and in terms of the products and services they provide, they increasingly compete with smaller, national exchanges and with existing customers. Historically, cross-border mergers and acquisitions have not always generated the hoped-for economies of scale but post-financial crisis regulatory standardization may change this dynamic. This puts increasing pressure on national exchanges as regards business models and growth areas.

There are also new exchange and exchange-type models. In the more traditional exchange space, new entrants have emerged in response to concerns about market quality. Aequitas Neo in Canada and IEX in the US are an exchange and soon-to-be exchange respectively that are explicitly focused on countering the perceived unfairness of trading in Canadian and US markets (see section 4.5 for more information). While both began as trading platforms, Aequitas Neo also plans to start listing companies during the course of 2015 with a stated intent of *"increasing investor confidence, supporting public company success"*.¹⁷ Perhaps more disruptive is the emergence of crowd-funding or peer-to-peer lending models as means of capital raising (debt or equity). While still small, these models are growing rapidly. In 2014, US\$16.2 billion was raised through crowd-funding compared to US\$6.1 billion the previous year.¹⁸ While the initial focus was on the primary market (capital raising), crowdfunding platforms and other providers are now also enabling a secondary trading market for crowdfunded investments.¹⁹

4 Markets, short-termism and the source of the sustainability challenge

Market short-termism has been identified one of the reasons corporations are not behaving more sustainably. Dallas describes short-termism as “the excessive focus of corporate managers, asset managers, investors, and analysts on short-term results, whether quarterly earnings or short-term portfolio returns, and a repudiation of concern for long-term value creation and the fundamental value of firms.”²⁰ It is therefore understandable, given the long investment horizons associated with many sustainability initiatives, that investors, companies and sustainability advocates have focused on this as a significant barrier towards ensuring that businesses adopt a sustainable strategy “that enables a company to create value for its shareholders while contributing to a sustainable society”.²¹

4.1 Market short-termism: the evidence in support?

Concerns about market short-termism have a fairly long pedigree – particularly in the Anglo-Saxon market environments of the United States and the United Kingdom. As far back as 1979, Martin Lipton, arguing in favour of policy changes to empower directors to resist hostile takeover bids asked, “Whether the long-term interests of the nation's corporate system and economy should be jeopardized in order to benefit speculators interested not in the vitality and continued existence of the business enterprise in which they have bought shares, but only in a quick profit on the sale of those shares?”²² Similarly, Nigel Lawson, Chancellor of the Exchequer of the UK, declared in 1986 that: “The big institutional investors nowadays increasingly react to short-term pressure on investment performance ... they are unwilling to countenance long-term investment or sufficient expenditure on R&D.”²³ Concerns around short-termism have only become more pronounced. In the US in 2009, a coalition of business and investors stated: “in recent years, boards, managers, shareholders with varying agendas, and regulators, all, to one degree or another, have allowed short-term considerations to overwhelm the desirable long-term growth and sustainable profit objectives of the corporation.”²⁴ In 2012, John Kay found in his “Review of UK Equity Markets” that a culture of short-termism was harming the British economy.

And indeed, there does appear to be some evidence of damaging short-termism, at least in certain markets. In a survey of over 400 senior finance executives at listed firms (supplemented with in-depth interviews), Graham, Harvey and Rajgopal (2006) found that company managers believed that meeting analyst and investor earnings’ estimates was so important that they would be willing to sacrifice long-term value creation in order to do so.²⁵ Asker, Farre-Mensa and Ljungqvist (2014) assess short-termism by comparing investment behaviour of public and private firms and find that public firms invest significantly less than comparable private firms.²⁶ In 2013 McKinsey and the Canada Pension Plan Investment Board commissioned a survey of over 1,000 executives: 79% of respondents said they felt pressure to produce results in two years or less and nearly half said that strategic reviews occurred in two-year cycles, though the majority felt that longer time horizons were more appropriate. Haldane and Davies,²⁷ looking at 624 UK and US listed companies, found statistically significant evidence of “short-termism in the pricing of companies’ equities” and empirical evidence of excessive discounting by companies of longer-horizon investment projects.

4.2 Linking long-termism and sustainability

There is a potential disconnect between advocates of a longer-term approach to company management and investment decisions, and those who see incorporation of sustainability considerations as a central component of “long-termism”. The difference arises because of a disagreement about whether or not taking a longer-horizon view necessarily presumes the incorporation of environment, social and

governance (ESG) considerations. It is for example notable that the Kay Review, while encouraging companies and investors to focus on the long term, mentions sustainability (as referring to ESG) only in passing. Thus, lengthening time horizons is a necessary but insufficient condition for ensuring a transition to a more sustainable economy. What is also required is a conviction among both investors and company managers that incorporating sustainability considerations is relevant to the long-term performance of the company.

4.3 The roots of the problem and the role of stock exchanges

Several organizations have sought to pinpoint the causes of excessive market short-termism and inadequate incorporation of ESG issues into investor and corporate behaviour. These are summarized as follows:

- Market failure resulting from the failure of governments and/or civil society to compel companies to internalize the social and environmental costs of their activities.
- An increasingly complex investment value chain with misaligned incentives along the entire value chain from asset managers to company CEOs.
- Inadequate understanding by both investors and corporates of the benefits of a more sustainable investment/management approach.
- Insufficient (or completely absent) disclosure by companies of their sustainability performance.
- Shifts that encourage an increase in traders relative to investors particularly in highly financialized economies, with a consequent deleterious impact on investment and corporate horizons.

The first three components and associated recommendations to address these are dealt with extensively in other parts of the Inquiry and more broadly. The remainder of this paper therefore focuses on the last two, which are more directly relevant to stock exchanges.

4.4 Addressing the sustainability business case and information shortfall

4.4.1 Insufficient information?

Two reasons are given for the emphasis on sustainability disclosure. The first is that effective disclosure of relevant ESG information is necessary to ensure greater allocation of capital to sustainable outcomes (thereby rewarding sustainable companies and encouraging a shift in behaviour by less sustainable companies). The second is that *“companies that are transparent on these issues typically do a better job managing them as public disclosure catalyses more systematic strategic planning and proactive management of sustainability challenges”*.²⁸ Thus, the argument goes, disclosure ensures corporate behaviour change both directly, through its impact on the corporation, and indirectly, through shifting capital allocation.²⁹ Exchanges (or listings regulators) in their role as overseers and enforcers of listings standards are therefore seen as a useful lever in ensuring greater disclosure and the associated behavioural transition.

These arguments as a basis of theory of change have resulted in a raft of calls for greater corporate disclosure, enabled by stock exchange listings requirements. Generation Investment Management in their 2012 Sustainable Capitalism “manifesto” call for the introduction of mandatory integrated reporting by all listed companies. Haldane describes “transparency” (greater disclosure by companies of their “long-term intentions”) as the lightest touch policy intervention that regulators could consider to address short-termism in markets.³⁰ The Sustainable Stock Exchanges (SSE) initiative, established in 2009, is focused on identifying ways in which *“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.”³¹ As part of this work, the SSE has produced a voluntary guidance document for exchanges seeking to introduce sustainability reporting requirements. This supplements the Corporate Sustainability Reporting Coalition’s (CSRC) proposal regarding the adoption of national regulations that mandate the disclosure of material sustainability issues³² and the 2014 Ceres proposal on mandatory sustainability listings requirements.³³ These proposals are in addition to a variety of voluntary and mandatory sustainability reporting initiatives around the world, ranging from the Security and Exchange Commission’s (SEC) 2010 Guidance Regarding Disclosure Related to Climate Change to the recently adopted European Union Directive on Non-Financial Reporting to the Security and Exchange Board of India’s 2011 adoption of a requirement that the largest listed companies report on their various ESG initiatives. As at 2014, 15 of the G20 member countries required disclosure on some environmental and/or social issues.³⁴

Despite all of this, there is still a sense that more is required. Ceres, in its 2014 analysis of 600 listed US companies, stressed that while 48% of companies addressed material sustainability issues in their financial filings in 2014 (up from 39% in 2012), 51% disclosed no sustainability information at all.³⁵ Likewise, Aviva Investors referencing the 2013 Corporate Knights Capital Study state that according to Bloomberg data, 75% of the 25,000 companies assessed did not disclose a single sustainability data point.³⁶ Finally, even in instances where there is disclosure, concerns are raised about adequacy, relevance and comparability of sustainability information.

4.4.2 Stock exchanges and the disclosure revolution

This sense of more needing to be done is at least partly attributable to the fact that stock exchanges (and/or relevant securities regulators) have in some instances proved reluctant to require their listed companies to disclose sustainability information. As at 2014, only 7 of the 55 members of the SSE initiative required all their listed companies to engage in some ESG reporting, while a further 5 required reporting for companies in some industries or above a certain size and 3 encouraged reporting or provided detailed guidance. Forty exchanges did not require any ESG reporting.³⁷ The most recent Corporate Knights Capital ranking of stock exchanges according to disclosure by their listed companies of first generation sustainability indicators concluded that *“the momentum behind sustainability disclosure is largely being driven by multinational organizations and specialized initiatives as opposed to stock exchanges or securities regulators”*.^{38,39}

Exchanges give a number of reasons why they have (in some instances, not all) been slow movers.⁴⁰ First, exchanges operating in highly competitive listings jurisdictions (such as the US) are reluctant to unilaterally impose additional disclosure obligations on listed companies if this reduces their attractiveness as a listings venue. Second, companies are not being pressured by stakeholders (particularly investors) to produce the information so the exchange may be perceived as just adding an unnecessary additional regulatory burden.⁴¹ Anecdotal feedback from exchanges is that even in jurisdictions where companies are required to – and do – report exchanges are sometimes told that companies are never asked about their sustainability performance. Third, there is a proliferation of reporting standards and no consensus as to which approach exchanges should endorse. Finally, there is no clear evidence that requiring ESG disclosure necessarily results in corporate behaviour change, or what type of disclosure is more likely to compel change.

In response to the concern regarding what standard to adopt, Ceres developed a listing standards proposal (referred in section 4.4.1) that it submitted to the World Federation of Exchanges in 2014. The

proposal reflects the outcome of engagement with the Ceres investor network and is an attempt at a standardized approach to creating listed company guidance and eventual listings requirements. The proposal contains 3 elements namely:

- A “materiality” assessment disclosed in annual financial filings where management will discuss its approach to determining the company’s material ESG issues;
- Specific ESG disclosure, on a “comply or explain” basis, on 10 key ESG topics, in the format and location of a company’s choosing;
- A hyperlink in annual financial filings to an ESG Disclosure Index (a table or spreadsheet), based on the Global Reporting Initiative Content Index or its equivalent, indicating where existing ESG information can be found.

Materiality in the context of the Ceres proposal is defined as “those topics that have a direct or indirect impact on an organization’s ability to create, preserve, or erode economic, **environmental, and social value** for itself, its stakeholders, **and society at large.**” [emphasis added]

4.4.3 Making the (market) case for sustainability?

There is growing evidence that firms that perform well on material sustainability issues (definitions of materiality vary) outperform those that do not.⁴² Lima and Sanvicente find that Brazilian listed companies that engaged in higher standards of corporate governance and disclosure showed lower costs of equity. Cheng, Ioannou, and Serafeim find that companies with improved corporate social responsibility (CSR) strategies have better access to finance due to improved stakeholder engagement and information transparency.⁴³ Clark, Feiner and Viehs point out that 26 out of 29 empirical studies on sustainability conclude that improved sustainability practices reduce the cost of capital for firms.⁴⁴ Their extensive literature review also finds a positive relationship between sustainability and operational performance and sustainability and a company’s share price performance.

However, the research highlighted above also identifies that it is not the adoption of ESG practices as a whole that translates into better financial performance and improved market performance (as reflected in cost of capital and/or improved share price) but that for certain firms, in certain industries, adoption of certain elements of ESG will have a positive effect. This makes perfect sense if one remembers that markets reflect expectations of future earnings. To the extent therefore that the adoption of ESG considerations enhances those expectations, by reducing or avoiding risks (associated for example with fines for environmental disasters), improving efficiencies and reducing costs (through reducing water usage or disruption of operations through employee strikes), or improving financial returns (through more innovative approaches), this will be reflected in better market performance. This focus on the firm and financial performance is however the crucial distinction between the definition of materiality proposed by Ceres (set out above) and the somewhat narrower definition adopted by the International Integrated Reporting Council (IIRC) framework and Sustainability Accounting Standards Board (SASB).

The IIRC states: “a matter is material if it is of such relevance and importance that it could substantively influence the assessment of providers of financial capital with regard to **the organization’s ability to create value over the short, medium and long term**”⁴⁵ [emphasis added]. Value drivers in the IIRC’s context “are capabilities or variables that **give an organization competitive advantage** and over which it has some degree of control so as to create value”⁴⁶ [emphasis added]. SASB meanwhile states that information is material if there is “a substantial likelihood that the disclosure of the omitted fact would have been viewed **by the reasonable investor** as having significantly altered the ‘total mix’ of information made available”⁴⁷

[emphasis added]. Furthermore, SASB’s “materiality map”, aimed at assisting companies in determining what non-financial information to consider and disclose, look at “evidence of investor interest” and “evidence of financial impact”.⁴⁸

Implicit in these concepts of investor interest and financial impact is also the recognition that context matters (a point that is explored further in the following section). As Rowley and Berman point out in their critique of broad studies of corporate social performance and financial performance “social performance must be defined according to the social context” and “defining [Corporate Social Performance] in a meaningful way requires attention to the unique characteristics of the operational setting”.⁴⁹ Thus, markets – as SASB and the IIRC recognize – do not measure or reward a firm’s ability to “create value for society at large” unless that value translates back into the organizational bottom line, and further that the linkage between social (or sustainability) performance and financial market performance is context dependent.

4.4.4 The behaviour change case for disclosure?

As mentioned earlier, the second argument in favour of greater sustainability disclosure is that the act of disclosure compels behaviour change in the disclosing organizations. There seems to be some (very small, very early) evidence from South Africa that the process of producing an integrated report requires the adoption of “integrated thinking” suggesting some backward linkage. The South African Institute of Chartered Accountants recently released survey results in which the majority of executives concluded that integrated reporting was a driver towards achieving integrated thinking and that integrated thinking improved decision making at management level.⁵⁰ However to focus on reporting alone may miss the relevance of the very specific South African socio-political and economic context.

Other than the South African experience, it has not been possible to find evidence linking sustainability disclosure with corporate performance (in the sense of driving behaviour change). In fact, Gray in 2006 concluded that there was no link between sustainability reporting and corporate behaviour (and further argued, as others have, that sustainability reporting could not even be relied upon to reflect sustainable behaviour).⁵¹ Delmas and Blass found that “firms with the most advanced reporting and environmental management practices tend also to have higher levels of toxic releases and lower environmental compliance”⁵² (though conversely other studies – such as Cheng et al above – have found that better performing firms tend to be more inclined to report). If reporting does not drive behaviour change (or has limited impact), what then does matter?

In attempting to determine what drives differences in corporate social behaviour Ioannou and Serafeim conducted a study of over 2,000 firms from 42 countries over a seven year time period.⁵³ They conclude that national institutional factors contribute significantly to explaining differences in corporate social performance across jurisdictions and that of the institutional factors examined (political system, education and labour system, financial system and cultural system), the political system is the most relevant in determining corporate social performance and the financial system the least relevant. That said, the authors did find within the financial system evaluation that firms in market-based, rather than debt-funded, financial systems tended to score higher on corporate social performance (to the extent that this performance impacted long-term firm value creation) and suggest that the low ranking of the impact of the financial system is likely due to still relatively low investor use of ESG information.

Corporate sustainability – the South African experience

South Africa is often highlighted as a leader in corporate sustainability disclosure and arguably, practice. The King Code of Corporate Governance, first introduced in 1994, encouraged companies to consider sustainability considerations as part of good corporate governance and the 2009 iteration of the Code (King III) specifically advocated integrated reporting. The Johannesburg Stock Exchange (JSE) has taken a multi-pronged approach to sustainability. In the Listing Requirements, certain aspects of the King Codes are mandated while compliance with the remainder of King III is required on an “apply or explain” basis, including the requirement relating to integrated reporting. The JSE is a member of the local Integrated Reporting Committee that has worked to develop guidelines around reporting. The JSE has also used its Socially Responsible Investment (SRI) Index (introduced in 2004) as a way of engagement with listed companies around sustainability issues and a means of shifting companies to greater sustainability disclosure.

This occurs however against a broader social and political backdrop. In 1994, South Africa had just emerged from apartheid and installed its first democratically elected president and government. The country’s apartheid policies had attracted global social opprobrium resulting in South Africa’s exclusion – through sanctions and divestment – from the global economy. The 1994 election therefore represented not just a political transition but a social one that explicitly recognized the need of all South African citizens to address the ills of the past. This was formalized in a range of legislative and other instruments from the Constitution to the Labour Relations and Basic Conditions of Employment Acts to assorted industry charters such as the Financial Sector Charter and the Mining Charter. The relevance of these is that they impose a relatively broad (particularly social) obligation on South African corporations, which obligation corporations accepted through their participation in the process of negotiating particularly the Charters.

It is therefore likely that successive King Codes and JSE Listings Requirements were not controversial for South African corporations inasmuch as they reflected a pre-existing understanding of corporate social responsibility though the existence of a reporting requirement undoubtedly increased the extent of reporting.

4.4.5 The case for disclosure – a summation

Taken together it is possible to conclude the following about corporate performance, corporate disclosure and sustainability. First, as a means of encouraging greater corporate sustainability, markets are somewhat blunt instruments. To the extent that they recognize ESG considerations, they do so through attaching a number (price) to the expected financial impact of ESG issues. Thus, markets will reward firms (through higher share prices and lower cost of capital) for profit and/or performance enhancing ESG investments but may not react at all (or even react positively) to actions with a negative environmental, social or governance impact if they do not believe that these are likely to impact future profitability (or will enhance it). As shown by the literature referenced in this paper, a number of ESG considerations is already recognized as being value enhancing in market terms, and it is likely that, for example, as the effects of climate change or social inequality become more apparent, other ESG issues will become more financially relevant. Some of the increased relevance will be driven by emerging opportunities and risks while others will be as a consequence of changing social and regulatory/political demands placed on corporations and consequently reflected in markets. Markets should reflect prevailing societal and regulatory expectations but not be relied upon to generate values themselves.

Sandel recently argued that “The most fateful change that unfolded in the last three decades was not an increase in greed. It was the expansion of markets, and of market values, into spheres of life where they don't belong.”⁵⁴ His core proposition is that markets are not morally neutral and that by extending the use of market incentives, one ends up devaluing the underlying morals. What this suggests is that rather than attempting to push market valuations to a point where they encompass all aspects of sustainability, some aspects of sustainability are more appropriately dealt with in the realm of norms and values. Replacing civil society with analysts, institutional investors and brokers is not appropriate or particularly effective. This articulation of the “moral limits of markets” is not however the same as suggesting that companies – as significant economic actors with potentially large environmental and social impact – should not be required to behave in a more sustainable manner. Instead, these expectations should be societally and/or politically determined rather than being forced into a market construct.

Second, despite globalization, markets are not a homogenous whole and consequently what is deemed to be material will vary from one jurisdiction to another. Again, the South African example refers. The obligations imposed on South African companies as a consequence of South Africa's history may not be reflected in market valuations but are certainly recognized by investors as part of the cost of doing business in South Africa. In another jurisdiction, without a similar background, companies may be penalized by investors if, for example, they implemented share ownership programmes favouring historically disadvantaged groups. This jurisdictional difference may also explain why some companies in the US resist effective disclosure on climate change-related matters.

SEC Guidance Regarding Disclosure Related to Climate Change (Guidance)

US listed companies are required to disclose material business risks in their filings to the SEC. In 2010 the SEC published guidance that sought to clarify how corporations should disclose business risks associated with climate change in their mandatory filings. This was not well received and the 112th Congress in fact sought to repeal the Guidance. In an American Bar Association review of affected companies, the Bar Association “indicated that disclosing frequently uncertain climate change-related information was often a very speculative process and that there were few, if any, penalties from the SEC for non-disclosure of climate change matters.”⁵⁵ Ceres, an NGO representing a range of institutional investors, has repeatedly (most recently in April 2015)⁵⁶ raised concerns with the SEC about the extent and quality of company disclosure and called upon the SEC to take action, it would seem, to no avail.⁵⁷

Third, as mentioned in the overview of stock exchanges and their role, equity markets value institutions, not systems. To the extent therefore that there are no costs imposed on individual companies through societal demands or regulatory action, “the market” is unlikely to place a value on externalities.

Finally, while markets are capable of measuring material ESG considerations the extent to which an issue is material depends to a certain extent on the time period used to conduct the valuation: the shorter the time horizon, the arguably less likely that particularly E and S considerations⁵⁸ will matter. Extending the investment horizon is therefore critical. The role of markets and market structure in driving short-termism is therefore dealt with section 4.5 on the rise of traders relative to investors.

4.4.6 Other approaches to sustainability and impact

While relatively few exchanges require mandatory sustainability disclosure, an increasing number of exchanges (23 of the 55 SSE members) and other service providers offer some sort of sustainability index

and/or ratings mechanism. To illustrate, the Global Initiative for Sustainability Ratings (GISR) has identified the existence of 358 ESG ratings products from 83 organizations.⁵⁹

The JSE views its SRI Index as an integral part of its sustainability arsenal to the extent that the exchange uses it a mechanism to educate companies about potentially relevant ESG considerations as well as a hook to link companies and investors. Deutsche Börse discloses E, S and G ratings (based on independent provider Sustainalytics assessment of company information across a range of indicators) as well as Carbon Disclosure Project scores for thousands of listed companies.⁶⁰ The Nigerian Stock Exchange (NSE) recently launched a Corporate Governance Rating System that assesses listed companies based on their corporate governance and anti-corruption performance. The NSE CEO has stated that in launching the rating system the exchange hoped that *“Companies would not only set themselves apart from their peers, but also contribute to improving the climate for doing business in Nigeria.”*⁶¹ This approach seems to borrow from the BM&FBOVESPA model where the exchange developed a separate board (the Novo Mercado) for companies that complied voluntarily with higher corporate governance and financial disclosure standards.⁶²

The demonstrated efficacy of these initiatives is variable. Braga-Alves and Kuldeep found for example that companies listed on the Novo Mercado received higher valuations than those listed on the rest of the market.⁶³ Their literature review also showed that this held generally for companies in emerging markets who adopted higher governance standards than the market norm (particularly where governance and protection of investor rights was a concern).⁶⁴ The valuation impact of the Novo Mercado seemed to create a virtuous cycle resulting in more companies listing on the market (and making the necessary governance changes to comply with the listings requirements).⁶⁵ In relation to environmental performance, Toffel and Chatterji found in their study of firm responses to poor environmental ratings⁶⁶ that ratings may compel firms to change their behaviour to reduce “threat of stakeholder sanction”. This seemed particularly to be the case in firms operating in highly regulated industries and/or in firms that could improve performance relatively cost-effectively. Looking at broader sustainability indices however Collison, Cobb, Power and Stevenson found that firms similarly wished to either ensure inclusion in the FTSE4Good Index or avoid exclusion but that it had limited impact on corporate behaviour beyond processes and reporting.⁶⁷

The appeal of ratings and indices for company outsiders (such as investors) is that they potentially assist in addressing an information problem, by reducing the costs associated with collecting the information individually, by gaining access to information that is not otherwise publicly available and providing some “guarantee” of the credibility of the information. They also provide companies with an overview of what sustainable behaviour looks like. There are however a number of challenges. Delmas et al highlight some of the “trade-offs” involved in arriving at a rating (the basis for any index) including:

- Trade-offs between positive and negative screens (does the index exclude certain categories of firms altogether or does it seek to measure best-in-class performance among all firms?)
- Trade-offs between measuring proxies and using actual data – a number of ratings agencies rely on proxies of corporate performance (such as the fact of disclosure or the existence of environmental management policies) rather than actual performance data because of an absence of underlying data and the costliness of gathering it.
- Trade-offs as regards the relative importance of various inputs to arrive at a final rating. Thus a firm may achieve an overall “good” rating (resulting in index inclusion) by performing well enough on some measures to offset poor performance on others.

Windolph also points out that ratings suffer from a lack of standardization and potentially (given their heavy reliance on firm provision of information) a lack of credibility.⁶⁸ Thus, different ranking/rating systems could produce different outcomes for the same firms because they are measuring different things, for different audiences. Interestingly, even investors (at whom many of the exchange sustainability indices are allegedly targeted) state that the indices and ratings are not hugely relevant without greater transparency of underlying data and methodology.⁶⁹ From a company perspective, rankings and fear of exclusion have sometimes (as mentioned above) resulted in behaviour change and provided a framework within which companies can engage on sustainability issues. But the proliferation of ratings and indices has also resulted in “questionnaire fatigue”⁷⁰ and a lack of clarity about what matters.

These challenges should however be viewed as more reflective of an industry that is still emerging, rather than an unsuccessful idea. The process of gathering sustainability data remains a significant cost for investors wishing to pursue sustainable investment strategies. For active investors, having access to sustainability information more cost-effectively than if they were collecting it independently will enable more effective allocation to sustainable corporations. Sustainability indices also enable passive investors to readjust portfolios to align with sustainability outcomes. Increasingly, index providers allow for the development of custom indices that enable investors to construct an index that aligns with their specific sustainability requirements.

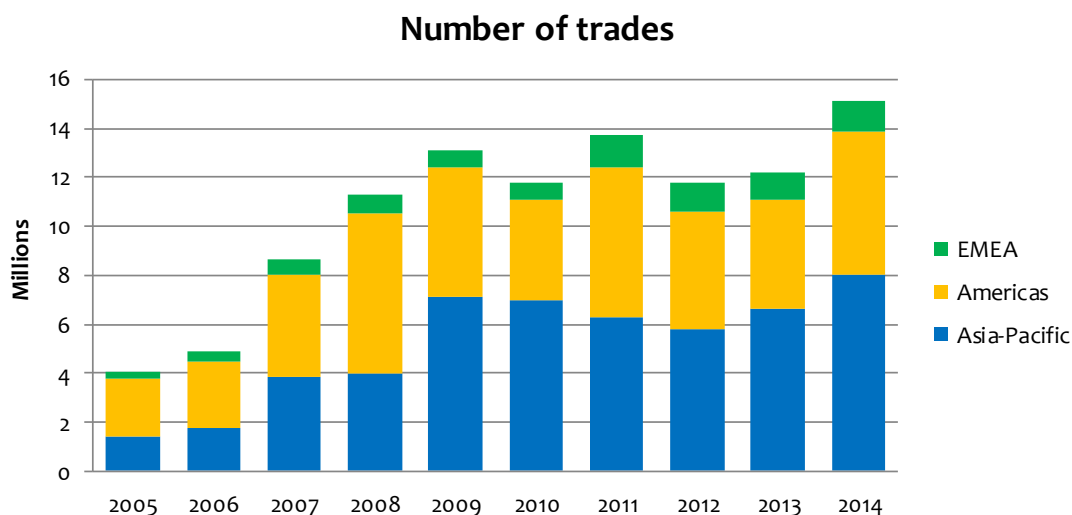
In 2011, Ceres, in collaboration with the Tellus Institute, launched the GISR (mentioned above) in an attempt to improve the quality of the assorted rankings, ratings and indices and enhance stakeholder understanding of the relevance of the vast array of tools to their specific needs. As part of this, GISR provides an accreditation of sustainability measurement methodologies through the application of a framework comprised of 12 ambitious principles, focused on process and content. These principles aim to address some of the problems highlighted above, thereby hopefully enhancing the quality and usefulness of sustainability rankings, ratings and indices to both investors and corporates.

4.5 Increase in traders relative to investors

Turning now to the second challenge to sustainability, sustainability advocates and others interested in the long-term health of markets have identified the rise of a “transactional culture” as undermining long-term investment behaviour. Kay bemoans the “hyperactivity” of markets while the Aviva Roadmap talks about the “*incentive for exchanges to create inducements for trading activity*”.⁷¹ The Sustainable Stock Exchanges Initiative in its 2014 Report on Progress recommends disincentivizing “*short-term transactional approaches to investment*” while Hazel Henderson argues more fundamentally that “*all progress ... in shaping more responsible corporate and financial practices can be undermined if the market’s underlying plumbing and structure remain unsound*”.⁷²

4.5.1 The rise of high frequency trading

There is no doubt that trading activity on markets has increased dramatically over the last few years and that a large proportion of this activity is related to trading for the sake of trading, rather than investing. One (highly demonized) source of this new trading activity is high frequency trading (HFT), a catch-all term for a range of trading strategies enabled through a combination of technology improvements (that have the effect of reducing latency), trading fragmentation across a variety of trading venues and new asset classes such as exchange traded funds and equity derivatives.



While there is no single regulatory definition of HFT, there is some agreement that HFT is typified by very short holding periods; rapid submission and cancellation of large numbers of orders; use of sophisticated algorithms to analyse data and manage trading activity; ending the trading day flat (not holding shares); and use of low latency strategies including collocation.^{73,74} The extent of HFT across various markets is summarized below:

- In the US, HFT grew from almost zero in 1995 to over 70% of equity volume traded in 2009 (Zhang, 2010) before dropping to just over 50% in 2012.
- In Europe, the European Securities Market Authority (ESMA) recently concluded that in 2013 HFT accounted for between 27% and 43% of value traded.
- In Canada, the Investment Industry Regulatory Organization of Canada (IIROC) estimated that HFT was responsible for just over 30% of value traded in 2013.⁷⁵
- In Australia, regulators estimated that HFT amounted to 27% of value traded in 2012.
- In Japan, the Japan Exchange estimates that HFT had grown from 17% to 26% of value traded in the nine months from September 2012 to May 2013.⁷⁶
- Conversely, in other Asian-Pacific markets, such as Hong Kong and Singapore, HFT volumes are estimated to be at 20% or lower (2012).⁷⁷

Researchers, regulators and market commentators are divided on whether HFT is “good” or “bad” for markets overall. On the positive side, its supporters argue that HFT reduces bid-ask spreads, improves liquidity, enhances price efficiency and reduces volatility. Norges Bank Investment Management (manager of the Norwegian Sovereign Wealth Fund) for example in their 2013 review on HFT is unwilling to conclude that HFT is necessarily good or bad (and point out that more work needs to be done on defining market quality) but add that “*market-making entities (HFTs or otherwise) perform an important service in well-functioning markets.*”⁷⁸ On the other side, HFT critics point out that the presence of HFT can result in overreaction to price information, increase intraday and cross-market volatility, and most recently that certain types of HFT behaviour (namely ultra-fast activity as evidenced by the number of limit orders that are posted and cancelled within a 100 milliseconds) in fact reduces quoted and effective spreads and market liquidity.⁷⁹ Other concerns about HFT and algorithmic trading more generally are:

- They enhance the potential for systemic instability (namely the Flash Crash of 2010 in which the Dow Jones lost 9% of its value in just a few minutes or the Knight Capital incident in which an algorithm error resulted in the HFT firm losing US\$440 million in 45 minutes);
- Their increased presence in markets reduces investor diversity, thereby harming market quality;⁸⁰
- The emphasis on speed as a source of trading advantage results in socially useless investment in ever lower-latency technologies and algorithms; and
- They create the perception that markets are rigged resulting in general loss of investor confidence in markets and consequent withdrawal, causing further declines in market quality.

These different and apparently contradictory conclusions are understandable when one remembers that without an agreed definition of HFT, different studies will capture different types of activity under the heading of HFT. For example, just like HF traders, brokers trading on behalf of institutional investors will deploy their own high-speed trading algorithms collocated next to exchange trading engines.⁸¹ Additionally, HFT trading strategies vary significantly, with some regarded as positive and others as “predatory”. Finally, as indicated, the extent of HFT varies across markets with the US having the highest levels of HFT activity to almost non-existent HFT in some Asian markets; these differences are at least partly attributable to market structure considerations explored in more detail in the box below.

A closer look at US markets

As mentioned in section 3, high levels of trading fragmentation, opacity and complexity typify US markets. This is largely the consequence of successive regulatory changes that sought to encourage competition and economic efficiency and yet maintain some concept of a “national” market. Market participants responded by creating a range of alternative execution venues, different pricing structures, new order types (aimed at enabling trading strategies but with limited investment relevance), collocation and low latency data feeds, all aimed at attracting trading activity and taking advantage of the regulatory framework. This resulted in a reduction in the amount and quality of trading and therefore price formation happening on “lit” venues, the enablement of trading strategies that “feed off” institutional investor trading information, thereby further deteriorating investor confidence,⁸² an enhancement of systemic instability, and a potential subsidization of non-viable exchanges that may serve only to further fragment markets. According to Dave Lauer, this market “is simply being driven along in a latency race by poor regulation and structural inefficiencies”.⁸³

In 2010 the SEC reviewed the US equity market structure⁸⁴ looking at (among others) its impact on long-term investors and ability of companies to raise capital and the nature of HFT activity in the markets. In “The New Stock Market: Sense and Nonsense” the authors conclude that electronic front running, slow market arbitrage and dark pool mid-point order execution are on balance sufficiently harmful that it may be worth introducing measures to reduce the time advantage HFTs have in accessing information before others. Jeff Sprecher, head of the Intercontinental Exchange (ICE) derivatives markets, and the new owner of the NYSE, is a long-standing critic of US equity market structure. He recently announced that the NYSE would voluntarily reduce the number of order types the exchange offers and called on other exchanges to do the same.⁸⁵ (Conversely however, the ICE-owned exchange has also been criticized for seeking permission to introduce new order types that some have described as ‘an advanced HFT order type ... the queen of the order types’).⁸⁶ Finally, Brad Katsuyama of IEX Group has established a new trading venue that seeks to offer a “balanced, simplified and transparent market model” by rejecting maker-taker pricing, limiting the number of order types and implementing a “time buffer” that “neutralizes” certain HFT trading strategies.⁸⁷

4.5.2 Short-term investors and corporate short-termism

Despite media and other emphasis on HFT, at least as relevant for purposes of the sustainability discussion are the short-term trading strategies of a subset of institutional investors referred to as “transient institutional investors”. Dallas, referencing the work of Bushee, defines these as institutional investors with a “short time horizon which is reflected in high portfolio turnover, high use of momentum trading and highly diversified portfolios” and argues that it is the presence of these shareholders that tends to pressure company managers towards short-termism.⁸⁸ Rappaport (2005) argues that “the shorter the holding period, the more the beliefs of others rather than long-term fundamentals become central to investment decisions. High turnover thus sets the stage for short-term earnings-based decision making or momentum-motivated trading, which is not at all concerned with earnings.” Matsumoto (2002) likewise concludes that firms with a large number of transient investors are more likely to manage earnings in order to meet analyst and investor expectations.⁸⁹ Likewise Brochet, Luomioti and Serafeim found that firms that focus on the short term tend to have a more short-term oriented investor base and that these investors tended to reinforce a short-term focus within the firm. Thus, there is clearly a link between corporate short-termism and investor short-termism.

For some, the very high levels of liquidity and turnover are themselves the sources of investor and corporate short-termism. Kay for example argues that the presence of high liquidity reduces incentives for investors to engage with companies (exercise “voice”) as it is easier for them to “exit” and results in price noise rather than value information. This may however be an oversimplification. Serafeim recently concluded that firms that engage in integrated reporting (IR) practices show a more long-term investor base and fewer transient investors⁹⁰ suggesting that a firm attracts the investors it deserves. Likewise, Roe⁹¹ identified instances where institutional ownership is positively associated with greater investment in research and development and innovation suggesting that a more hyperactive market structure does not inevitably result in greater corporate short-termism.⁹² There also appears to be a link between broader financialization of economies and investor and corporate conduct. Companies in more advanced economies (such as the US and the UK) are spending more on share buybacks and dividends than on new investments⁹³ prompting the Chairman of asset manager Blackrock to express concern that “When done for the wrong reasons and at the expense of capital investment, [returning cash to shareholders] can jeopardize a company’s ability to generate sustainable long-term returns.”⁹⁴ Kay raises similar concerns about corporate and investor conduct in the UK.

Long-termism in short-term markets – the case of Unilever

On the day that he became CEO of Unilever, Paul Polman announced that the firm would no longer issue earnings guidance or quarterly reports because the company intended to take a longer-term view. He says that the share price dropped 8% in reaction to the news, but that over time the firm has attracted new shareholders who understand the longer time horizons. He makes the point in a recent Washington Post article “if you don't give guidance, or quarterly reporting, then you also tend to attract the right shareholder base. You get into a better rhythm to develop the right long-term relationships and the right communication.”⁹⁵

4.5.3 Slowing down the markets

Regulators around the world are looking more closely both at issues of market churn more generally and HFT more specifically. As regards HFT, Germany has adopted legislation that ensures greater regulatory

oversight of HFT activity through the right to review trading algorithms and trading strategies (including the right to prohibit some of these) and to penalize excessive HFT activity.⁹⁶ The US review of equity market structure is still under way but initial efforts are aimed at strengthening market infrastructures (systems, processes, etc.) and ensuring greater oversight of trading activities.⁹⁷ Regulators in Australia are taking a more classic risk-based approach to HFT focusing on the extent to which HF traders engage in already prohibited manipulative market activity.⁹⁸

4.5.4 Investors, traders and sustainability – a summation

The evidence on whether or not more frenetic market activity and/or shorter-term investment horizons causes corporate short-termism is somewhat mixed. Dealing with the latter part first, while it seems clear that investors with a short investment outlook may place pressure on corporations to behave in a short-term fashion, it also appears that companies that take a longer-term view are able to attract a different type of (longer-term) investor. It is also not clear to what extent the financialization of economies drives short-termism and to what extent short-termism drives financialization. However, this uncertainty about cause and effect is not an excuse for inaction. It is undoubtedly true that the greater the presence of short-term investors (or even simply traders), the greater the pressure on all market participants to shorten investment horizons, reducing the likelihood of the incorporation of even material ESG issues into investment decisions and associated market valuations. Markets will consequently value only short-run performance, which is likely to be damaging not only to the companies themselves but economies and society more broadly (as per Kay and Fink above). Furthermore, markets that are focused primarily on the short term will almost certainly excessively discount even price-relevant ESG information limiting further the role that markets are able to play in driving sustainable behaviour. Thus, markets that focus only on the short run cannot be said to be sustainable in any form.

5 Reforming stock markets

As argued in this paper, equity markets will not on their own ensure the necessary transition to a more sustainable growth path, even if all of the identified barriers to long term investing and enhanced understanding of ESG issues are addressed (some of which, like refocusing investor and corporate incentives on the long term are well covered elsewhere by the likes of Kay, Aviva, etc.). Interventions that shift the materiality calculus of ESG issues (namely policies or social pressures that require companies to carry the costs of their ESG impact) are absolutely essential. That said, exchanges and securities markets regulators are a necessary part of the puzzle in encouraging more sustainable business and investor practice and ensuring that market structure promotes, rather than hinders, sustainable investment.

5.1 Encouraging a shift to sustainability

5.1.1 IOSCO to develop international guidance on sustainability disclosure and encourage adoption

This recommendation may seem a somewhat counter-intuitive given the absence of a link between requiring sustainability reporting and corporate performance. However, as argued earlier, as there is clear evidence that ESG issues are – context dependent – relevant for assessing future financial performance, companies should be required to disclose financially material ESG information. The International Organization of Securities Commissions (IOSCO) must drive this both to set an international standard and to assist exchanges in competitive jurisdictions that are reluctant to “move first”.

While the Ceres proposal (given the extensive consultation that preceded it) is an attractive reference point for a framework, its definition of materiality arguably extends too far to be genuinely financially relevant. Thus, the IIRC framework (with its emphasis on integrated thinking which at least suggests behaviour change), coupled with the emerging SASB or GRI indicators is probably the best place to start. Exchanges should work with their investment communities and listed companies to determine what types of disclosure are relevant in their jurisdiction. Given the link to financial performance and subsequent valuation, reporting should be mandatory in the same way that financial reporting is, after an initial phase-in period, with an assurance requirement for the largest listed companies. This requirement of assurance is to enhance the credibility of the reporting and enable investors (and other stakeholders) to rely on company assertions about what they are doing. Finally, and perhaps most controversially, once adopted, there should be consequences for companies that do not comply – either in the form of penalties or potential suspension of the listing.

The adoption of this recommendation not only allows investors to properly incorporate all relevant information into their valuation and investment decisions but expresses a view to corporations that sustainability considerations matter for financial performance.

5.1.2 Exchanges to work with investors to determine sustainability information requirements

To the extent that exchanges are producing sustainability indices they need to be clear on what they are attempting to accomplish through these. It is likely that in most instances the target audience is investors, in which case the exchange must focus on identifying investor-relevant sustainability information. This again speaks to the point of materiality. Recognizing differences in definitions of sustainability, exchanges should, where feasible, offer investors the ability to customize indices in accordance with their specific sustainability requirements. Exchanges should track and publish the amount of money tracking these indices either directly or as an initial screen. Exchanges (or their index

providers) should adhere to the GISR principles in their index design and – where it makes sense – collaborate with other organizations around data collection (for example, use Carbon Disclosure Project data for purposes of assessing carbon emissions). Exchanges could also use the indices as an entry point for engagement with both listed companies and investors around sustainability, though this may be more possible in some jurisdictions than others. Finally, where possible (i.e. the data is not provided confidentially) the underlying information should be made freely available for academic purposes to progress research into and understanding of the link between sustainability and corporate performance.

5.2 Reducing market freneticism

5.2.1 Adopt specific regulatory interventions to ensure the resilience and quality of markets

There is increased recognition that certain forms of trading activity are not only irrelevant for the real economy but potentially contribute to an overly short-term focus. The high presence of traders relative to investors has also resulted in a shift in investment to non-value generating activities (such as the ever-increasing race to reduce latency) and potential destabilization of markets. Although a one-size-fits-all regulatory response is unlikely to be suitable or possible given market disparities, there are certain minimum standards that can be adopted across all markets.

- First, all firms interacting with public markets should be subject to some regulatory oversight. For example, HFT firms as proprietary trading firms have historically been exempt from market regulation in some jurisdictions – this must change.
- Second, given that the trading behaviour of HFT firms and other forms of algorithmic trading introduce high volumes of largely informationally irrelevant data, jurisdictions could either follow the Italian example of introducing a tax on orders where the order-to-trade threshold exceeds a certain limit or set specific limits on order-to-trade thresholds.
- Third, if there is an acceptance of the proposition that trading for the sake of trading, rather than investing, is ultimately undesirable, then regulators should examine the imposition of a financial transaction tax (FTT) on trading of equities and equity derivatives. Implementation varies but an FTT generally is a very small tax (less than 1% of the value of the transaction) imposed when buying or selling shares. The objective of the tax would be to reduce speculative trading relative to investing by increasing the cost of the trading relative to buying and holding. It is not possible to design a one-size-fits-all tax as different jurisdictions will have different existing tax structures, some of which already tax trading behaviour either directly or indirectly, and the role of HFT will vary from one market to another depending on underlying market structure. Certain exemptions (for example for genuine market makers) are probably desirable but these need to be structured in such a way so as to avoid their exploitation. A recent Tax Policy Center Discussion Draft from the Brookings Institute provides a good overview of the relative pros and cons.
- Fourth, algorithms must be subjected to proper testing before they are deployed in markets to avoid a potential destabilization of markets.
- Fifth, exchange pricing models should be subject to regulatory approval with a clear indication of the type of market activity that they seek to encourage. Maker-taker pricing models that pay for order flow should not be permitted.
- Sixth, in the US specifically, the number and extent of order types should be reduced dramatically and more broadly, new order types should be subjected to regulatory scrutiny with a specific emphasis on the behaviour that these new market types facilitate.

- Seventh, exchanges/regulators should ensure non-discriminatory access to exchange data and collocation facilities (i.e. they should ensure that certain types of traders are not privileged above others in getting access to price information or ability to trade).

5.2.2 Regulators to push for improved understanding of market linkages and definitions of market quality

Much of the push-back against greater regulation of markets is rooted in the rhetoric that this is in some ways not different to what we have seen in the past, only computerized, and that the result is better markets, as measured by the cost to trade. The difficulty with this argument is that it is both true and untrue. There are elements of the familiar (at the end of the day, entities are still buying and selling shares) and costs to trade seem to be on the decline, but transactions now happen in micro-seconds, across asset classes and increasingly fragmented markets, with little understanding of what this emerging structure does to the core function of equity markets, namely capital raising and capital allocation.

The SEC in its review of the US equity market structure rightly identifies market quality and market quality metrics as one of the review issues. It is critical that securities regulators have a meaningful set of metrics that they are able to track on an ongoing basis to determine what is happening to market quality overall. This also requires agreeing on a definition of market quality and a recognition that market quality is not just about secondary market activity but also the interaction between the state of the secondary market and the primary market. Any market structure changes will necessarily involve a trade-off between competing objectives (for example, in the US, the price to trade (as represented by the bid-ask spread) has declined dramatically, but with detrimental impact on depth of liquidity).⁹⁹ Given the critical importance of stock exchanges, identified market quality metrics must prioritize the capital allocation and investment functions of markets. In the same way that the IMF discussion note referred to in section 2 suggests that too much financial market activity may undermine economic growth, it is possible for example that there is in fact such a thing as too much liquidity. Establishing not just what to measure but getting a better handle on the systemic feedback loops is central to discussions of not just sustainability but broader systemic stability.

There are therefore two elements to this recommendation: the first is improving the understanding of the relationship between primary and secondary market activity and the interplay of various secondary market actors. This requires a systems-thinking approach that moves beyond the simple cause-and-effect analysis that has been done to date. We are in an era of big data and mass computing capability which makes this more sophisticated analysis possible. To a certain extent, this work should be driven by national securities market regulators (such as the SEC), but given the cross-border nature of much trading activity, international coordination is also required. This could be done through IOSCO but may also fall under the Financial Stability Board with its stability mandate.

The second element entails developing market quality indicators that explicitly recognize both the primary and secondary market functions. IOSCO should work with exchanges and securities market regulators (this is potentially a good role for the World Federation of Exchanges Sustainability Working Group) to define these metrics. These should be adopted in national jurisdictions and regularly tracked. Exchanges should be required to report on these (and other relevant) metrics as part of their own integrated reporting. These could potentially be incorporated as part of exchange licensing requirements to ensure ongoing commitment to maintaining market quality.

5.2.3 National regulators to carefully consider competition/market quality trade-offs

One of the consequences of the shift of exchanges to for-profit status was greater pressure on regulators to particularly open the trading part of the exchange business to competition. The arguments in favour are that this provides “price discipline” on otherwise monopoly service providers and that it allows for greater innovation. The challenge with this argument (particularly the latter part) is that it is not exactly clear that recent innovation in trading has contributed positively to the core functioning of equity markets. The growth of HFT is largely a consequence of fragmenting trading across a variety of execution venues. Regulators must therefore carefully consider whether there are sufficient benefits associated with allowing off-exchange execution (whether in the form of execution-only platforms or broker internalization) to offset the costs of trading fragmentation. Part of this review process should include a careful consideration of the proposed business model of the new entrant – how does its presence contribute to overall market quality (the definition of such is therefore a necessary precursor)? Where regulators are concerned about monopoly pricing, they can for example, as in Hong Kong, require pricing changes to be approved by the securities regulator/licensing authority.

6 Conclusion

This paper has in fact ignored the most important role that markets have to play in addressing the sustainability challenge, namely providing mechanisms for funding future sustainability needs. This is partly because it is central to what markets do and to the extent that if exchanges can list new products that meet funding requirements, they will do so, whether this takes the form of climate bonds, or companies that manufacture inputs to renewable energy sources. It is, in many regards, business as usual. Instead, this paper sought to tackle the extent to which exchanges as stand-alone entities are able to encourage a shift to more sustainable behaviour by investors and companies (somewhat, though limited) and the extent to which markets, as they are evolving, are able to continue to play the important funding role that they have in the past.

In an ideal future a sustainable stock exchange is one where the companies that are listed on it (including the exchanges themselves) recognize their responsibility not just to shareholders but to society at large – including future generations and while there are different investors with different time horizons and different perceptions of corporate performance, the relative balance of traders to investors will have shifted with more investors focusing on the longer term. This may not occur on the exchanges of today and may instead be found on new exchanges that begin from a sustainability starting point and develop their business models accordingly. This will only happen however, if the prevailing sense is that the economy as currently structured is unsustainable. Markets and market actors have a role to play in ensuring a sustainability shift and it is time to recognize and require this. Markets in and of themselves will not make this shift happen. Ultimately, *“If society wants companies to rebalance the respective interests of shareholders and other interested stakeholders ... then it is society – through its governments – that must reframe their respective obligations. Governments, not companies, have the democratic mandate to intervene in order to shape market forces”*.¹⁰⁰

Glossary

Algorithmic trading:	the use of computer programmes, following a pre-defined set of trading criteria, to place orders in the market and trade.
Bid-ask spread:	the difference between the highest price that someone is willing to pay to buy a share and the lowest price at which someone is prepared to sell the share.
Collocation:	the provision of a facility whereby the trading hardware of market participants or users of market data is located in as close a physical proximity as possible to the exchange trading engine. The objective is to reduce the time between the time of receipt of information from the trading system and submission of information to the trading system.
Latency:	the time between the moment and signal is sent and it is received.
Market maker:	firm that provides both buy and sell orders for a specific share or set of shares in order to ensure liquidity in the share. Market makers earn their profits from the bid-ask spread (the difference between the price at which they buy and the price at which they sell).
Momentum trading:	trading a stock that is trending in a particular direction in the expectation that the trend will continue. This strategy is not based on company fundamentals but rather on short-term expectations of the share price movement.
Price efficiency:	the extent to which share prices reflect all available information about the company that has issued the shares.
Volatility:	the extent to which a share price moves up or down over a short period of time relative to a benchmark.

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- ¹⁵ See SSE website for current list of members: <http://www.sseinitiative.org/sse-partner-exchanges/>
- ¹⁶ SSE website: <http://www.sseinitiative.org/about/>
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Inquiry: Design of a Sustainable Financial System

International Environment House

Chemin des Anémones 11-13

Geneva,

Switzerland

Tel.: +41 (0) 229178995

Email: inquiry@unep.org - Twitter: @FinInquiry

Website: www.unep.org/inquiry/