

The Limits of Carbon Disclosure: Theorizing the Business Case for Investor Environmentalism

*Adam Harmes**

Introduction

Frustrated with the slow pace of government policy and international negotiations, many environmentalists have sought to promote climate change mitigation through various forms of private governance and corporate social responsibility (CSR). Prominent in this strategy has been a growing focus on using the power of institutional investors—such as mutual funds, pension funds and insurers—to create market incentives, in the form of share price performance, for firms to reduce their carbon emissions. This strategy is evident in the growth of various socially responsible investment funds (SRI or “green funds”) and in the emergence of numerous investment-focused NGOs and initiatives such the Coalition for Environmentally Responsible Economies (Ceres) with its Investors Network on Climate Risk (INCR) and Global Reporting Initiative (GRI), the Institutional Investors Group on Climate Change (IIGCC) and the Carbon Disclosure Project (CDP).

At the heart of these efforts is an assumption that the power of financial markets can be used to create market incentives for firms to reduce their carbon emissions. To promote these incentives, these initiatives have sought to outline a “business case” for climate change mitigation by better identifying and measuring a number of key variables of “climate risk”; that is, costs resulting from climate change which are thought to create genuine financial risks for firms and investors. Once these risks were identified, the hope was that institutional investors would promote climate change mitigation through a two-stage process. The first stage involves using their power as shareholders to pressure firms to disclose their exposure to climate risks. In the second stage, once this carbon disclosure occurs, institutional investors incorporate climate risks into their in-

* For their insightful comments, I would like to thank three anonymous reviewers as well as Eric Helleiner, Matthew Paterson and other participants at the Centre for International Governance Innovation workshop on Finance Standards and the Environment at the University of Waterloo.

vestment decision-making and promote climate change mitigation by switching their investments from poor to good climate performers (known as “investment switching”) and by putting direct pressure on corporate managers (known as “environmental voice”). While the carbon disclosure initiatives also see a potential for their information to be used by venture capitalists to fund clean-tech development, as well as by NGOs and regulators, their primary goal is for disclosed information to be used by investors to create real financial incentives for firms in the form of share price performance. Noting this goal, Kolk et al. observe that carbon disclosure initiatives seek to “translate corporate carbon profiles into assessments of risks and market opportunities with clear financial implications for firms and investors. Indeed, this constitutes the central logic behind the carbon disclosure movement.”¹

Reflecting this central logic, various academic studies and reports by investor environmentalism initiatives have sought to empirically assess the strategies of institutional investors and in particular of carbon disclosure as a tool for promoting climate change mitigation. In doing so, the dominant view is that there is a “new momentum” towards investor environmentalism and that this will soon translate into the creation of genuine market incentives for firms.² However, what is surprising about many of these accounts, as well as the reports issued by the various initiatives, is that the underlying theoretical assumption—that climate change creates financial incentives for institutional investors—is rarely examined in detail. On the one hand, there is little attempt to disaggregate and assess the actual incentives created by the different variables of climate risk. On the other hand, there is also little attempt to disaggregate and assess the different types of institutional investors and the differing constraints that they face.

To address this gap in the literature, the purpose of this article is to theoretically assess the two main assumptions that underpin investor environmentalism through carbon disclosure: the power of institutional investors and the “business case” for climate change mitigation. In doing so, it argues that the potential of using institutional investors to create financial incentives for climate change mitigation, in the form of share price performance, has been considerably overestimated and that there is not even a strong theoretical case for why carbon disclosure should work in this regard. This is argued to be the case owing to the structural constraints faced by most institutional investors as well as a fundamentally incorrect assumption about climate change, as a form of market failure, which underpins these initiatives. The primary argument made in this article is thus a theoretical one, with a systematic assessment of the empirical evidence being beyond its scope. However, by drawing on the theoretical analysis, the article also suggests some insights for future evaluations of the empirical evidence. Not considered in this article are the more secondary goals of the carbon

1. Kolk et al. 2008, 728–729.

2. Labatt and White 2007; and CDP 2008.

disclosure movement including the use of disclosed information by investors to promote adaptation to climate change, by venture capitalists to fund clean-tech development, by NGOs to “name and shame,” or by governments to assist with regulation. While important, such uses lie outside the primary goal of investor environmentalism through carbon disclosure—to create market incentives through share price performance—and, thus, remain outside of the scope of this article.

Assumption 1: The Power of Institutional Investors

The first assumption underpinning the use of institutional investors to create financial incentives for climate change mitigation is based on their growing power as shareholders and the extent to which they create the structural context within which corporate managers operate. Prior to the 1980s, the “modern” Anglo-American corporation, as seminally outlined by Berle and Means, was characterized by the separation of ownership and control where a large number of small shareholders owned the company with control delegated to corporate managers.³ To ensure that management acted in the interests of shareholders, the latter would elect a board of directors to oversee the former. However, as Useem notes, the “scattering of stock among thousands of small owners undercut the capacity of shareholders to oversee their enterprises” and this led to an era of managerial autonomy.⁴ Reinforcing this autonomy was the fact that most boards were comprised of management nominees who tended to defer to the Chief Executive Officer (CEO).

By the early 1990s, the modern corporation began to change with the growth of institutional investors whose assets grew from US\$ 3.2 billion to over US\$ 24.4 trillion between 1981 and 1995⁵ and to US\$ 40.3 trillion by 2005.⁶ In terms of corporations, this led to a fundamental shift in the nature of corporate ownership within the Anglo-American economies. In the US, for example, institutional stock holdings rose from 16 percent in 1965 to 46 percent in 1990, while individual holdings declined from 84 percent to 54 percent over the same period.⁷ Rather than being owned by a large number of small shareholders, corporations were increasingly owned by a small number of large shareholders. This concentrated share ownership became evident in the 1990s when institutional investors began to directly intervene in corporations to demand greater “shareholder value.” They did so by demanding the election of more independent directors, the greater use of stock options to link management pay to share price performance, and the firing of underperforming CEOs.⁸

3. Berle and Means 1932.

4. Useem 1996, 5.

5. Useem 1996, 25.

6. Gonnard et al. 2008, 3.

7. Useem 1996, 25.

8. “Getting Rid of the Boss,” *The Economist*, 6 February 1993; “Share Options: Share and Share Unlike,” *The Economist*, 7 August 1999; and Harmes 2001.

Institutional investors exercise their influence over corporations in two main ways of interest to environmentalists. The first is their ability to put direct pressure on corporate managers through the use of “voice.” Institutional investors can exercise “environmental voice” by lobbying corporate managers and boards, voting on shareholder proposals and by putting forth their own shareholder proposals. The second way that institutional investors can exercise environmental influence is through the use of “exit” in the form of “investment switching.” Investment switching is designed to create structural market incentives for firms, through their share price performance, and includes screened approaches that avoid investing in certain sectors, investing in firms developing environmental technologies, and switching investments from poor to good environmental performers. Recognizing these forms of influence, a 2007 study argued that “[b]y virtue of the size and global reach of their investment portfolios, managers of institutional portfolios . . . have the power to move carbon governance and improved carbon strategies . . . into the mainstream of investment decision-making.”⁹ In a similar fashion, Paul Dickinson, the executive director of the CDP, noted that “[t]his collective market power is proving to be an effective tool in encouraging corporations to take responsibility for the environmental costs and risks of their activities.”¹⁰

Assumption 2: The Business Case for Climate Change Mitigation

The second assumption underpinning the use of institutional investors to create genuine financial incentives for climate change mitigation is based on the idea that climate change creates financial risks for firms and that disclosure of these risks will create market incentives for institutional shareholders. As Labatt and White argue, “[i]t is evident that climate risks and opportunities are now embedded, to varying degrees, in every business and investment portfolio.”¹¹ Reflecting this assumption, the CDP and other investment-oriented NGOs have sought to identify the specific material risks for firms, and thus investors, that result from climate change. As the CDP Canada observes, “[c]arbon risk is the function of four primary variables: regulatory risk; exposure to the physical effects of global climate change; product risk; and risk to reputation.”¹² The CDP also identifies energy costs and, in the US, the additional variable of exposure to climate change litigation. Each of these six variables is seen as creating real financial costs for firms and thus real market incentives for institutional investors to incorporate climate change into their investment decision-making. Also important is the idea that, while some climate risks are more long-term in nature, the assets managed by most institutional investors, pension funds in particular, are based on retirement savings that have an inherently long-term horizon.¹³ In

9. Labatt and White 2007, 112.

10. Cited in Allianz 2006.

11. Labatt and White 2007, 135.

12. CDP Canada 2006, 30.

13. Amalric 2006.

addition to containing retirement savings, a long-term focus also stems from the fact that a growing proportion of funds are passively managed in that they simply buy and hold shares in the firms that make up prominent stock market indexes.¹⁴ The implication is that institutional investors are able to take into account longer-term climate risks.

Therefore, for proponents of investor environmentalism, the problem is not that market incentives to promote climate change mitigation do not exist. Rather, the problem is seen as an informational one in that many investors are not aware of the importance of climate risks and many firms have not properly measured and disclosed these risks in a way that can be used by investors. As the CDP argues, “[i]t is often said that a business can only manage what it measures. Since 2000, the [CDP] has, on behalf of institutional investors, challenged the world’s largest companies to measure and report their carbon emissions, integrating the long-term value and cost of climate change into their assessment of the financial health . . . of their business.”¹⁵ In doing so, the CDP sends out an annual disclosure request asking firms to disclose their carbon emissions and to assess their expected cost exposure related to the climate risks identified above.

Taken together, the CDP and other investor initiatives emphasize the power of institutional shareholders and the reality of climate risk as the key assumptions underpinning the case for investor environmentalism through carbon disclosure. Bringing these together is the assumption that the disclosure of climate risks by firms will create market incentives for investors to promote climate change mitigation. As Robert Nash, the capital accountability officer for the World Wildlife Fund stated, “[o]ur goal is that disclosure of carbon liabilities will play an important role in providing market conditions and incentives for investors to support and drive a low-carbon economy.”¹⁶

Assessing the Power of Institutional Investors

While most accounts of investor environmentalism highlight the growing power of institutional investors and the structural constraints they create for firms, few examine the similar constraints faced by many fund managers. For example, the CDP tends to group all their participating investors into a homogeneous group seeking to promote climate change mitigation. Hinting at this view, the CDP director noted that: “The success of CDP shows how powerful targeted philanthropy can be . . . the project costs less than £500,000 per annum to run, but leverages [US]\$ 33 trillion in assets, effectively turning each [US]\$ 1 donated into [US]\$33 m[illion] of investor dollars speaking out on the issue of climate change.”¹⁷ There are two clear implications of this and similar statements

14. Pfeifer and Sullivan 2008, 252.

15. CDP 2008, I.

16. Cited in ENDS 2009.

17. Paul Dickinson, “The Power of Responsible Investment,” *The Guardian*, 6 November 2006.

by other NGOs. The first is that a significant and increasing number of institutional investors are actively promoting climate change mitigation. The second is that the sheer number of investors and assets involved means that, on its own, a genuine market incentive is being created for corporations to promote climate change mitigation. However, while few would dispute their growing power, it is necessary to disaggregate the different types of institutional investors and assess the specific incentive structures that may, or may not, allow them to take climate change into account.

The first category of institutional investors is investment companies which often appear to the public as mutual fund companies. Many investment companies sell mutual funds to the public and/or manage institutional funds on behalf of pensions, insurers and foundations. For example, while many pension funds do maintain their own in-house managers, a growing number of them delegate the management of their portfolios to external investment companies to the extent that, in 1997, the World Bank estimated that 60 percent of all pension fund assets were managed externally.¹⁸ Thus, it is the investment companies which provide the bulk of fund management services and are the largest group which actually conducts asset selection. Moreover, this asset selection generally takes place through one of three main strategies, each of which creates a different set of constraints for fund managers.

The most prominent strategy is known as “active investing” and it is based on the premise that, by conducting detailed research to find information others have missed, a fund manager can outperform the market by investing in undervalued companies. Actively managed funds charge higher fees based on this promise of higher performance. The idea is that active managers will locate bargain stocks and then buy and hold them until the market eventually realizes their real worth. For environmentalists, climate risk represents information that markets are currently ignoring and that, by taking it into account, fund managers will increase their performance by switching investments from poor to good environmental performers. As noted earlier, a fundamental assumption here is that, while many climate risks are long-term in nature, actively managed funds are generally made up of retirement savings which have long-term horizons. This means that a fund manager could buy and hold companies which are working to mitigate climate risks now in anticipation that, as climate costs increase over time, such companies will outperform their competitors.¹⁹

The problem with this assumption is that it ignores how the competitive nature of the investment industry imposes a short-term horizon on fund managers.²⁰ As the International Monetary Fund (IMF) observes, “institutional investors have a shorter time horizon than do individuals.”²¹ Thus, while the money managed by investment companies may have long-term horizons,

18. World Bank 1997, 128.

19. Pfeifer and Sullivan 2008, 252.

20. NRTEE 2007.

21. IMF 1990, 7.

the fund managers themselves often do not because of the way that competition within the industry puts them under intense pressure to attract and retain customers by making sure their funds perform strongly in the short-term.²² Within the funds themselves, these competitive pressures have become formalized in institutional structures that reinforce short-termism. Important here is that “the performance of most money managers is evaluated at least once a year, and usually every few months.”²³ This pressure to achieve strong short-term performance also applies to the fund managers who are competing to manage the institutional assets of pensions, insurers and foundations. In terms of the former, Davis notes that most external managers of pension funds are employed under three year contracts with performance evaluations occurring as frequently as quarterly in the United Kingdom and even monthly in the United States.²⁴

The growing influence of institutional investors means that these short-term pressures are transferred to corporate managers. Commenting on this, Andrew Sigler—speaking on behalf of the US Business Roundtable—noted in US Senate testimony that:

... the dramatic change in corporate ownership from individuals to institutions currently works against the ability of companies to manage for the long-term. Where once we had patient investors interested in our long-term growth and development, today we are under constant pressure from institutional investors to boost the price of our company’s stock and “provide immediate value to shareholders.”²⁵

Thus, many of the changes to corporate governance prompted by institutional investors—such as the greater use of stock options—are the cause of, rather than the solution to, the short time horizons of corporate managers.

For investor environmentalism, there are two main implications of these short-term pressures. The first is that, as with corporate managers, fund managers operate in a structural context which severely limits their ability to take into account any non-market investment criteria. If a fund manager did so and their fund underperformed against their peers, even if only in the short-term, the fund manager would be out of a job. This means that active fund managers are simply not able to take climate change into account for non-market or ethical reasons. The second implication is that, even if financial costs do arise from climate change, it is very difficult for active managers to take them into account if they are only realized over the long-term. Highlighting this problem, Canada’s National Roundtable on the Environment and Economy observed that:

Since many environmental, social, and governance factors become material only in the long-term, an obsession with short-term performance may profoundly mask the extent to which such factors can play a meaningful role in

22. Harmes 2001.

23. Shleifer and Summers 1990, 21.

24. Davis 1995a; 1995b.

25. Sigler 1989, 92.

investment decision-making . . . investment decisions being measured on a quarterly basis, goes against the long-term focus of sustainability practices.²⁶

We can thus hypothesize that most active fund managers will only promote climate change mitigation based on those variables of climate risk that impose more immediate costs.

One potential exception here is that, because many investment companies operate brand name mutual funds, they may have an incentive to promote climate change mitigation for reputational reasons. This risk to reputation is primarily related to environmental “events” which attract media attention—such as oil spills—in the companies in which they invest. Reputational risk can also occur for the financial sector as a whole when its legitimacy is challenged by various crises and scandals. Paterson makes this point in terms of how the Enron scandal seemed to contribute to a growing Wall Street interest in CSR activities. Specifically, “the explosion of interest in this approach by investors, and in climate change more generally, occurs only from around 2001–2 onwards, precisely at the time that the Enron scandal begins to unfold.”²⁷ While reputational risk can create a real incentive to promote climate change mitigation, it would seem to be a “soft” incentive where the response is most likely to be one of managing perceptions in the lowest-cost manner possible. From this we can hypothesize that the main response by investors to reputational risk is likely to be through process-, rather than results-oriented, activities such as the launching of an SRI fund or voluntary code of conduct and/or participation in an investor environmentalism initiative.

A number of investment companies also manage funds using the strategy of “passive investing” which is when a fund holds shares in companies which make up a set stock market index regardless of their individual performance. These “index funds,” which charge much lower fees than actively managed funds, are designed to rise and fall with the market and their managers do not actively pick stocks or engage in investment switching. While index funds do act as long-term, buy-and-hold investors, this may not translate into a better incentive to incorporate long-term climate risks as some have suggested.²⁸ Passive management, by definition, means that such funds will not engage in investment switching for any reason, including that of environmental performance. Also, such funds are unlikely to engage in environmental voice given that the entire reason they are able to charge lower fees is precisely because they do not invest significant resources in researching or overseeing individual companies. The final investment strategy is that of socially responsible investing which caters to individuals seeking an investment outlet for their environmental views. SRI funds thus do have a real market incentive to promote climate change mitigation.

26. NRTEE 2007.

27. Paterson 2010.

28. Pfeifer and Sullivan 2008.

The second largest category of institutional investors is pension funds which are comprised of trustees who oversee the fund as well as fund managers who conduct the actual asset selection. Pension fund trustees have a legally mandated “fiduciary duty” to minimize risk, maximize returns and preserve capital. They also, as Davis demonstrates, tend to select in-house or external fund managers using the same short-term performance criteria employed by investment companies.²⁹ However, as with institutional investors in general, it is necessary to disaggregate the different types of pension funds.

In terms exercising influence, the most visible institutional investors have long been the public defined-benefit pension funds. Public pension funds are run on behalf of public sector workers where the trustees generally include government representatives and union officials. Traditionally, public pensions have been structured as “defined-benefit” plans. In these plans the employer agrees to pay workers a set pension where specific benefits are defined in advance based on a percentage of salary or a flat rate per year of service. To pay the pensions, the employer creates an investment fund out of contributions deducted from workers’ wages. For employees, the advantage of defined-benefit pensions is that the risk of saving for retirement is borne by the employer. The amount of pension benefits that the worker receives are negotiated in advance with the employer being responsible for paying the pension even if the fund’s investment returns prove to be inadequate. This, in turn, means that control over investing lies primarily with the employer.

Based on fiduciary duty and the need to ensure sufficient returns to fund the pensions, most public defined-benefit pensions have employed in-house or external fund managers on the same short-term performance criteria used by investment companies. However, a number of these funds have been able to incorporate non-market criteria owing to the unique latitude held by their trustees. First, because these funds are defined-benefit, pension beneficiaries do not have to be excessively concerned with the performance of the fund as any shortfalls will be paid for by the employer out of government revenues. Second, because the trustees of these funds are government and union officials, they tend to be more responsive to political pressures to incorporate climate change for non-market reasons.

The trustees of private defined-benefit pensions, in contrast, face much greater constraints. First, unlike public employees, private sector workers and unions do have to be concerned with the fund’s performance, even though the employer is still responsible for funding shortfalls from company profits. As the recent trouble in the auto industry has demonstrated, many private defined-benefit funds are already seriously underfunded and have been cutting benefits. Additionally, the assets controlled by private defined-benefit funds do not legally belong to the employees because it is the employer that is responsible for paying the pensions if the fund’s returns are insufficient. Even though the trust-

29. Davis 1995a; 1995b.

ees of such funds often include both union and management representatives, the latter have the greatest control and have little incentive to incorporate non-market criteria that might hurt the company's profits. At the same time, the fund managers employed by many private pensions are generally reluctant to employ voice to pressure for changes in corporate behavior. For in-house managers, the fear is that other companies might retaliate with their own pension funds.³⁰ For external managers, the fear is one of alienating companies whose own pensions may be a potential future client. We can thus hypothesize that most private defined-benefit pension funds are unlikely to promote climate change mitigation for non-market reasons and, due to similar performance constraints as investment companies, are only likely to take into account those variables of climate risk that impose more immediate costs.

In addition to defined-benefit plans, public and private sector pensions can also be structured as "defined-contribution" plans where the pension received by the employee is no longer guaranteed by the employer. Instead, workers and/or their employers contribute to an individual investment fund that pays retirement benefits based entirely upon its market value at the time of retirement. In this type of plan, all risk is borne by the individual employee. With investment risk being shifted from the employer to the employee, the risk of saving for retirement is privatized in a way that forces individuals to become much more concerned with financial performance. Whether public or private, defined-contribution pension funds are really just a selection of externally-managed mutual funds chosen by individual investors and, because they are investment companies, they are subject to the same short-term performance criteria. The only real influence exercised by trustees is to determine which funds are included in the "menu" offered to individual beneficiaries, with their ability to incorporate non-market criteria being limited to the inclusion of an SRI fund.

The third largest category of institutional investors is insurers. As publicly-listed companies, most insurers are themselves subject to the same pressures for short-term performance as other firms and their in-house and external fund managers tend to be employed under the same performance criteria as other investment companies. As Paterson observes, the "fiduciary responsibility of [insurance] companies to maximize revenue for both shareholders and policyholders limits their freedom of movement in investment matters."³¹ This implies that insurers will also be unlikely to incorporate climate change for non-market reasons and that they too will find it difficult to incorporate any costs of climate change that are only realized over the long-term.

The final "other" category includes hedge funds and private equity funds, as well as various foundations. Hedge funds and private equity funds, while different, both operate in an even more competitive environment than other investment companies and are thus even less likely to be able to incorporate non-

30. O'Barr and Conley 1992.

31. Paterson 2001, 31.

market criteria or long-term climate risks. As Pfeifer and Sullivan report, “hedge funds and private equity funds—which tend to be much less transparent than traditional equity funds and to have a much stronger focus on short-term returns—may make it more difficult to focus on long-term issues such as climate change.”³² Also, because they cater to wealthy investors and institutions, they are less subject to the reputational incentives faced by retail mutual funds. The small exception here is that, like investment companies, some hedge and private equity funds do offer SRI or green venture capital funds which do have a market incentive to promote climate change mitigation. In terms of foundations, their trustees often have much wider latitude than even the trustees of public defined-benefit pension funds. While many simply delegate their portfolios to external managers, some—such as faith-based foundations—have specific mandates related to promoting CSR and, thus, many of them can incorporate climate change for non-market reasons.

Overall, the specific incentives and constraints faced by different institutional investors lead to two initial conclusions about the potential effectiveness of investor environmentalism. The first is that, with the exception of some public defined-benefit pension funds, SRI funds and foundations, most “mainstream” institutional investors will not be able to promote climate change mitigation for non-market or ethical reasons, although some may do so in a “soft” manner for their own reputational reasons. While most proponents of investor environmentalism do emphasize the business rather than ethical case, this conclusion is relevant in terms of empirically assessing the actual practices of investor environmentalism. Specifically, if the investors who are most strongly promoting climate change mitigation are primarily the public defined-benefit pension funds, SRI funds and foundations, it provides an indication of the weakness of the business case as they are likely doing so for ethical rather than business reasons, even though they may discursively frame their activities in business terms.

The conclusion that most mainstream investors will not be able to promote climate change mitigation for ethical reasons is also relevant for understanding limitations on the power of institutional investors and the potential effectiveness of investment-switching. For example, it is often implied that, even though ethically-motivated funds will never comprise a majority of the market, their growing assets are still significant enough to create incentives for firms. The impression created is that ethically-motivated funds, including the large public defined-benefit pensions, would have sufficient assets to sell the shares of a company with poor environmental performance, causing the stock price to drop in a way that would create a real financial incentive for improved performance. However, as basic financial theory indicates, this will simply not occur due to the existence of “arbitrage.” Specifically, if a number of ethically-motivated investors sold-off the shares of a company with poor environmental

32. Pfeifer and Sullivan 2008, 259.

performance, causing the stock price to drop, other investors would view that company as undervalued in market terms and would quickly purchase its shares causing the stock price to almost instantly return to its original value.

Important to emphasize is that arbitrage only requires that a small percentage of investors actually employ strict market criteria for the effects of ethical investors to be counteracted. Even if *all* institutional investors, with the exception of hedge funds, could be convinced to allocate their capital on an ethical or reputational basis, their investment-switching activities would still be rendered ineffective by the hedge funds. This problem would also apply to investment-switching which is based on the long-term costs of climate change. Again, even if all institutional investors, with the exception of hedge funds, could be convinced to adopt more long-term investment criteria, and thus take into account longer-term climate risks, their investment-switching activities would again be rendered ineffective by the short-termism of hedge funds. In contrast, the strategy of environmental voice is not subject to the problem of arbitrage and, thus, could be somewhat effective based solely on the actions of ethical or reputation-motivated investors. Taken together, these conclusions indicate that the potential of investor environmentalism through investment-switching (and somewhat through environmental voice) rests almost entirely on the business case and, in particular, on those variables of climate risk which will impose more immediate costs.

Assessing the Business Case for Investor Environmentalism

From the perspective of liberal economic theory, climate change is viewed as a form of “market failure” in that it represents a situation of allocative inefficiency. This means that if you could add up all the current and potential costs of climate change, they would be greater than what it would cost to prevent climate change in the first place. In fact, this is precisely what the now seminal *Stern Review: The Economics of Climate Change* attempted to do.³³ By seeking to quantify the costs of climate change, as well as the costs of mitigation, the Stern Review’s fundamental argument was that climate change represented a situation of allocative inefficiency.

More precisely, the standard interpretation has long been that climate change—like most forms of pollution—falls into the category of market failures known as “negative externalities.” Pollution constitutes a negative externality because it creates costs that are *external* to the production process. In other words, pollution creates costs, in the form of damage to human health and property, which are not primarily borne by the company which produces it or the consumers who purchase its products. At the same time, negative externalities such as pollution are often highly inefficient because the costs created by the pollution are often far greater than what it would cost the company to sim-

33. Stern 2007.

ply prevent the pollution in the first place. However, because the costs of the pollution are not paid for by the company, but the costs of preventing it would be, the company has no incentive to take any action.

As a form of market failure, a negative externality creates a rationale for government intervention to force companies to internalize the costs of their pollution. When this occurs, companies will have an economic incentive to prevent their pollution, meaning that market forces will then work to correct the problem. In the case of climate change, this is the rationale behind a carbon tax or a cap on emissions (enforced by appropriate fines) in that they would put a price on carbon and force companies and their consumers to internalize the costs of climate change by paying for the emissions they produce. The result is that carbon emitting firms and individuals would have a financial incentive to reduce their emissions by developing and adopting more climate-friendly technologies and processes. Important to emphasize here, as any introductory economics textbook will indicate, is that the potential solution to an externality (which is by definition “external” to the market) is *always* listed as being one of government intervention; either in the form of Pigouvian taxes and regulations (such as a carbon tax or emission control regulation) or the government-mandated assignment of Coasian property rights (such as carbon permits).

While proponents of investor environmentalism often employ the language of “market failures” and “externalities,” it is important to recognize that the business case for investor environmentalism is not premised upon the category of market failures known as “externalities.” Instead, it is implicitly premised on the category of market failures known as “information asymmetries.” An information asymmetry exists “when one party to an economic relationship or transaction has less information about it than the other party or parties.”³⁴ Information asymmetries give rise to the problem of “adverse selection” where market actors will purchase more (or less) of a particular product than they would in the presence of full information. One example here is tobacco products which impose negative costs on those who consume them in terms of health problems. When information about the health costs of tobacco products was less widely known, more people consumed them. However, because these products did impose real costs on their consumers, it created a market incentive for medical professionals to conduct research and for information providers to make people aware of the costs. It also created a rationale for governments to mandate transparency through various labeling laws. In this way, many information asymmetries will be resolved through market forces or government-mandated information disclosure. It is important to note here, however, is that this market failure related to tobacco products is clearly an information asymmetry rather than a negative externality because *the costs of the product are primarily borne by those who consume them*. This, and only this, is why information disclosure can lead to a correction of the market failure.

34. Eichengreen et al. 1998, 3.

For proponents of investor environmentalism, the same logic applies to climate change which is why the measurement and disclosure of climate risks is seen as an effective method for correcting this market failure. As outlined earlier, the entire business case for investor environmentalism argues that climate change *already* creates real financial costs for firms, in the form of the six variables of climate risk outlined by the CDP, and that disclosure of these costs will create market incentives for institutional shareholders. It is this point that forms the *raison d'être* for most initiatives related to investor environmentalism and, by extension, for efforts to encourage accountants and credit rating agencies to incorporate environmental criteria through methodologies such as the “triple bottom line.” For proponents of these initiatives, climate change is thus implicitly viewed as an information asymmetry rather than as an externality.

At the general level, the problem with this implicit assumption is that it goes against the long-standard interpretation of climate change as an externality in that the largest emitters simply do not bear the costs of the pollution they produce. This point is made emphatically in the *Stern Review* which argues that “[g]reenhouse gases are, in economic terms, an externality: those who produce greenhouse-gas emissions are bringing about climate change, thereby imposing costs on the world and on future generations, but they do not face the full consequences of their actions themselves.”³⁵ While this difference between climate change as an information asymmetry as opposed to an externality may seem like academic hair-splitting, it has important implications for the potential effectiveness of different solutions. For example, while the CDP and similar NGOs argue that “what gets measured, gets managed,” it is important to recognize that measuring a firm’s carbon emissions or broader environmental externalities (or footprint) is not the same as putting a price on them. Triple bottom line accounting is based on the idea that the externalities produced by a firm can be quantified as costs and then deducted from a firm’s financial bottom line to show its “true” bottom line. While useful in academic or public opinion terms, it is a fallacy in accounting terms because these externalities do not represent real costs precisely because they are externalities; the firm is not responsible for paying for them unless forced to do so by government intervention. Illustrating this point in more detail are the precise incentives created by the six variables of climate risk.

The first variable is the potential for firms to experience real financial losses due to the exposure of their physical assets to climate-related weather events. This variable does create real and potentially immediate costs for firms. However, as Paterson demonstrates in the case of insurers, the precise incentives created are for firms and investors to promote adaptation rather than mitigation owing to the clear collective action problems involved.³⁶ Specifically, if an individual company promoted mitigation, while its competitors promoted adapta-

35. Stern 2007, xviii.

36. Paterson 2001.

tion, climate change and the risks of extreme weather would continue but the firm would be less prepared for them than its competitors and financial markets would respond accordingly. As a result, the physical risks associated with climate change do not create an incentive for investors to promote climate change mitigation.

The second variable of climate risk is regulatory risk which are the costs a firm will be exposed to if governments force them to pay for their emissions through carbon taxes, cap and trade systems or regulations. While such policies would clearly create real costs for firms, it creates a logical paradox in terms of the potential effectiveness of investor environmentalism as a form of private governance. Most obviously, if investor environmentalism is only effective in the event of government intervention, it is hard to see what “value-added” is provided by the various investor environmentalism initiatives. In terms of disclosure, a legally-mandated cost on carbon would represent a financial cost that firms would be legally required to report under existing securities laws. In terms of investment switching, a legally-mandated price on carbon would show up in a firm’s bottom line and would cause investors to act irrespective of whether they took climate change into account or participated in an investor environmentalism initiative. Also, a government imposed price on carbon would, on its own, create the incentive for firms to reduce their carbon emissions independent of any financial market reaction. This is why we would expect fully private companies, which are not listed on the stock exchange or subject to shareholder pressure, to respond to such forms of government intervention in exactly the same way as publicly-listed companies. This point highlights another key paradox related to investor environmentalism which is, if climate change creates financial costs for the companies in which institutional shareholders invest, why would these costs not create an incentive for the firms to act irrespective of financial market reaction?

In the case of regulatory risk, one area where we might expect investor environmentalism to provide some value-added would be in situations where a government has not yet imposed a price on carbon. The logic here is that if investors anticipate that a government will eventually mandate a price for carbon they may seek to switch their investments to firms that are currently working to reduce their emissions in a way that would, at least, bring-forward-in-time the incentives created by the government intervention. Two points are important here. First, given the short-term horizons of most fund managers, a government’s intention to impose a price on carbon would have to be very real and very immediate for it to be taken into account. While the resulting investment-switching might bring forward in time the government imposed incentives, the practical difference is likely to be minimal. Second, where the government’s commitment is more uncertain, investment-switching is unlikely to occur or to be arbitrated away by short-term investors. If it did somehow result in declining share prices, the effect may be to simply amplify the already existing incentives for firms to limit their risks by lobbying against government intervention. The

most likely response of firms to an uncertain regulatory climate is thus a hedging approach based on the currently-dominant risk management strategy known as “real options analysis.” On the one hand, firms would make some initial investments in climate change mitigation, which could be ramped-up if regulations became certain or ramped-down if not, in order to hedge against the possibility of strong regulation and reputational concerns. On the other hand, the firm would continue to lobby governments to delay or water-down regulations to put off paying for carbon emissions for as long as possible.

The third variable of climate risk is reputational risk. In terms of climate change, the CDP Canada notes that “[f]irms that fail, for whatever reason, to engage stakeholders on this issue could face negative consequences to their reputations, particularly in high-impact industries.”³⁷ Reinforcing this view are numerous examples of companies which have experienced rapid share price declines when evidence of their poor environmental performance was revealed to the public.³⁸ However, as outlined in the case of financial companies, most risks to reputation that lead to investment-switching result from specific environmental “events”—such as oil spills, chemical leaks or illegal dumping—rather than from a general lack of action on broadly caused environmental issues such as climate change. Illustrating this point is the fact that Exxon, while it did experience a share price decline following the Valdez spill, has not experienced any profit or share price impacts even though it continues to openly lobby against climate change policies and has been dubbed by Greenpeace as “the world’s number one climate criminal.”³⁹ While reputational risk can create financial costs for firms, these costs are most likely to be event or NGO-driven rather than based on broadly caused problems such as climate change. Also, they are likely to be revealed to investors through the media rather than through any form of prior disclosure which implies that it is almost impossible for investors to assess an individual firm’s climate-related reputational risk. As the CDP Canada notes, “[w]hile this factor is perhaps more difficult to quantify and measure than other risk drivers, it nevertheless needs to play a role in comprehensive net carbon-risk analysis.”⁴⁰ Despite this statement, however, the CDP does not say how it should be incorporated nor does it include a specific question on reputational risk in its annual disclosure request.

The fourth variable of climate risk is product risk; that a company will experience declining demand for its climate-unfriendly products such as fossil fuels. For the CDP Canada, product risk “involves long-term demand-side challenges to companies’ core business lines, as a result of tightening global GHG regulations.”⁴¹ Important here is that climate-related product risks are seen by the CDP as both long-term in nature and dependent upon a government-

37. CDP Canada 2006, 33.

38. Repetto 2003.

39. Greenpeace International 2003.

40. CDP Canada 2006, 33.

41. CDP Canada 2006.

imposed price for carbon. In other words, if governments impose a price on carbon, it will raise the costs of fossil fuels and reduce demand for them and for products dependent on them. As the CDP Canada notes, “[a]s the environmental externalities (namely GHG emissions) of given products are increasingly priced into the market through the regulation of GHGs, carbon-intensive products . . . could become less competitive at the margin.”⁴² In many ways, therefore, the variable of product risk is merely an extension of regulatory risk and, as such, is subject to the same limitations including the short-term horizons of investors and the logical paradox of being dependent on government intervention.

Climate-related product risk can also occur independently from a government-imposed price on carbon based on non-price related changes in consumer preferences. In other words, as consciousness of climate change grows, consumers may reduce their demand for climate-unfriendly products. However, in terms of investor environmentalism, this form of product risk is subject to many of the same limitations that apply to reputational risk. The first is that non-price related changes in consumer preferences are ultimately dependent on “ethical consumerism” which is, itself, limited by the small number of participating consumers and the small number of products to which it applies due to information asymmetries.⁴³ Where ethical consumerism has been successful, it is generally the result of NGO information campaigns. As these are revealed to investors through the media, rather than prior disclosure, it is almost impossible for investors to assess a firm’s ethically-driven product risk. One exception is demand shifts for iconic, climate-unfriendly products such as SUVs which, being iconic, are not dependent on NGO campaigns. However, as these types of demand shifts tend to occur only over the long-term, mainstream investors are unlikely to incorporate them and, if they do, the share price effects will be arbitrated away by short-term investors. Finally, adding to these limitations are the key paradoxes that, if demand for climate-unfriendly products falls, it creates an incentive for firms independent of any financial market reaction and would cause financial actors to react irrespective of whether they participated in an investor environmentalism initiative.

The fifth variable of climate risk is exposure to climate-related increases in energy costs. While energy costs can rise for many reasons, climate-related increases will occur principally due to a government-imposed price on carbon which adds a premium to existing prices. As a result, climate-related increases in energy costs are fully dependent on government regulation and as such are subject to the same limitations as regulatory risk. In terms of energy prices rising for non-climate-related reasons, it is again difficult to see what value-added would be provided by the investor environmentalism initiatives. Rising energy costs represent a financial cost that would show up in a firm’s bottom line, and cause

42. CDP Canada 2006.

43. O’Rourke 2005.

investors to act, irrespective of whether they took climate change, or even energy costs, into account or participated in an investor environmentalism initiative. Also, rising energy prices, on their own, create an incentive for firms to improve their energy efficiency independent of any financial market reaction. Finally, in the case of fossil fuel companies, rising energy prices represent increased short-term profits, rather than costs, and tend to lead to a corresponding increase in share prices.

The final variable of climate risk, which primarily applies to companies operating in the US, is litigation risk. The idea is that firms could be sued either for the climate-related externalities they create or based on their failure to disclose their climate risks to investors. Litigation could create real costs for large emitters, but such costs are extremely uncertain owing to the legal difficulties involved and the lack of an existing precedent. As one recent study on the potential of climate change litigation noted, “even with a strong plaintiff and a vulnerable defendant, imposing liability would test the frontiers of existing legal doctrines, making liability less likely than not, though certainly not inconceivable . . . the reality is that under current laws, liability is likely to be imposed, if at all, in a fairly narrow set of circumstances.”⁴⁴ Thus, while climate litigation does have the potential to create real financial costs for large emitters, short-term investors are unlikely to take it into account until a precedent is established. Equally important are the actual incentives that would be created by successful litigation. Specifically, because liability would be imposed based on total emissions over time, a large emitting company would still be vulnerable to litigation even if it changed its practices today, meaning it would be unlikely to create an incentive for mitigation among long-established firms.⁴⁵ Moreover, highlighting the difficulty of assessing litigation risk is the fact that, while the CDP considers it as one of the six variables of climate risk, it does not ask any specific questions on it in its annual disclosure requests.

Assessing the Empirical Evidence: Insights from the Theoretical Analysis

Taken as a whole, the business case for investor environmentalism (and, by extension, for environmental accounting and credit-rating) would appear to be theoretically weak and plagued by some key logical paradoxes. This, in turn, supports the long-standard view that climate change is best classified as a negative externality rather than an information asymmetry, meaning that carbon disclosure is unlikely to create real financial incentives, through share price performance, for climate change mitigation. This analysis will need to be confirmed or refuted through future empirical research and through an assessment of existing evidence on whether investors actually incorporate climate risks into their in-

44. Hsu 2008, 3.

45. Hsu 2008.

vestment decision-making. However, while such an assessment is beyond the scope of this article, this section argues that the theoretical analysis can provide some insights for future evaluations of the empirical evidence.

The first insight is the need to recognize the specific constraints facing most mainstream investors and, in turn, why participation in an investor environmentalism initiative does not, on its own, mean that more and more investors are “taking climate change into account” or “speaking out on the issue of climate change” as the CDP and others have implied. As Kolk et al. observe, when it comes to the CDP and similar initiatives, “[i]t should be noted that there are no costs or carbon commitments for signatory investors.”⁴⁶ For example, when the CDP sought to survey its signatory investors on the extent to which they made use of CDP data, only 80 of 385 even responded to the survey. Simply signing on to an investor environmentalism initiative is thus entirely consistent with the analysis that mainstream investors will promote climate change mitigation for primarily reputational reasons in a low-cost and “soft” manner. While this neither confirms nor refutes the business case argument, it does imply that simple participation in an investor environmentalism initiative should not be viewed as evidence that investors are incorporating climate change into their investment decision-making.

The second insight is the need to make a distinction between the different types of investors and, in particular, between the public defined-benefit pension funds, SRI funds and foundations who are able to act for “ethical” reasons and the mainstream investors who are not. Such a distinction is necessary to avoid incorrect aggregations which can create misleading impressions. For example, in one of the few reports examining how investors incorporate climate risk, the CDP surveyed its signatory investors in 2009. Its key finding was that “[s]eventy-seven percent of respondents indicated that they factor climate change information into their investment decisions and asset allocations.”⁴⁷ However, when this report is examined in detail, it provides an example of how incorrect aggregation may result from failing to distinguish between different types of investors.

For example, while the report does not provide any breakdown by the different types of investors, it is clear from the anecdotal case studies cited that many of the (only 80 out of 385) respondents were public defined-benefit pension funds, SRI funds and foundations who we would expect to use CDP data for ethically-motivated reasons. Also, many of the “mainstream” respondents to the survey offer one or more SRI funds as part of their menu of funds. Thus, an investment company is counted as “factoring climate change into their investment decisions” even if this was only occurring among its SRI fund managers. Further highlighting this need to distinguish between different types of investors are the findings of a 2008 study on investor environmentalism among UK

46. Kolk et al. 2008, 724.

47. CDP 2009, 2.

fund managers. In terms of factoring in climate change, the study found that “with the exception of a few public funds . . . there has been limited demand from pension funds for their fund managers to explicitly consider climate change in their investment processes.”⁴⁸ In terms of environmental voice, the study also found that “[m]ost of the dialogue with companies on climate change issues continued to be conducted by SRI fund managers or analysts, with interviewees from companies reporting that what they regard as “mainstream investment analysts” were not focused on these issues.”⁴⁹ Again, while these findings neither confirm nor refute the business case argument, they do show why it is necessary to distinguish between different types of investors in order to properly evaluate the empirical evidence.

The third insight is the need to avoid viewing investors who incorporate existing government regulation, by itself, as evidence in support of the business case. As argued earlier, a legally-mandated cost on carbon constitutes a real cost that will show up in a firm’s bottom line irrespective of whether it participated in an investor environmentalism initiative. Therefore, we would expect all investors to respond to a legally-mandated cost on carbon regardless of whether they took climate change into account or participated in an investor environmentalism initiative. Highlighting this point is the 2008 study of UK fund managers cited above. Specifically, based on the results of numerous interviews with fund managers, the study found that “[v]irtually without exception, the interviewees cited the EU ETS [Emission Trading System] as the critical—and, in many cases, the only—driver for them to explicitly consider climate change in their investment analysis.”⁵⁰ Thus, while neither confirming nor refuting the business case, this does highlight the need firstly to avoid viewing investors who incorporate existing government regulation as evidence in support of the business case, and secondly to critically assess investors who claim to be factoring in climate change if their funds hold assets in countries with a legally-mandated price on carbon.

The fourth insight is the need to critically evaluate the use of anecdotal examples of individual firms and investors undertaking some action on climate change as evidence in support of the business case. On the one hand, some actions on climate change—such as participation in an investor environmentalism initiative, launching an SRI fund or the provision of some green-tech funding—are all consistent with the analysis that firms and investors will promote climate change mitigation for reputational reasons in a low cost and soft manner. Alone, such activities can thus be viewed as ethical add-ons, similar to corporate philanthropy, rather than as evidence that climate risks are being incorporated into core decision-making. They can also be viewed as part of a hedging approach associated with the currently dominant risk management

48. Pfeifer and Sullivan 2008, 258.

49. Pfeifer and Sullivan 2008, 257.

50. Pfeifer and Sullivan 2008, 258

strategy known as “real options analysis.”⁵¹ The central premise of this approach is that it pays firms to keep their options open by making small, flexible investments in a number of potential scenarios (that can be ramped up or down), rather than one big fixed investment in the most “likely” scenario. In contrast to earlier eras, the use of real options strategy means that a firm’s actions on climate change are much less likely to be unidirectional and that anecdotal examples should not, by themselves, be viewed as evidence of changed behavior, particularly in the face of counter-indicators such as a firm simultaneously participating in anti-regulation lobbying.

Conclusion

This article has argued that the potential of using institutional investors to create real financial incentives for climate change mitigation, through share price performance, has been considerably overestimated and that there is not even a strong theoretical case for why carbon disclosure should work in this regard. This suggests that, even if all firms disclosed carbon risks in a complete and usable way, mainstream investors are unlikely to incorporate them due to the inherent weakness of the business case, while the actions of ethically-motivated investors will be counteracted by arbitrage. This does not imply that all aspects of carbon disclosure are ineffective. For example, carbon disclosure may provide information useful to venture capitalists to fund clean-tech development, by NGOs to “name and shame” or by governments to assist with regulation. However, as noted earlier, such uses lie outside the primary goal of the carbon disclosure initiatives and, thus, outside the scope of this article.

References

- Allianz. 2006. Interview with Paul Dickinson, coordinator of the Carbon Disclosure Project. Available at www.knowledge.allianz.com, accessed 10 May 2009.
- Amalric, Frank. 2006. Pension Funds, Corporate Responsibility and Sustainability. *Ecological Economics* 59: 440–450.
- Berle, Adolf, and Gardiner Means. 1932. *The Modern Corporation and Private Property*. New York: Commerce Clearing House.
- Carbon Disclosure Project. 2008. *Carbon Disclosure Project Report 2008: Global 500*. London: CDP.
- . 2009. *Investor Research Project—Investor Use of CDP Data*. London: CDP.
- Carbon Disclosure Project Canada (CDP Canada). 2006. *Carbon Disclosure Project Report 2006: Canada 280*. Toronto, ON: CDP Canada.
- Davis, E. Philip. 1995a. Institutional Investors, Unstable Financial Markets and Monetary Policy. LSE Financial Markets Group, Special Paper No. 75, 1995.
- . 1995b. *Pension Funds: Retirement-Income Security and Capital Markets*. Oxford: Clarendon Press.
51. Peter Coy, “Exploiting Uncertainty: The ‘Real-Options’ Revolution in Decision-making,” *BusinessWeek*, 7 June 1999.

- ENDS. 2009. WWF Calls for Carbon Liability Disclosure. *ENDS Report* 1 April 2009. Available at endsreport.com, accessed 15 July 2009.
- Eichengreen, Barry, Mussa, Michael, and Giovanni Dell'Ariccia. 1998. Capital Account Liberalization: Theoretical and Practical Aspects. *IMF Occasional Paper 172*, Washington, DC: IMF.
- Gonnard, Eric, Eun Jung Kim, and Isabelle Ynesta. 2008. *Recent Trends in Institutional Investor Statistics*. Paris: OECD.
- Greenpeace International. 2003. "Greenpeace Busts Exxon as #1 Climate Criminal." Available at Greenpeace.org, accessed 14 December 2010.
- Harmes, Adam. 2001. *Unseen Power: How Mutual Funds Threaten the Political and Economic Wealth of Nations*. Toronto, ON: Stoddart.
- Hsu, Shi-Ling. 2008. A Realistic Evaluation of Climate Change Litigation Through the Lens of a Hypothetical Lawsuit. Unpublished manuscript, Faculty of Law, University of British Columbia.
- International Monetary Fund (IMF). 1990. *International Capital Markets: Developments, Prospects, and Policy Issues*. Washington, D.C.: IMF.
- Kolk, Ans, David Levy and Jonatan Pinkse. 2008. Corporate Responses in an Emerging Climate Regime: The Institutionalization and Commensuration of Carbon Disclosure. *European Accounting Review* 17(4): 719–45.
- Labatt, Sonia, and Rodney White. 2007. *Carbon Finance: The Financial Implications of Climate Change*. New Jersey: John Wiley & Sons Inc.
- NRTEE. 2007. *Capital Markets and Sustainability: Investing in a Sustainable Future*. Ottawa: NRTEE.
- O'Barr, William, and John Conley. 1992. *Fortune and Folly: The Wealth and Power of Institutional Investing*. Homewood, Illinois: Irwin.
- O'Rourke, Dara. 2005. Market Movements: Nongovernmental Organization Strategies to Influence Global Production and Consumption. *Journal of Industrial Ecology* 9(1–2): 115–128.
- Paterson, Matthew. 2001. Risky Business: Insurance Companies in Global Warming Politics. *Global Environmental Politics* 1(4): 18–42.
- . 2010. Legitimation and Accumulation in Climate Change Governance. *New Political Economy* 15(3): 345–368.
- Pfeifer, Stephanie, and Rory Sullivan. 2008. Public Policy, Institutional Investors and Climate Change: A UK Case-study. *Climatic Change* 89: 245–262.
- Repetto, Robert. 2003. Protecting Investors and the Environment Through Financial Disclosures. Unpublished manuscript, Institute for Policy Research and Implementation, University of Colorado at Denver.
- Shleifer, Andrei, and Lawrence Summers. 1990. The Noise Trader Approach to Finance. *Journal of Economic Perspectives* 4(2): 19–33.
- Stern, Nicholas. 2007. *Stern Review: The Economics of Climate Change*. Cambridge: Cambridge University Press.
- Sigler, Andrew. 1989. Testimony Before the Senate Committee on Banking, Housing and Urban Affairs. The Impact of Institutional Investors on Corporate Governance, Takeovers, and the Capital Markets. 101st Congress, 1st Session, 3 October 1989.
- Useem, Michael. 1996. *Investor Capitalism: How Money Managers are Changing the Face of Corporate America*. New York: Basic Books.
- World Bank. 1997. *Private Capital Flows to Developing Countries: The Road to Financial Integration*. Oxford: Oxford University Press