Corporate Environmental Governance

A study into the influence of Environmental Governance and Financial Performance
The Environment Agency is the leading public body protecting and improving the environment in England and Wales.

It’s our job to make sure that air, land and water are looked after by everyone in today’s society, so that tomorrow’s generations inherit a cleaner, healthier world.

Our work includes tackling flooding and pollution incidents, reducing industry’s impacts on the environment, cleaning up rivers, coastal waters and contaminated land, and improving wildlife habitats.

Written by Andrew White and Matthew Kiernan
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Foreword

For some time there has been debate about how companies manage the environment and the influence this has on business performance. This study seeks to address this issue, by looking at whether there is a link between corporate environmental governance and financial performance.

The study is based on an extensive literature review and 15 case studies. Its conclusion is clear: good environmental governance can benefit financial performance and, conversely, poor performance can have damaging financial consequences.

This clearly has very important implications for financial investors. It means that better financial returns can be obtained from investing in companies which integrate environmental considerations into corporate governance policies and processes.

Some company analysts, institutional pension fund managers and others were rather sceptical of earlier studies. We hope that they will act on these new findings and take greater account of corporate environmental governance in their future decisions.

Howard Pearce

Head of Environmental Finance and Pension Fund Management

October 2004
About Innovest Strategic Value Advisors

Innovest Strategic Value Advisors is an international investment research firm specializing in analysing “non-traditional” drivers of risk and shareholder value, including companies’ performance on environmental, social, and strategic governance issues. Innovest has been recognised recently by several dependent commentators as the leading firm in the world in this area.

Founded in 1998, the firm has over US$1 billion under structured sub-advisory mandates with asset management partners including State Street Global Advisors, ING Investment Management including leading European pension funds IDEAM and ABP Investments including leading European pension funds.

Innovest also provides customised portfolio analysis and research to more than thirty major institutional investors including Hermes, Schroders, Cazenove, and Rockefeller & Co., as well as to leading pension funds in the United States, the U.K., continental Europe, and Scandinavia. Innovest currently has clients in over twenty countries.

The Environment Agency commissioned Innovest Strategic Value Advisors to carry out this study on its behalf. The views and evaluation, particularly of sectors and companies are based on Innovest’s research and are not necessarily those of the Environment Agency.

www.innovestgroup.com

Acknowledgements

Before we published this report, we invited all the companies in the profiles section to comment on the analysis and conclusions drawn, and to provide any additional relevant research. The Environment Agency and the study authors would like to thank all those companies which responded with comments and further data. This has helped to ensure the accuracy of the case studies.

Disclaimer

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Introduction

The Environment Agency believes that all companies have a duty of care towards the environment. It also maintains that companies which reduce their environmental risks and impacts are more sustainable, profitable, valuable and competitive. The Agency commissioned this report to shed light on the value of good environmental governance from a business perspective. It aims to encourage the wider adoption of sound environmental policies and practices, leading to improved environmental and financial performance.

This executive summary has been written in the form of a short report. It summarises all the main findings of the full study, including full text for each case study. The full report can be found on the Environment Agency website www.environment-agency.gov.uk/business, which also gives further details of the Environment Agency’s position on Corporate Environmental Governance or on the Innovest Strategic Value Advisors website – www.innovestgroup.com

Table 1 shows the 15 case studies undertaken and table 2 shows some of the key findings of three of the case studies.

Overall findings

Good environmental governance helps to deliver better financial performance

In recent years there has been a marked increase in research suggesting that good environmental governance practice can deliver better financial performance.

During the literature review, we found strong evidence for the existence of a positive relationship between environmental governance and financial performance. This result is largely consistent with other literature reviews conducted over the past few years.

“In 85% of the total number of studies assessed, we found a positive correlation between environmental governance and/or events, and financial performance.”

Our work on the individual case studies supported these positive findings from the literature review.

Table 1

<table>
<thead>
<tr>
<th>Funds</th>
<th>Sectors</th>
<th>Companies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jupiter Ecology Fund</td>
<td>Integrated oil &amp; gas</td>
<td>3M</td>
</tr>
<tr>
<td>Winslow Green Growth Fund</td>
<td>EU and US electric utilities</td>
<td>Baxter International</td>
</tr>
<tr>
<td></td>
<td>Paper and forest products</td>
<td>Co-operative Bank</td>
</tr>
<tr>
<td></td>
<td>Water utilities</td>
<td>Iceland (The Big Food Group)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Monsanto</td>
</tr>
<tr>
<td></td>
<td></td>
<td>PSA Peugeot Citroen</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Shell</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Xstrata</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Vestas Wind Systems</td>
</tr>
</tbody>
</table>
The comparative studies – in both the literature review and the case studies – provided striking evidence of a positive correlation between environmental governance and financial impacts (see table 2). This impact was most clearly seen in the company studies sourced in the literature review and in the sector case studies (see page 8 and figure 8).

Many in the financial community have yet to recognise the link between environmental governance and financial performance

On the whole, the research findings in this report appear to directly counter a widespread misconception – that paying close attention to an environmental governance strategy and environmental performance is at best a waste of time for investors, and at worst actively harmful to financial returns. In fact the opposite is true. Improving environmental performance is an opportunity for business and can create competitive advantage.

If we are to challenge this misconception in the financial community, we need to get across the results from current research. This is a daunting task. We hope that this report will go some distance towards addressing this. We would encourage mainstream investors to build corporate environmental governance into financial models.

There are many individual examples of a link to out-performance:

<table>
<thead>
<tr>
<th>The Winslow Green Growth Fund</th>
</tr>
</thead>
<tbody>
<tr>
<td>The fund has consistently out-performed its benchmark, over a prolonged period. Over one, three and five years, the average annual returns for this fund were, respectively, 20.41%, 5.79% and 11.49% more than the benchmark index.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Forest and paper products sector</th>
</tr>
</thead>
<tbody>
<tr>
<td>Companies with above average environmental governance standards and environmental track record out-performed companies with below average standards by over 43% over a four-year period.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Company case study of 3M</th>
</tr>
</thead>
<tbody>
<tr>
<td>The implementation of a pollution prevention programme yielded total savings of US$894 million from 1975 to 2002.</td>
</tr>
</tbody>
</table>
What is environmental governance?

Environmental governance describes a company’s management of its environmental impacts, risks, performance and opportunities. It covers the full range of its best practice approaches (see table 3).

These approaches are reflected in the Environment Agency’s corporate environmental governance policy. Environmental governance includes the following key business considerations:

- **Environmental values** (vision, mission, principles);
- **Environmental policy** (strategy, objectives, targets);
- **Environmental oversight** (responsibility, direction, training, communication);
- **Environmental processes** (management systems, initiatives, internal control, monitoring and review, stakeholder dialogue, environmental accounting, reporting and verification);
- **Environmental performance** (use of Key Performance Indicators, benchmarking, eco-efficiency, reputation, compliance, liabilities, business development).

Financial performance indicators

Traditionally, financial indicators were based on figures from management and financial accounts. These are called fundamental indicators. A distinction can be made between financial indicators which are quantitatively derived (traditional ‘fundamentals’) and ‘intangible’ values. These do not, as yet, generally appear in company accounts. However, they are very likely to have a financial impact. The indicators considered in the review are set out in table 4 below.

### Table 3

For the purposes of the literature review in this report, the following environmental factors were assessed:

<table>
<thead>
<tr>
<th>Environmental governance</th>
<th>Environmental events</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strategy</td>
<td>Audit/verification</td>
</tr>
<tr>
<td>Climate change</td>
<td>Accounting/reporting</td>
</tr>
<tr>
<td>Oversight</td>
<td>Eco-efficiency</td>
</tr>
<tr>
<td>Environmental Management System</td>
<td>Products/services</td>
</tr>
<tr>
<td>Training</td>
<td>Profit opportunities</td>
</tr>
<tr>
<td></td>
<td>Historic liabilities</td>
</tr>
<tr>
<td></td>
<td>Spills and releases</td>
</tr>
<tr>
<td></td>
<td>Toxic emissions</td>
</tr>
<tr>
<td></td>
<td>Hazardous waste</td>
</tr>
<tr>
<td></td>
<td>Loss of biodiversity</td>
</tr>
</tbody>
</table>

### Table 4

The indicators considered in the review:

<table>
<thead>
<tr>
<th>Fundamental indicators</th>
<th>Intangible indicators</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shareholder value</td>
<td>Reputation</td>
</tr>
<tr>
<td>Share price</td>
<td>Innovation</td>
</tr>
<tr>
<td>Market cap</td>
<td>Competitive advantage</td>
</tr>
<tr>
<td>Market share</td>
<td>Shareholder relations</td>
</tr>
<tr>
<td>BMV</td>
<td>Management quality</td>
</tr>
<tr>
<td>EBIT</td>
<td>Risk avoidance</td>
</tr>
<tr>
<td>EBITDA</td>
<td></td>
</tr>
<tr>
<td>Operating costs</td>
<td></td>
</tr>
</tbody>
</table>
Literature review

In the literature review, we identified 70 separate studies, listed in the full report, which examined the impact of environmental governance on financial performance (see table 5). The focus was on those studies with a strong empirical research content which had been published in the last five to six years. By taking this approach, we attempted to ensure that the findings of the literature review were both meaningful and up to date.

*Note: Ten of the 70 studies were themselves literature reviews. These have been referred to for comparative purposes. The statistical analysis in this report was carried out on the other 60 studies identified. These 60 studies each provided a separate analysis of the environmental approach taken by companies, sectors or funds, and of its impact on financial performance.*

*The Business community is beginning to assess the impact of environmental governance*

Twenty-nine of the studies came from academia and 32 were from the business community. Most emanated from North American institutions. It is encouraging that some in the financial community have begun to examine the relevance of environmental governance (See table 6).

This suggests that investors are beginning to recognise the need to carry out empirical investigations into any financial connections.

Some very detailed and cutting-edge work has recently been carried out by or in partnership with financial consultants, leading banks and fund managers. These include ABP, Arthur D. Little, Commerzbank, Pictet, Sarasin and WestLB. Ten of the 60 studies were published by financial institutions.

In each study, the report classifies the nature of the relationship between environmental governance and financial performance. The classification system looks at whether the link was positive, negative or neutral. It is summarised in table 7 below.

<table>
<thead>
<tr>
<th>Table 5</th>
<th>The table below shows the breakdown of studies reviewed by type:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fund studies</td>
<td>Sector studies</td>
</tr>
<tr>
<td>15</td>
<td>15</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Table 6</th>
<th>Origin of studies by country and authorship:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>North America</td>
</tr>
<tr>
<td>Academia</td>
<td>21</td>
</tr>
<tr>
<td>Business</td>
<td>18</td>
</tr>
<tr>
<td>NGO/not-for-profit</td>
<td>3</td>
</tr>
<tr>
<td>Government</td>
<td>2</td>
</tr>
<tr>
<td>Total</td>
<td>44</td>
</tr>
</tbody>
</table>

*Note – Several of the studies were co-authored by different organisations, based in different countries. The total number of studies in the table above therefore adds up to more than 60.*

<table>
<thead>
<tr>
<th>Table 7</th>
<th>Classification system definitions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Negative correlation</strong></td>
<td><strong>Neutral correlation</strong></td>
</tr>
<tr>
<td>High environmental governance standards but poor financial performance</td>
<td>High environmental governance standards but no change in financial performance</td>
</tr>
<tr>
<td>Low environmental governance standards but strong financial performance</td>
<td>Low environmental governance standards but no change in financial performance</td>
</tr>
</tbody>
</table>
The literature review revealed that there are four different approaches to assessing the evidence for the link between environmental governance and financial performance. Evidence comes from:

i) empirical studies looking at the statistical relationship with financial performance;

ii) company, sector or fund case studies;

iii) academic theory/thinking;

iv) research findings from rating agencies and investment managers.

*The literature review found strong evidence for the existence of a positive relationship between environmental governance and financial performance.*

In 51 of the 60 studies reviewed, a positive correlation was found between environmental governance and financial performance (see figure 1).

In other words, in most cases the current research suggests that good environmental governance can deliver financial benefits – and vice versa.

*Results from fund, sector and company analyses are all generally positive*

The majority of studies demonstrated a positive correlation between environmental governance and financial performance. This was irrespective of whether they were looking at companies, sectors or investment in funds which had an environmental element (see figures 2-4).

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**Figure 1**  
Number of positive, neutral and negative correlations found

*Note – where a range of environmental governance and/or financial measures are considered in a single study, a combination of positive, neutral and/or negative correlations between different measures is possible within that study’s conclusions. The total number of correlations in the chart above therefore adds up to more than 60.*
Most of the research looks at the impact of an environmental strategy

A high proportion of the studies examined in the literature review focused on a limited range of environmental governance measures.

In nearly half the studies reviewed, the financial effect of an overarching environmental strategy was the main or only area of analysis (see figure 5).

The different components of an environmental strategy were rarely identified or assessed separately. These components include specific principles, objectives, targets and policy focus.

Climate change strategy is now high on the research agenda

A fifth of the studies looked at the potential benefits of implementing a climate change strategy. Research into the possible opportunities and risks associated with climate change is becoming more common. Climate change is fast becoming the single most prominent environmental issue. This is perhaps not unsurprising given its high profile and the incoming legislation and regulation in areas such as carbon emissions.

The UK Government’s Energy White Paper was published in February 2003. It set out a new vision for the country’s energy policy and puts the UK on the path to cutting its carbon dioxide emissions by 60% by 2050.

In November 2003, Environment Secretary Margaret Beckett told a City audience that those companies and investors which are well informed about the risks of climate change will be best placed both to protect themselves, and to invest in cleaner technologies.

At the Institutional Investors’ Group on Climate Change (IIGCC) conference, the Secretary of State said that climate change is a crucial issue for UK investors and business, and that it represents major opportunities to invest in new cleaner technologies and to trade in greenhouse gas emissions.

Environmental events

The impact of toxic emissions, pollutant spills and releases – and the fines that accompanied them – was the subject of many of the studies (23 and 21 of the 60 studies respectively). Figure 6 below gives the breakdown of the different environmental events considered in the studies included in the literature review.
It is surprising that the impact of different types of pollution incident on financial performance has been assessed far less than the impact of a broad environmental strategy. Financial impacts of fines and penalties can be more directly linked to operating costs and profitability than can overall policy goals. It might therefore be assumed that literature looking at environmental governance would focus more on the relevance of pollution control.

Studies focus on a narrow set of financial indicators
The studies identified in the literature review focused on how environmental governance impacts on just four financial indicators:

i) shareholder value  
ii) share price  
iii) operating costs  
iv) risk and reputation issues.

These indicators represent some of the key tests of financial performance. Using these broad measures of financial performance should help mainstream investors and financial analysts to understand the impact of environmental governance.

Case studies
Although the literature review sourced 30 company studies, only one of these focused on the performance of a single company (Exxon Mobil). To an extent, this result was anticipated. It is one of the reasons we undertook a separate assessment of the performance of individual companies, using 15 case studies (as listed in table 1 above, nine of which looked at individual companies).

The relevance of examining the performance of individual companies was highlighted by a recent case concerning Associated British Ports (ABP), Britain’s largest ports operator. In April 2004, ABP saw £155 million wiped off its market value after the UK government blocked the company’s plans for a new container terminal at a site in the south of England.

Shares in the company fell by 47p following the announcement, a fall of almost 10% in a single day. The company’s plans were for a deep water terminal at Dibden Bay, near Southampton. These were rejected after opposition from environmental campaigners, who claimed it would wreck important wildlife locations. The government admitted that one major factor in its decision was the potential environmental impact of the company’s proposals.

Such cases demonstrate very clearly that business strategies are often inextricably linked to environmental issues.

The companies chosen for the individual case studies were selected because, by and large, they had each implemented a different measure of environmental governance. This helps to assess whether certain measures of environmental governance may have related financial impacts. It also means that the case studies look beyond the impact of a broad environmental strategy, which had been the predominant focus of the existing literature.

Many case study examples demonstrate a link between environmental governance and financial performance
The case studies undertaken in this report also show that where environmental governance systems have been implemented, or where environmental performance has been good or has improved, there is evidence of a discernable and beneficial impact on the financial performance of the companies, sectors or funds studied. Some examples are provided below:

- The performance of the Jupiter Ecology Fund has been impressive, giving a better investment return (see figure 7).
- Forest and paper products companies with above average environmental governance standards and above average environmental track record do well in business terms. They financially out-performed companies with below average ratings by more than 43% (4,300 basis points) over the four years from March 1999 to March 2003 (see figure 8).
- Out-performance was not confined to the best environmental performers in the paper and forest products sector. The companies with the best environmental records/approach also out-performed in the integrated oil and gas, water utilities and EU and US electric utilities sectors.
• In the integrated oil and gas sector, the top environmentally rated firms out-performed laggards by 11.8% over three years and 2.6% over one year.

• Over three years, the stock price of EU electric utilities with above average environmental performance was 39% above that of below average performers. The stock prices of the top and bottom environmental performers in the US electricity sector demonstrated the same pattern.

• In the water utilities sector, environmental leaders out-performed laggard companies by 4.5 percentage points over the three-year period.

Examples taken from the company case studies showed how environmental management in areas such as environmental risk reduction and pollution control impact on direct costs and create savings.

• Baxter International uses systematic monitoring, recording and target setting to reduce environmental risks to business. These improvements saved US$12.7 million in 2002, with cost avoidance at US$52 million. As the table below shows, Baxter’s efforts have resulted in a significant reduction of operating costs. In total, environmental efforts saved US$65 million in 2002 (see table 8).

• At 3M, global fines for the company were US$85,000 in 1998 compared to US$253,000 in 1990. Its share price has grown steadily since the company introduced its environmental programme (see figure 9).

• At Monsanto, a long-running lawsuit was recently settled for US$396 million on Monsanto’s part. Solutia, previously owned by the former Monsanto, paid up to US$200 million in remediation costs and filed for bankruptcy protection.

• Xstrata’s share price fell by about 5% on one day in June 2002. This coincided with news that Japan was considering a coal tax. In 2003, Xstrata published its first sustainability report, revealing new environmental governance structures and policies throughout the company. A follow-up report was published in April 2004. Portfolio diversification has reduced exposure to future carbon risk and there has been a possible improvement in corporate image in terms of its environmental governance, thanks to increased transparency on environmental issues management (see figure 10).

**Figure 8** Percentage change in total return of environmental leaders versus laggards in the forest and paper products sector 1999 – 2003

![Graph showing percentage change in total return of environmental leaders versus laggards in the forest and paper products sector 1999 – 2003](image_url)

*Note – figures and results are based on Innovest proprietary ratings of above and below average performers.*
Table 8
The table below illustrates the significant reduction in operating costs from Baxter International’s Environmental efforts.

<table>
<thead>
<tr>
<th>Environmental Costs ($ million)</th>
<th>2002</th>
<th>2001</th>
<th>2000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental Costs ($ million)</td>
<td>23</td>
<td>22</td>
<td>23</td>
</tr>
</tbody>
</table>

Environmental Savings ($ million)

<table>
<thead>
<tr>
<th>Environmental Savings ($ million)</th>
<th>2002</th>
<th>2001</th>
<th>2000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air Toxics Cost Reduction</td>
<td>0</td>
<td>0</td>
<td>0.1</td>
</tr>
<tr>
<td>Hazardous Waste Disposal Cost Reductions</td>
<td>-0.2</td>
<td>-0.2</td>
<td>0.2</td>
</tr>
<tr>
<td>Hazardous Waste Material Cost Reductions</td>
<td>-1.2</td>
<td>-0.5</td>
<td>1</td>
</tr>
<tr>
<td>Non-hazardous Waste Disposal Cost Reductions</td>
<td>0.6</td>
<td>-0.6</td>
<td>0</td>
</tr>
<tr>
<td>Non-hazardous Waste Material Cost Reductions</td>
<td>4</td>
<td>-2.5</td>
<td>3.9</td>
</tr>
<tr>
<td>Recycling Income</td>
<td>2.1</td>
<td>1.8</td>
<td>3.5</td>
</tr>
<tr>
<td>Energy Conservation Cost Savings</td>
<td>4.3</td>
<td>2.7</td>
<td>2.8</td>
</tr>
<tr>
<td>Packaging Cost Reductions</td>
<td>2.9</td>
<td>2.5</td>
<td>1.3</td>
</tr>
<tr>
<td>Water Conservation Cost Savings</td>
<td>0.2</td>
<td>0.1</td>
<td>0.1</td>
</tr>
<tr>
<td>Total Cost Savings ($ million)*</td>
<td>13</td>
<td>3</td>
<td>13</td>
</tr>
</tbody>
</table>

Cost Avoidance From Efforts Initiated Since 1996 ($ million)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost Avoidance From Efforts Initiated Since 1996 ($ million)</td>
<td>52</td>
<td>57</td>
<td>61</td>
</tr>
</tbody>
</table>

Total Income, Savings & Cost Avoidance ($ million)*

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Income, Savings &amp; Cost Avoidance ($ million)*</td>
<td>65</td>
<td>60</td>
<td>74</td>
</tr>
</tbody>
</table>

Source: Baxter International (based on estimates)

Figure 9
3M share price (indexed) versus S&P 500 industrial conglomerates (indexed)

- Steady gradual share price appreciation since introducing 3P program in 1975 - savings of $894 million from 1975 to 2002.
- Incurred a $168 million non-recurring cost associated with the phase out of perfluorooctanyl (PFO)-based chemical products which have been linked to liver damage and cancer. Decided to phase out a key Scotchgard ingredient for environmental reasons in May 2000 - share price dropped 4% over next few weeks.
- In 2002, savings resulting from 3P projects amounted to $36.8 million. 3M's US resource recovery activities sold more than $53 million of equipment, paper, plastics, solvents, metals and other by-products.
- Formalized EHS management system.
- Incurred a $168 million non-recurring cost associated with the phase out of perfluorooctanyl (PFO)-based chemical products which have been linked to liver damage and cancer. Decided to phase out a key Scotchgard ingredient for environmental reasons in May 2000 - share price dropped 4% over next few weeks.

3M among defendants in a $150 million verdict awarded to six Mississippi laborers exposed to asbestos in 1960s and 1970s. Uncertainty of future liability causes share price to drop.
Future work

The table below shows that, of the 60 studies in the literature review, only 16 focused on just one or two environmental criteria and an equally small number of corresponding financial impact criteria. (See cells highlighted in green in Table 9 below.)

Many studies look at a broad range of environmental governance factors and an array of financial impacts. This makes it difficult to pin down the effect of individual environmental governance measures on specific financial measures.

Less than a quarter of the studies in the literature review attempted to assess the impact on financial performance of any kind of problematic environmental event such as a pollution incident. This is surprising: companies in developed markets are now required to operate according to strict environmental standards. They are increasingly liable to pay large fines and remediation costs if they fail to comply with these standards. More research work in this area would be welcome, in order to assess comprehensively the potential impact on financial performance of good versus poor environmental risk management systems.

It is clear that many factors, such as economic and political developments, have a potential bearing on financial impacts and influence the efficacy of good environmental governance. The degree to which the environmental effect may be overestimated is difficult to assess. It has not been tackled to any great extent in the current literature.

<table>
<thead>
<tr>
<th>Table 9</th>
<th>Number of financial measures considered</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Number of studies using only 1 environmental governance measure</td>
<td>18</td>
</tr>
<tr>
<td>Number of studies using 2 environmental governance measures</td>
<td>11</td>
</tr>
<tr>
<td>Number of studies using 3-5 environmental governance measures</td>
<td>16</td>
</tr>
<tr>
<td>Number of studies using 6-9 environmental governance measures</td>
<td>10</td>
</tr>
<tr>
<td>Number of studies using 10+ environmental governance measures</td>
<td>5</td>
</tr>
<tr>
<td>Total</td>
<td><strong>60</strong></td>
</tr>
</tbody>
</table>
Conclusion

The overall finding from the literature review is that there is strong evidence that where a company has sound environmental governance policies, practices and performance, this is highly likely to result in improved financial performance. The evidence tends to be more compelling when comparative studies are undertaken, with differences in performance between leaders and laggards being quite marked.

The case studies in this report confirm the findings of the literature review, in that changes in financial performance stemming from environmental governance measures can be demonstrated and quantified, although the extent to which these changes is due entirely to environmental governance issues is not always clear.

One area where links can be more clearly established is that of operational impacts. The cost of an eco-efficiency initiative and its financial outcomes can be measured fairly precisely when a company sets up the appropriate environmental accounting and reporting procedures. In the case of 3M and Baxter International, where the impacts could be examined over a longer period of time, it was revealed that a long term environmental governance strategy could yield a continuing financial benefit.

Further information

As stated earlier, this report is an executive summary of the main findings of the research. The full study includes further analysis, full listings and extracts from the research reviewed as part of the literature review and the full text of each of the case studies.

A copy of this report can be downloaded as a PDF from the Environment Agency website at www.environment-agency.gov.uk/business or Innovest Strategic Value Advisors web site at www.innovestgroup.com
Glossary of terms

**BMV**  
Book to Market Value. This is a measure of relative company value. It is derived by dividing the book value per share (net asset value) as per the financial accounts by the present market value (price) per share.

**CSR**  
Corporate Social Responsibility. This is essentially about demonstrating a company’s value to investors, customers and society. A socially responsible company would act responsibly in all its locations and implement measures in relation to this. For example, this may include environmental stewardship, ensuring fair trade and equal opportunities, providing truthful reporting and communication, ensuring positive community relations and governance, and giving back to society.

**EBIT**  
Earnings Before Interest and Taxes. This is a measure of a company’s earning power from ongoing operations. It is equal to earnings before deduction of interest payments and income taxes. EBIT represents the amount of cash that a company will be able to use to pay creditors. EBIT is also called operating profit.

**EBITDA**  
Earnings Before Interest, Taxes, Depreciation and Amortisation. This is a measure of a company’s operating cashflow based on data from the company’s income statement. It is calculated by looking at earnings before the deduction of interest expenses, taxes, depreciation, and amortisation. EBITDA is a useful measure for large companies with significant assets, and/or for companies with a significant amount of debt financing.

**EVA**  
Economic Value Added. This is the monetary value of an entity at the end of a time period minus the monetary value of that same entity at the beginning of that time period.

**Market Cap**  
Market Capitalisation. This is the market price of an entire company. It is calculated by multiplying the number of shares outstanding by the price per share.

**Market Share**  
This is the percentage of the total sales of a given type of product or service that is attributable to a given company.

**MVA**  
Market Value Added. This is the difference between the market value of a company (both equity and debt) and the capital contributed by investors. If it is positive, the company has increased the value of the capital entrusted to it. If it is negative, the company has destroyed value.

**Operating Costs**  
These are the day-to-day expenses incurred in running a business, (i.e. sales and administration).

**P/E Ratio**  
Price/Earnings Ratio. This represents the valuation ratio of a company’s current share price compared to its per-share earnings. The P/E ratio is equal to a stock’s market capitalisation divided by its after-tax earnings over a 12-month period. This is also called the earnings multiple.

**ROA**  
Return on Assets. This is a measure of a company’s profitability. It is derived by dividing a fiscal year’s earnings by total assets.

**ROCE**  
Return on Capital Employed. This is a measure of the returns that a company realizes from its capital. It is calculated as profit before interest and tax divided by the difference between total assets and current liabilities. The figure represents the efficiency with which capital is being utilised to generate revenue.

**ROE**  
Return on Equity. This is a measure of how well a company has used reinvested earnings to generate additional earnings. It is derived by dividing net income by book value. It is effectively how much profit a company is able to generate given the resources provided by shareholders.
ROIC  Return on Invested Capital. This is a measure of how effectively a company uses money (borrowed or owned) invested in its operations. It is calculated by dividing net income after taxes by total capital.

Share Price  This is the price of one share of stock.

Shareholder Value  This is the value that a shareholder is able to obtain from investment in a company. It includes capital gains, dividend payments, proceeds from buyback programmes and any other payouts.

SRI  Socially Responsible Investment. This involves, to varying degrees, the consideration or incorporation of social, environmental and/or ethical concerns into portfolio management.

Value driver  A factor which influences, either negatively or positively, the financial performance of the company
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