IoD *Inspiring* business

The Great Governance Debate – Towards a Good Governance Index for Listed Companies

Institute of Directors in association with Cass Business School
June 2015

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Cass Business School
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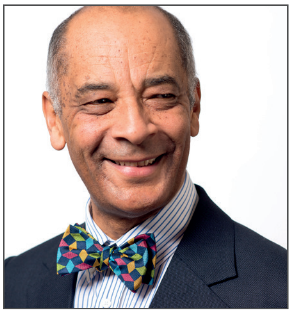
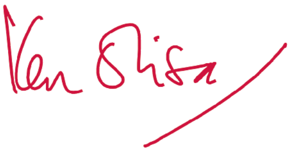
Contents

The image of a tree on the front cover of this report is a word cloud showing the words that survey respondents used most frequently when asked "What factors do you believe correlate most closely with good governance?" The more often a word was used, the larger it appears in the image; for example, openness, board and transparency appear many times (51, 45 and 44 respectively), while processes and behaviour appear less frequently (11 and 10). We believe the image of the flourishing tree, with its many component words (more than 1,200 in total), helps to reflect that governance is a complex organism needing different types of nourishment to thrive.



Ken Olisa, OBE
Director, IoD



1. Preface from the Institute of Directors
by Ken Olisa OBE, Director IoD, Chairman of the Advisory Panel

Most people would, if asked, agree that good governance is an essential prerequisite for sustainable corporate success.

That's easy to say: but what does good governance actually look like? Unlike good art, which is hard to define but easy to recognise, good governance is hard to define *and* hard to recognise.

It's hard to define because governance is all about behaviours; and behaviours – whether individual or collective – are hard to reduce to a coherent framework connecting a small number of factors.

It's hard to recognise – at least for the outside observer – because much of it takes place behind closed doors in the boardrooms and executive suites of companies. As a result, outsiders are reduced to observing consequences rather than the actual workings of the governance framework.

This poses a fundamental problem for stakeholders – investors, employees, pension fund beneficiaries or members of the general public – because they have a vested interest in good governance but lack the tools and insights to measure and influence it.

Over 20 years have elapsed since the Cadbury committee's seminal report shone a light on the respective roles of directors, shareholders and auditors. Its Code of Best Practice was designed to "achieve the necessary high standards of corporate governance". Since then, several attempts have been made to refine the code, whose original purpose was to ensure that the scandals exemplified by Maxwell and BCCI weren't repeated.

Measured against that important objective, Cadbury was successful. Corporate governance codes are increasingly regarded as important means of benchmarking good governance. Indeed, the UK Corporate Governance Code outlines a series of best practices on which premium listed companies must report annually on a 'comply or explain' basis.

However, although a commitment to the spirit of the code may contribute to better governance, there are limitations to the reassurance that pure compliance can provide. Critically, the code failed to prevent the crisis in the banking system that led to unprecedented bailouts and fines. It was also unable to stand in the way of less substantial but similarly dramatic governance failures at companies like Bumi and ENRC.

The IoD is required by its Royal Charter to promote the study, research and development of the law and practice of corporate governance. With that in mind, we have teamed up with Cass Business School and Z/Yen Partners to research these twin questions:

- What is good governance?
- How do we measure it?

To provide diversity of perspective, the IoD set up an advisory panel to review this work, drawing its membership not only from the IoD itself but also from outside. Rather encouragingly, the advisory panel proved to be a crucible for what we hope will be a wider national debate about the answers to the twin questions. Although there was unanimity within the panel on the need to go beyond governance as compliance, there were, and will continue to be, widely divergent views about how far any index can capture the essence of governance.

It is now our intention to add to the understanding of good governance by triggering a wider debate with the publication of the initial findings of our research.

And the stand-out – but perhaps unsurprising – conclusion of our research is that defining and measuring good governance is not easy!

This is not because, as I said above, that much of it necessarily takes place behind closed doors, but rather because we have come to realise that the structures that drive behaviours are essentially organic.

As with any other living organism a particular action is the result of the interaction between many separate elements. An individual director's behaviour is driven by a host of different factors, some physical, some chemical and some inexplicable. It would therefore be naïve to believe that, when many directors get together, their collective behaviour can be reduced to a small list of code-defined mechanistic items susceptible to a tick-box analysis and a red-top call to action!

Our research introduces two innovative ways of measuring the corporate governance of listed companies:

Perception study

We publish, for the first time, the results of a survey of how the governance of major UK companies is perceived by business practitioners. These practitioners belong to various constituencies, including our own members and those of the Association of Chartered Certified Accountants and the Chartered Institute for Securities and Investment, giving us, in aggregate, the wisdom of more than 400 views of what good governance looks like in practice.

Organic analysis

We have identified around 50 factors which, on the basis of publicly available information, provide an indication of the magnitude of governance risk at individual companies. Some of these factors capture 'traditional' features of a company's governance structure; for example, is there a split between the roles of chairman and CEO? Other indicators measure corporate behaviour which, indirectly, may be indicative of underlying governance problems; for example, a credit downgrade in the preceding 12 months.

The combination of these two methods enables us to propose a novel approach to defining and measuring good governance – namely that, as with any organic entity, it is the aggregation of many factors which determine an outcome and that concentration on a potentially irrelevant subset can be injurious to overall health.

Or put more simply, the IoD is asserting that the historical obsession with compliance with a tiny number of factors entirely ignores the nuance of corporate governance, much as celebrity fad diets ride roughshod over the science of human nutrition.

Surveys tell us public confidence in business is apparently at an all-time low. This is not good for business and it's not good for the UK. The IoD intends that by publishing these interim findings, we will stimulate debate – the Great Governance Debate – and so deliver a greater understanding of the intricacies of the 'body corporate' as a contribution to rebuilding the overall reputation and legitimacy of the UK business community.

Ken Olisa, OBE
Director, IoD
Ken Olisa is also a director at Independent Audit.

2. Foreword from Cass Business School
by Professor Paolo Volpin and Professor Andrew Clare, Cass Business School

A reliable corporate governance (CG) index – a combination of individual governance indicators capable of measuring the overall quality of a firm's governance – is regarded as the Holy Grail of governance research. Ideally a CG index would measure all of the characteristics that matter for corporate outcomes, and would be a valuable tool for informing both CG decisions within firms and investment decisions across firms.

Over the past 20 years, academics[1] and practitioners[2] have made several attempts at producing CG indices, so far with limited success. Existing indices have often been criticised for adopting a 'kitchen sink' approach to the problem by simply combining large numbers of indicators (typically between 50 and 100) using an arbitrary weighting scheme to produce CG index scores for companies.[3] Several critics have also argued that the 'tick-box approach' used to compile the basic CG databases for such indices can easily be gamed by companies. Such gaming can render them uninformative over time.

The ultimate test of the quality of a CG index is its usefulness to both investors and to other stakeholders in identifying future company performance. By and large, existing indices continue to fail this test: they often do not identify the best-performing companies and in some cases fail to detect the worst-performing ones.[4]

The Institute of Directors, in partnership with Cass Business School and Z/Yen, is taking on this challenge. In this document we present two important innovations. First, we use a new list of indicators that are not simply related to compliance with the UK CG code. Although the emphasis is on public information, crucially, we do not only rely on the information disclosed in annual reports. Second, the weights assigned to the individual components are inferred on the basis of surveys of customer, investor and employee assessments of the quality of the corporate governance regime of the rated companies. This methodology automatically adjusts for the perceived importance of different governance mechanisms and implicitly creates a link between the index and firm performance. This could also significantly reduce the scope for gaming and preserve the relevance of an index over time.

We believe, therefore, that these approaches could produce a more reliable index in the future, which will help us all learn what works and does not work in corporate governance.

Professor Paolo Volpin
Professor of Finance, Head of the Faculty of Finance, Cass Business School

Professor Andrew Clare
Chair in Asset Management Associate Dean for the MSc Programme, Cass Business School

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[1] La Porta, Lopez-de-Silanes, Shleifer, and Vishny (1998) created an index of shareholder and creditor protection around the world based on laws in different countries. Gompers, Ishii, and Metrick (2003) developed a firm-level governance score, the G-index, for US firms mostly based on anti-takeover features. Bebchuk, Cohen, and Ferrell (2009) further refined the G-index focusing on size components, which they labelled the E-index.

[2] Commercial providers of CG indices are ISS-RiskMetrics, GovernanceMetrics International, Egan-Jones, and The Corporate Library.

[3] See Bhagat, Bolton, and Romano (2008).

[4] See the critical evidence in Johnson, Moorman, and Sorescu (2009) on governance ratings produced by academics and Daines, Gow, and Larcker (2010) on commercial ratings.

3. Executive summary

This report sets out the initial findings from six months of research into the measurement of corporate governance in UK-listed companies. Its purpose is to encourage the study of good governance among UK companies and stimulate a public debate on the importance of corporate governance in rebuilding the reputation of the UK business community.

For the purposes of this study we have used the UK Corporate Governance Code for a high-level definition of corporate governance, and section 172 of the Companies Act 2006 for a more detailed definition:

UK Corporate Governance Code

"The purpose of corporate governance is to facilitate effective, entrepreneurial and prudent management that can deliver the long-term success of the company."

Companies Act 2006, section 172

"A director of a company must act in the way he considers, in good faith, would be most likely to promote the success of the company for the benefit of its members (shareholders) as a whole, and in doing so have regard (amongst other matters) to: the likely consequences of any decision in the long term; the interests of the company's employees; the need to foster the company's business relationships with suppliers, customers and others; the impact of the company's operations on the community and the environment; the desirability of the company maintaining a reputation for high standards of business conduct, and the need to act fairly as between members of the company."

Section 4 of the report sets out the methodology and approach used in the study. We used three different approaches to measuring corporate governance: one surveying perceptions of corporate governance by members of the UK business community; one assembling quantifiable instrumental factors which are often associated with corporate governance; and one statistically combining instrumental factors with perceptions to analyse factor weightings.

Section 5 summarises the results from the survey. They show a broad spread of perceptions, with average company assessments ranging from 424 to 900 out of a possible 1,000. We had anticipated that companies with some of the highest survey results would be from well-known brands, yet consumer service firms seem to suffer from poor public perceptions in the survey.

Section 6 sets out the results of the instrumental factor analysis, showing the companies' normalised average scores in each of five areas of governance – board effectiveness, audit and risk, remuneration and reward, shareholder relations, stakeholder relations. These results show a small range of scores (standard deviation of the average across all areas of governance is 50, maximum 725.3, minimum 500.4). However, there are numerous other valid ways of calculating an overall number from simple factors, which can produce significantly different results.

Section 7 sets out the findings from the statistical analysis investigating whether a sophisticated regression of relationships between perceptions and instrumental factors had predictive capacity. We built an assessment model using support vector machine regression to predict how a composite professional from the survey would assess corporate governance in companies with certain characteristics. This allows us to calculate the difference between overall perceptions and underlying factors. The analysis allows us to speculate on how much image trumps substance (objective measures matter, but participants don't recognise good governance), or whether the factors associated with good governance have little predictive capacity (participants do recognise good governance, but objective factors don't measure it).

Each of the approaches we assessed has thrown up different rankings of corporate governance, with individual companies obtaining very different results. Our work so far leads us to the conclusion that no one approach can yet be used to measure corporate governance. We believe that corporate governance cannot be assessed using straightforward tick-box approaches, such as measuring how a company scores against an arbitrary list of factors. Numerous studies before ours have tried to identify such factors, and like us, have come up with anomalies in their answers. Rather we tend to agree with Gerard Schnyder, who said in his 2012 paper[5]:

"It seems unlikely that ever simpler measures for firm-level corporate governance are able to account for the complex and multiple interactions that exist between corporate governance mechanisms and between these and environmental factors."

We hope that this work will stimulate a debate into what those systems are and how they can be measured, in order to improve the quality of governance, and, we hope, business performance throughout the UK.

[5] Schnyder Gerhard, 'Measuring Corporate Governance: Lessons from the "Bundles Approach"', Centre for Business Research, University of Cambridge, Working Paper No. 438, December 2012.

4. Methodology and approach

The objective of this work was to investigate different approaches to measuring corporate governance, see what kind of different results they produce, and consider how more meaningful and consistent approaches could be developed. We looked at the corporate governance of the 100 largest UK-listed companies using three different approaches:

- a survey of members of the IoD, ACCA and CISI in the UK asking them to rate the corporate governance of companies they were familiar with
- a study of instrumental factors, a range of objective, directly measurable factors drawn from external sources
- a predictive model of corporate governance using support vector machine regression

Inclusion in the study

To be included in the study a company must:

- be in the 100 largest companies listed on the London Stock Exchange on 27/3/15 (excluding investment trusts)
- have data for at least 80 per cent of the 53 instrumental factors

Survey

The online survey was aimed at UK-based professionals who were members of the IoD, ACCA and CISI. We received 407 valid responses to the initial survey during March 2015. The guidelines for the questionnaire were:

- a link to an online questionnaire (zyen.info/goodgovernance) was emailed to members
- a respondent had to rate at least three companies to be included
- company ratings from employees of that company were excluded (for future study)
- respondents were incentivised by the offer of a copy of the report and an invitation to the launch of the Great Governance Debate at the IoD

The survey is still available online as we plan to update our work every six months. In future editions, responses will be weighted by when the assessment was made, such that older assessments carry less weight.

Instrumental factors

Instrumental factors are listed in Appendix 1. The guidelines for using instrumental factors are:

- instrumental factors should come from a reputable body and be underpinned by a sound methodology
- instrumental factors should be readily available (ideally in the public domain) and be regularly updated
- updates to the instrumental factors should be collected and collated every six months
- only instrumental factors which have values for at least 80 per cent of the companies will be included

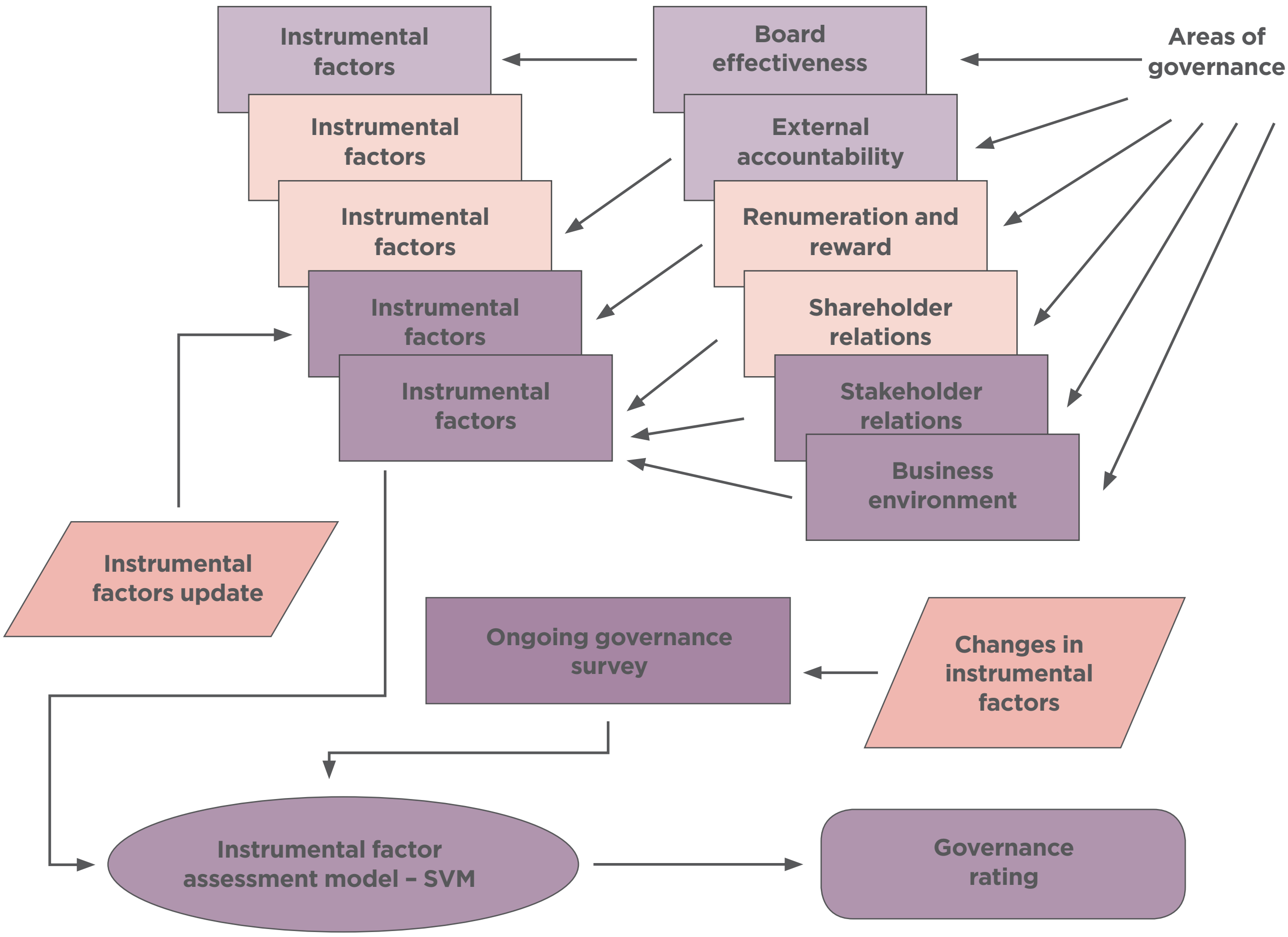
Predictive model

The company assessments and instrumental factors are used to build an instrumental-factor assessment model of corporate governance ratings using support vector machine regression. The approach uses predictive analytics similar to those of commercial online firms identifying buyer purchase criteria to estimate potential sales. The model can predict how respondents would have rated companies they are not familiar with by answering questions such as:

"If a respondent gives Companies A, B, C and D certain assessments, then, based on the relevant instrumental factors for those companies, how would that respondent rate Company E?"

Figure 1 below shows how the process works.

Predictive model process diagram



Advisory panel

The research was overseen by an advisory panel whose membership comprised two independent members as well as representatives of the IoD and Cass Business School (see Appendix 3). The advisory panel advises on and oversees the development of the methodology and each published report. To achieve this aim the advisory panel:

- advises on and oversees the construction of the different approaches
- approves the governance criteria which determine the governance ranking of individual companies and revises these in light of experience and external challenges
- reviews the robustness and integrity of the results
- oversees the final results and publications associated with the research, and advises the IoD board on whether to approve the final report
- regularly reports to the IoD Board on the panel's proceedings, as deemed appropriate by either the board or the panel

5. Survey results

Table 1 shows the initial findings from the survey of business professionals, as described in Section 4. Companies are grouped in eight tiers, according to the range of scores received. Companies are arranged in alphabetical order within tiers. Two companies received no assessments.

There is a relatively wide variation in scores, between 424 and 900. Companies with some of the highest survey results were not from the best-known brands, and featured few consumer services companies. Financial and consumer service firms seem to suffer from poor public perceptions in the survey findings.
[NB: rounding places some companies with seemingly identical scores in one tier or another from time to time]

Name	Average assessment	Industry
Tier 1: Survey score >= 800		
3I Group	833.3	Financials
Aggreko	816.7	Industrials
Bunzl	880.0	Industrials
Croda International plc	800.0	Basic materials
Fresnillo plc	800.0	Basic materials
Hikma Pharmaceuticals	800.0	Health care
ICAP	800.0	Financials
IMI	800.0	Industrials
Intertek Group	900.0	Industrials
Legal & General Group	816.7	Financials
Meggitt plc	800.0	Industrials
Old Mutual plc	814.3	Financials
Smiths Group	800.0	Industrials
Weir Group	875.0	Industrials
Tier 2: Survey score 786-799.9		
ARM Holdings	790.0	Technology
Astrazeneca plc	787.9	Health care
Carnival	788.9	Consumer services
Inchcape plc	787.5	Consumer services
Johnson Matthey	790.0	Basic materials
London Stock Exchange Group	791.7	Financials
Pearson	789.5	Consumer services
Rolls-Royce Holdings plc	796.0	Industrials
Schroders plc	786.7	Financials
Smith & Nephew	793.3	Health care
Unilever	793.8	Consumer goods

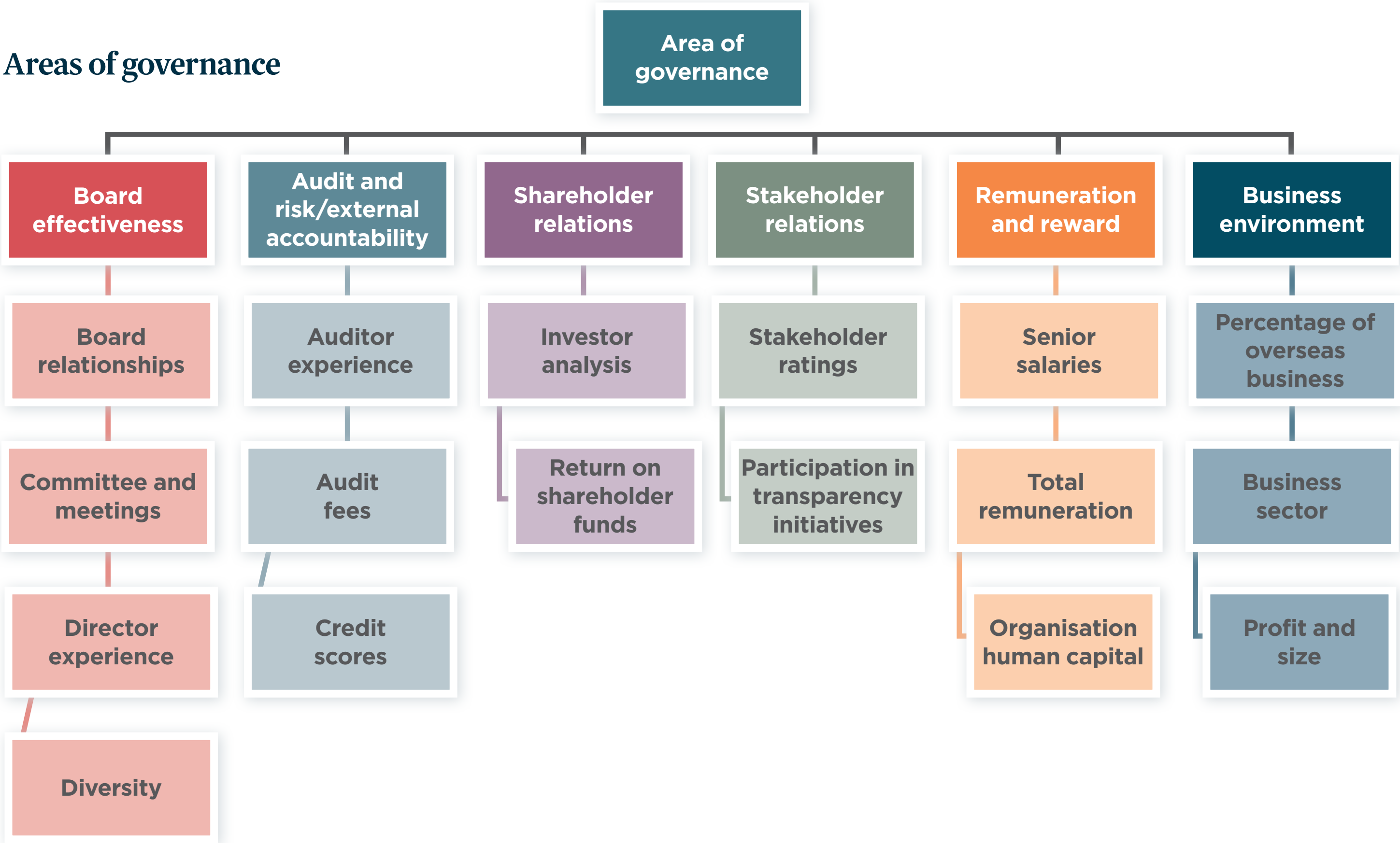
Name	Average assessment	Industry
Tier 3: Survey score 762-785.9		
Aberdeen Asset Management plc	763.2	Financials
Associated British Foods	781.8	Consumer goods
GKN	769.2	Consumer goods
Hargreaves Lansdown plc	785.7	Financials
Inmarsat	771.4	Telecommunications
Investec plc	762.5	Financials
Marks & Spencer Group	767.9	Consumer services
Merlin Entertainments plc	785.7	Consumer services
Prudential plc	770.4	Financials
Reed Elsevier	777.8	Consumer services
Sabmiller	766.7	Consumer goods
Sainsbury(J)	762.7	Consumer services
Tier 4: Survey score 731-761.9		
Aviva	741.0	Financials
Diageo	744.4	Consumer goods
Easyjet	746.0	Consumer services
Glaxosmithkline	760.4	Health care
Mondi plc	750.0	Basic materials
National Grid	731.6	Utilities
Next	744.4	Consumer services
Royal Dutch Shell	761.1	Oil & gas
Sage Group	750.0	Technology
Standard Life plc	756.4	Financials
Travis Perkins	758.3	Industrials
Whitbread	731.8	Consumer services
Tier 5: Survey score 700-730.9		
Amec Foster Wheeler plc	720.0	Oil & gas
Ashtead Group	700.0	Industrials
Babcock Intl Group plc	730.0	Industrials
BAE Systems	710.8	Industrials
Berkeley Group Holdings	723.1	Consumer goods
Bhp Billiton	700.0	Basic materials
Burberry Group	720.0	Consumer goods
Cobham	725.0	Industrials
Imperial Tobacco Group	700.0	Consumer goods
Intercontinental Hotels Group	723.5	Consumer services
RSA Insurance Group plc	720.0	Financials
SSE plc	725.0	Utilities
Vodafone Group	713.9	Telecommunications

Name	Average assessment	Industry
Tier 6: Survey score 660-699.9		
Admiral Group plc	672.7	Financials
Anglo American	677.8	Basic materials
BG Group	684.0	Oil & gas
BP	684.2	Oil & gas
Centrica plc	670.4	Utilities
Direct Line Insurance Group plc	682.4	Financials
ITV	676.0	Consumer services
Reckitt Benckiser Group plc	690.9	Consumer goods
Rio Tinto	688.9	Basic materials
Severn Trent plc	665.0	Utilities
St James's Place	687.5	Financials
Tier 7: Survey score 610-659.9		
Barratt Developments plc	658.8	Consumer goods
British American Tobacco	621.4	Consumer goods
BT Group	653.7	Telecommunications
Capita plc	642.4	Industrials
Dixons Carphone plc	616.7	Consumer services
Informa plc	633.3	Consumer services
Persimmon	640.0	Consumer goods
Provident Financial	633.3	Financials
Sky plc	624.4	Consumer services
Taylor Wimpey plc	657.1	Consumer goods
United Utilities Group plc	616.7	Utilities
Tier 8: Survey score <=609.9		
Barclays plc	549.2	Financials
Capital & Counties Properties plc	600.0	Financials
Compass Group	580.0	Consumer services
G4S plc	424.0	Industrials
HSBC Holdings	519.2	Financials
Kingfisher	609.1	Consumer services
Lloyds Banking Group plc	590.6	Financials
Morrison (Wm.) Supermarkets	557.1	Consumer services
Rexam	500.0	Industrials
Royal Bank Of Scotland Group plc	463.8	Financials
Royal Mail plc	604.0	Industrials
Sports Direct Intl plc	430.8	Consumer services
Standard Chartered	600.0	Financials
Tesco	478.5	Consumer services

6. Instrumental factors results

We identified 53 instrumental factors for this study. Forty-five of the factors are used to help assess corporate governance, while eight are used to understand the business environment of the companies, e.g. turnover, market cap. We grouped the factors into six areas of governance – see Figure 2 below.

Areas of governance



Each area of governance has an equal weighting in the table below. Alternatively it would be possible to assign weightings to individual factors. When we tested both approaches, we found that giving equal ratings to each factor reduced the average score by 0.1 points. The minimum change was a move of 0.3 points and the maximum was an increase of 67 points. Although we have chosen one approach for the purposes of this discussion, we recognise that this is an arbitrary choice, and other approaches also have merit. We explored a variety of techniques for normalisation, weighting and missing values.

The data for each factor for each company has been normalised with a minimum – maximum normalisation to fit in the range [0.0, 10.0]. The equation used is:

$$Normalised(X_{i,j}) = \frac{X_{i,j} - Min(X_j)}{Max(X_j) - Min(X_j)}$$

The same approach is used for categorical or binary data. Where data was missing, each missing value was replaced with the mean value for that factor.

An instrumental-factor approach in isolation requires analysts to choose which factors are important. When developing this analysis we discussed which factors were appropriate to include; for example, should we include information about the board structure such as the percentage of non-executive directors or the percentage of non-British directors? While these factors are tracked, are they good or bad for governance? When developing this analysis we had, therefore, to make several arbitrary decisions, which have been guided by the available evidence and the views of the advisory panel. We will be exploring this area much more in future.

Table 2 shows the analysis of instrumental factors. Companies are grouped in eight tiers, according to the range of scores received. Companies are sorted in alphabetical order within tiers.

Name	Board effective-ness average	Audit and risk/ external account-ability average	Remuner-ation and reward average	Share-holder relations average	Stake-holder relations average	Total	Average	Industry
Tier 1: Instrumental factors, score >=675.0								
Anglo American	633.0	594.6	676.8	653.3	857.7	3415.5	683.1	Basic materials
ARM Holdings	591.9	745.1	778.4	684.8	585.7	3385.9	677.2	Technology
Barclays Plc	673.5	620.1	676.9	675.0	751.7	3397.3	679.5	Financials
BG Group	723.7	819.2	740.9	673.5	625.6	3582.9	716.6	Oil & gas
Diageo	696.2	564.7	699.9	716.1	850.3	3527.2	705.4	Consumer goods
Johnson Matthey	622.0	627.1	787.3	682.2	663.3	3381.9	676.4	Basic materials
Kingfisher	664.5	747.3	741.1	684.3	598.7	3435.9	687.2	Consumer services
Legal & General Group	641.9	619.3	709.4	685.4	760.4	3416.3	683.3	Financials
Marks & Spencer Group	635.7	824.0	702.0	696.6	755.2	3613.5	722.7	Consumer services
Next	585.9	535.8	757.1	937.6	656.2	3472.7	694.5	Consumer services
Sainsbury(J)	628.9	637.7	757.9	595.1	828.0	3447.6	689.5	Consumer services
Unilever	709.1	876.3	642.4	762.7	635.8	3626.3	725.3	Consumer goods
United Utilities Group Plc	575.4	716.1	767.7	700.0	685.3	3444.6	688.9	Utilities
Tier 2: Instrumental factors, score 655.0 -674.9								
Astrazeneca Plc	710.1	626.0	696.0	663.9	668.3	3364.2	672.8	Health care
BT Group	638.1	598.0	713.0	702.6	654.2	3305.8	661.2	Telecommunications
Bunzl	621.4	867.4	723.4	685.9	416.6	3314.6	662.9	Industrials
Burberry Group	616.4	610.5	742.6	713.7	600.7	3283.9	656.8	Consumer goods
Compass Group	583.1	860.0	678.7	726.4	474.0	3322.3	664.5	Consumer services
Glaxosmithkline	580.8	601.4	628.8	752.2	738.5	3301.7	660.3	Health care
National Grid	614.8	544.1	711.2	698.7	739.1	3307.8	661.6	Utilities
Pearson	625.6	521.6	748.1	699.9	744.7	3339.9	668.0	Consumer services
Reed Elsevier	595.4	611.3	663.0	725.4	765.0	3360.1	672.0	Consumer services
Rio Tinto	702.5	625.8	661.5	660.4	631.1	3281.3	656.3	Basic materials
Royal Mail Plc	668.6	450.1	793.7	646.7	725.7	3284.9	657.0	Industrials
RSA Insurance Group Plc	618.3	952.7	760.2	637.8	340.5	3309.5	661.9	Financials
Vodafone Group	555.8	882.9	642.1	651.5	587.2	3319.6	663.9	Telecommunications

Name	Board effective-ness average	Audit and risk/ external account-ability average	Remuner-ation and reward average	Share-holder relations average	Stake-holder relations average	Total	Average	Industry
Tier 3: Instrumental factors, score 630.0 -654.9								
Aviva	603.8	588.2	719.4	684.1	659.3	3254.8	651.0	Financials
British American Tobacco	657.7	597.2	645.6	771.2	559.0	3230.8	646.2	Consumer goods
Capita Plc	600.7	738.2	809.5	675.8	444.1	3268.3	653.7	Industrials
Centrica Plc	665.0	471.9	771.1	709.5	556.1	3173.6	634.7	Utilities
Imperial Tobacco Group	603.5	587.1	719.5	705.1	547.4	3162.6	632.5	Consumer goods
Lloyds Banking Group Plc	697.0	621.2	532.2	586.5	768.3	3205.2	641.0	Financials
Old Mutual Plc	629.0	627.0	703.2	694.1	539.2	3192.5	638.5	Financials
Provident Financial	578.1	764.4	767.4	667.6	429.0	3206.4	641.3	Financials
Reckitt Benckiser Group Plc	522.2	575.1	683.9	690.5	740.7	3212.5	642.5	Consumer goods
Sky Plc	615.0	573.5	689.7	645.7	704.1	3227.8	645.6	Consumer services
Smith & Nephew	668.6	556.2	740.1	680.9	545.3	3191.1	638.2	Health care
Whitbread	674.9	621.8	724.8	690.7	532.4	3244.6	648.9	Consumer services
Tier 4: Instrumental factors, score 614.0 -629.9								
3I Group	690.2	644.5	757.4	670.6	354.2	3116.8	623.4	Financials
BAE Systems	608.6	636.8	731.3	663.0	444.0	3083.7	616.7	Industrials
Barratt Developments Plc	660.2	601.4	746.4	661.2	402.8	3072.0	614.4	Consumer goods
Berkeley Group Holdings	511.5	865.4	736.3	682.1	295.6	3090.9	618.2	Consumer goods
IMI	577.8	629.0	815.5	708.7	394.6	3125.7	625.1	Industrials
Intertek Group	682.1	549.2	762.0	717.8	420.8	3131.8	626.4	Industrials
ITV	636.4	599.1	674.2	727.4	436.9	3074.0	614.8	Consumer services
Morrison (Wm.) Supermarkets	648.8	677.7	773.5	663.7	327.0	3090.7	618.1	Consumer services
Rexam	639.4	582.1	751.4	690.3	462.4	3125.6	625.1	Industrials
Rolls-Royce Holdings Plc	608.5	677.5	707.4	669.7	413.0	3076.1	615.2	Industrials
Royal Bank Of Scotland Group Plc	700.3	694.6	788.2	397.0	566.1	3146.2	629.2	Financials
Sabmiller	608.7	606.7	687.0	596.6	591.3	3090.3	618.1	Consumer goods
SSE Plc	602.5	678.8	754.3	667.6	404.0	3107.3	621.5	Utilities
Weir Group	663.0	572.9	782.8	706.1	406.4	3131.3	626.3	Industrials

Name	Board effective-ness average	Audit and risk/ external account-ability average	Remuner-ation and reward average	Share-holder relations average	Stake-holder relations average	Total	Average	Industry
Tier 5: Instrumental factors, score 590.0 -613.9								
Aggreko	594.4	624.5	751.8	699.5	325.3	2995.4	599.1	Industrials
Bhp Billiton	735.0	629.8	691.9	650.7	339.4	3046.8	609.4	Basic materials
Carnival	730.5	608.8	809.4	674.0	199.0	3021.8	604.4	Consumer services
Croda International Plc	529.2	555.5	798.2	728.6	432.0	3043.5	608.7	Basic materials
G4S Plc	605.5	685.3	752.8	604.5	327.2	2975.3	595.1	Industrials
Hargreaves Lansdown Plc	537.0	886.9	754.6	665.6	114.4	2958.5	591.7	Financials
Hikma Pharmaceuticals	610.8	610.5	785.3	600.9	346.8	2954.3	590.9	Health care
London Stock Exchange Group	605.9	606.7	716.4	637.8	448.6	3015.4	603.1	Financials
Prudential Plc	525.2	612.8	613.7	674.7	595.7	3022.2	604.4	Financials
Sage Group	643.3	600.9	763.0	711.1	332.9	3051.3	610.3	Technology
Severn Trent Plc	642.7	585.5	771.6	681.4	354.6	3035.7	607.1	Utilities
Tier 6: Instrumental factors, score 580.0 -589.9								
Aberdeen Asset Management Plc	569.7	604.1	670.1	642.4	416.1	2902.5	580.5	Financials
Admiral Group Plc	652.1	634.3	806.4	724.2	119.1	2936.1	587.2	Financials
Amec Foster Wheeler Plc	654.2	658.7	742.8	697.3	189.9	2943.0	588.6	Oil & gas
Associated British Foods	646.1	534.7	711.9	469.4	572.5	2934.6	586.9	Consumer goods
Capital & Counties Properties Plc	545.9	764.6	732.3	658.4	219.0	2920.2	584.0	Financials
Cobham	676.7	587.6	769.4	662.2	206.6	2902.6	580.5	Industrials
HSBC Holdings	642.5	619.0	349.8	678.7	633.9	2924.0	584.8	Financials
Mondi Plc	663.6	632.5	724.7	671.9	234.0	2926.8	585.4	Basic materials
Royal Dutch Shell	689.9	591.4	578.8	659.4	410.5	2930.0	586.0	Oil & gas
St James's Place	505.8	634.3	782.3	732.5	246.7	2901.6	580.3	Financials
Standard Life Plc	643.5	610.5	703.8	360.1	601.4	2919.3	583.9	Financials

Name	Board effective-ness average	Audit and risk/ external account-ability average	Remuner-ation and reward average	Share-holder relations average	Stake-holder relations average	Total	Average	Industry
Tier 7: Instrumental factors, score 565.0 -579.9								
BP	690.9	627.3	595.6	569.0	346.0	2828.7	565.7	Oil & gas
Dixons Carphone Plc	576.0	625.2	817.5	649.3	189.9	2857.8	571.6	Consumer services
GKN	548.0	621.8	766.5	686.3	202.1	2824.8	565.0	Consumer goods
Informa Plc	624.3	606.9	822.1	692.7	132.8	2878.7	575.7	Consumer services
Inmarsat	639.7	574.6	791.1	663.7	189.9	2858.9	571.8	Telecommunications
Investec Plc	588.3	629.4	739.7	659.4	212.0	2828.8	565.8	Financials
Man Group Plc	650.3	806.3	684.5	668.3	74.0	2883.4	576.7	Financials
Meggitt Plc	604.5	639.4	782.7	640.8	168.1	2835.5	567.1	Industrials
Persimmon	450.5	639.6	772.7	692.4	332.4	2887.6	577.5	Consumer goods
Smiths Group	672.8	626.6	740.2	689.6	110.0	2839.2	567.8	Industrials
Tesco	671.0	307.1	719.1	680.1	507.0	2884.3	576.9	Consumer services
Travis Perkins	520.8	638.6	789.8	682.9	220.7	2852.8	570.6	Industrials
Tier 8: Instrumental factors, score 500.0 -564.9								
Antofagasta	665.7	623.6	604.0	505.5	229.0	2627.8	525.6	Basic materials
Ashtead Group	493.1	618.8	765.9	724.2	134.0	2736.0	547.2	Industrials
Babcock Intl Group Plc	564.5	555.1	749.2	357.9	275.3	2502.0	500.4	Industrials
Direct Line Insurance Group Plc	683.3	628.4	728.5	680.3	100.4	2820.7	564.1	Financials
Easyjet	641.4	648.5	739.7	571.8	212.9	2814.4	562.9	Consumer services
Fresnillo Plc	700.5	621.1	731.3	381.6	197.4	2631.9	526.4	Basic materials
ICAP	548.1	621.7	775.9	633.2	75.0	2653.8	530.8	Financials
Inchcape Plc	605.5	608.5	743.7	671.6	75.2	2704.6	540.9	Consumer services
Intercontinental Hotels Group	650.0	575.8	708.2	365.5	394.0	2693.6	538.7	Consumer services
Merlin Entertainments Plc	566.9	634.3	855.3	582.0	74.0	2712.6	542.5	Consumer services
Schroders Plc	545.3	563.7	679.2	561.1	414.9	2764.1	552.8	Financials
Sports Direct Intl Plc	455.6	698.1	842.3	483.5	74.0	2553.6	510.7	Consumer services
Standard Chartered	568.0	553.5	434.9	629.5	607.7	2793.6	558.7	Financials
Taylor Wimpey Plc	597.4	605.7	702.6	687.1	195.5	2788.3	557.7	Consumer goods

7. Creating a predictive model

As discussed above, the results from the survey and instrumental factors are very different. This leads us to the conclusion that although the data was accurate, and people's perceptions were honest, neither approach could be considered valid on its own. We wondered if it was possible to create a model using both sets of results, to build a deeper understanding of corporate governance.

We built an assessment model using support vector machine regression to predict how a professional would assess corporate governance in companies with certain characteristics, based on how that professional would rate other companies. We built the model using two distinct sets of input, the company assessments and instrumental factors.

We are able to calculate whether there is a correlation between instrumental factors and governance assessment. It is clear that no single instrumental factor correlates strongly with governance (see Appendix 1). In the regressions, the model assigns combinatorial weightings to the different factors to reconcile how perceptions correspond with governance factors.

Table 3 below shows the initial findings from the analysis of the predictive model. Companies are grouped in eight tiers, according to their score in the predictive model. Companies are arranged in alphabetical order within tiers. Differences between the results of the survey and the results of the predictive model are indicated using the following key:

- ↑↑↑ Major increase – increase of more than 100 points
- ↑↑ Moderate increase – increase between 50 and 100 points
- ↑ Minor increase – increase between zero and 50 points
- ↓ Minor decrease – decrease between zero and 50 points
- ↓↓ Moderate decrease – decrease between 50 and 100 points
- ↓↓↓ Major decrease – decrease of more than 100 points

Name	Change from survey result to predictive model result	Industry
Tier 1: Predictive model score, score 683 – 724		
ARM Holdings	↓↓↓	Technology
Ashtead Group	↑	Industrials
Astrazeneca plc	↓↓↓	Health care
Berkeley Group Holdings	↓	Consumer goods
Carnival	↓↓	Consumer services
Croda International plc	↓↓↓	Basic materials
Diageo	↓↓	Consumer goods
Inmarsat	↓↓	Telecommunications
Johnson Matthey	↓↓↓	Basic materials
National Grid	↓	Utilities
Royal Dutch Shell	↓↓	Oil & gas
Unilever	↓↓	Consumer goods

Name	Change from survey result to predictive model result	Industry
Tier 2: Predictive model score, score 678 – 682		
Aberdeen Asset Management plc	↓↓	Financials
Aggreko	↓↓↓	Industrials
Bhp Billiton	↓	Basic materials
Bunzl	↓↓↓	Industrials
Easyjet	↓↓	Consumer services
Intercontinental Hotels Group	↓	Consumer services
Marks & Spencer Group	↓↓	Consumer services
Meggitt plc	↓↓	Industrials
Next	↓↓	Consumer services
Sabmiller	↓↓	Consumer goods
Standard Life plc	↓↓	Financials
Whitbread	↓↓	Consumer services
Tier 3: Predictive model score, score 674 - 677		
3I Group	↓↓↓	Financials
Centrica plc	↑	Utilities
Cobham	↓↓	Industrials
Glaxosmithkline	↓↓	Health care
Hargreaves Lansdown plc	↓↓↓	Financials
Imperial Tobacco Group	↓	Consumer goods
ITV	↑	Consumer services
Prudential plc	↓↓	Financials
Smith & Nephew	↓↓↓	Health care
Smiths Group	↓↓↓	Industrials
SSE plc	↓	Utilities
Vodafone Group	↓	Telecommunications

Name	Change from survey result to predictive model result	Industry
Tier 4: Predictive model score, score 669 - 673		
Burberry Group	↓	Consumer goods
Hikma Pharmaceuticals	↓↓↓	Health care
Inchcape plc	↓↓↓	Consumer services
Intertek Group	↓↓↓	Industrials
Investec plc	↓↓	Financials
Legal & General Group	↓↓↓	Financials
Merlin Entertainments plc	↓↓↓	Consumer services
Pearson	↓↓↓	Consumer services
Rolls-Royce Holdings plc	↓↓↓	Industrials
Sage Group	↓↓	Technology
Sainsbury(J)	↓↓	Consumer services
Weir Group	↓↓↓	Industrials
Tier 5: Predictive model score, score 664 - 668		
Amec Foster Wheeler plc	↓↓	Oil & gas
Aviva	↓↓	Financials
BAE Systems	↓	Industrials
British American Tobacco	↑	Consumer goods
Capita plc	↑	Industrials
Compass Group	↑↑	Consumer services
GKN	↓↓↓	Consumer goods
ICAP	↓↓↓	Financials
IMI	↓↓↓	Industrials
London Stock Exchange Group	↓↓↓	Financials
Schroders plc	↓↓↓	Financials
St James's Place	↓	Financials
Tier 6: Predictive model score, score 655 - 663		
Associated British Foods	↓↓↓	Consumer goods
Barratt Developments plc	↓	Consumer goods
BG Group	↓	Oil & gas
Mondi plc	↓↓	Basic materials
Old Mutual plc	↓↓↓	Financials
Persimmon	↑	Consumer goods
Reckitt Benckiser Group plc	↓	Consumer goods
RSA Insurance Group plc	↓↓	Financials
Severn Trent plc	↓	Utilities
Sky plc	↑	Consumer services
Taylor Wimpey plc	↑	Consumer goods
Travis Perkins	↓↓	Industrials

Name	Change from survey result to predictive model result	Industry
Tier 7: Predictive model score, score 639 - 654		
Admiral Group plc	↓	Financials
Anglo American	↓	Basic materials
BP	↓	Oil & gas
BT Group	↓	Telecommunications
Direct Line Insurance Group plc	↓	Financials
Dixons Carphone plc	↑	Consumer services
Provident Financial	↑	Financials
Reed Elsevier	↓↓↓	Consumer services
Rexam	↑↑↑	Industrials
Rio Tinto	↓	Basic materials
Royal Mail plc	↑	Industrials
United Utilities Group plc	↑	Utilities
Tier 8: Predictive model score, score 553 - 638		
Antofagasta	↑↑↑	Basic materials
Babcock Intl Group plc	↓↓↓	Industrials
Barclays plc	↑↑↑	Financials
Capital & Counties Properties plc	↑	Financials
Fresnillo plc	↓↓↓	Basic materials
G4S plc	↑↑↑	Industrials
HSBC Holdings	↑↑	Financials
Informa plc	↑	Consumer services
Kingfisher	↑	Consumer services
Lloyds Banking Group plc	↑	Financials
Man Group plc	↑↑↑	Financials
Morrison (Wm.) Supermarkets	↑↑↑	Consumer services
Royal Bank Of Scotland Group Plc	↑↑↑	Financials
Sports Direct Intl plc	↑↑↑	Consumer services
Standard Chartered	↑	Financials
Tesco	↑↑↑	Consumer services

8. Interim conclusions and next steps

Different questions give different answers

We can see from the results in Sections 5, 6 and 7 that different methods of assessing corporate governance can lead to a variety of results. Alternative approaches are possible and defendable when creating any model, even though the results may vary significantly.

Companies with higher governance scores have reputational advantage

We look at reputation by comparing the raw scores companies receive in the survey with the scores assigned by the model. If a company has a lower score from respondents than it received in the model, this indicates that respondents' perceptions are less favourable than the instrumental factors alone would suggest. Companies that scored well in the predictive model (the first tier) have an average reputational advantage of 71.

High-profile companies have reputational disadvantage

Companies with lower scores in the predictive model (lowest tier) suffer from an average reputational disadvantage of -42. High-street banks have some of the strongest reputational disadvantages, ranging from -47 to -124.

Range of scores is relatively narrow

We also note that the range of scores produced in the predictive model is relatively narrow. It may be that lower-scoring companies are already moving to develop and improve governance to deliver the levels seen by the higher-scoring companies.

Governance is a complex system

The range of results from the instrumental factors in Section 6 above shows us that no single factor can determine how well a company delivers corporate governance. Companies that wish to improve their governance should address a wide variety of factors. Governance should be seen as the responsibility of the whole organisation.

Next steps

We believe that this work has reached an exciting point. We hope that further work with the UK business community will allow us to develop our understanding of which factors can affect corporate governance. If we can achieve success in making corporate governance measurable to some degree, we will be significantly closer to understanding what good corporate governance is, and how the UK business community can deliver it.

We launch the debate in order to gain wider input from the business community and look forward to your contributions.

If you have any comments about what has been outlined in this report, or discussed at the launch event on 16 June, please email Oliver Parry, secretary to the advisory panel, at oliver.parry@iod.com.

Appendix 1 Instrumental factors

Creating a predictive model enabled us to investigate whether there was a strong correlation between any of the instrumental factors and corporate governance. The table below shows the correlation between each instrumental factor and governance ratings in the predictive model.

We can see that no single instrumental factor stands out as having a strong correlation with governance. The most significant single-factor correlations are the percentage of shares held by a single shareholder and position in the Most Admired Companies rankings.

		Predictive model analysis				
Area of governance	**Instrumental factor**	**Measure**	**R-SQ**	**R-SQ Class**	**Correlation**	**Impact**
Board effectiveness	Separate CEO and Chairman	Yes/No	0.0020	Very minor	-0.0446	Negative
Board effectiveness	Independent Chairman	Yes/No	0.0171	Minor	0.1308	Positive
Board effectiveness	Is chairman on nomination committee	Yes/No	0.1054	Moderate	0.3246	Positive
Board effectiveness	Number of audit committee meetings in last year	Number	0.0164	Minor	-0.1280	Negative
Board effectiveness	Number of remuneration committee meetings in last year	Number	0.0098	Very minor	-0.0991	Negative
Board effectiveness	Number of nomination committee meetings in last year	Number	0.0195	Minor	0.1397	Positive
Board effectiveness	Percentage of NEDs	%	0.0480	Moderate	-0.2191	Negative
Board effectiveness	Percentage of executive directors	%	0.0461	Moderate	0.2148	Positive
Board effectiveness	Number of board members	Number	0.0065	Very minor	-0.0807	Negative
Board effectiveness	Percentage of directors on board more than nine years	%	0.0111	Minor	0.1053	Positive
Board effectiveness	Percentage of directors resigned or voted off in last three years	%	0.0019	Very minor	0.0430	Positive
Board effectiveness	Percentage of women directors	%	0.0036	Very minor	0.0599	Positive
Board effectiveness	Percentage of non-British directors	%	0.0175	Minor	-0.1322	Negative
Board effectiveness	Average number of boards a director sits on	Number	0.0059	Very minor	-0.0768	Negative
Board effectiveness	Percentage of board meetings attended per director (by exec)	%	0.0109	Minor	0.1042	Positive
Board effectiveness	Percentage of board meetings attended per director (by non-exec)	%	0.0114	Minor	0.1066	Positive
Board effectiveness	Number of board meetings held	Number	0.0000	Minimal	0.0032	Positive
Board effectiveness	Less than eight or more than 15 directors	Yes/No	0.0004	Minimal	-0.0209	Negative

Area of governance	Instrumental factor	Predictive model analysis				
		Measure	R-SQ	R-SQ Class	Correlation	Impact
Audit and risk/external accountability	Years with current audit company	Number	0.0016	Very minor	-0.0398	Negative
Audit and risk/external accountability	Audit company	Codified Name	0.0237	Minor	0.1541	Positive
Audit and risk/external accountability	Ratio of fees for non-audit/audit work to auditors	%	0.0005	Minimal	-0.0216	Negative
Audit and risk/external accountability	Downgraded credit rating (QUI score) percentage in last 12 months	%	0.0368	Moderate	0.1918	Positive
Audit and risk/external accountability	Number of profit warnings in last 12 months	Number	0.0004	Minimal	-0.0197	Negative
Remuneration and reward	Director salary – chairman	Number	0.0780	Moderate	-0.2792	Negative
Remuneration and reward	Director salary – CEO	Number	0.0286	Minor	-0.1690	Negative
Remuneration and reward	Director salary – total executive directors	Number	0.0157	Minor	-0.1252	Negative
Remuneration and reward	Director salary – total NEDs	Number	0.0610	Moderate	-0.2470	Negative
Remuneration and reward	Director remuneration – chairman	Number	0.0012	Very minor	-0.0343	Negative
Remuneration and reward	Director remuneration – CEO	Number	0.0222	Minor	0.1491	Positive
Remuneration and reward	Director remuneration – total executive directors	Number	0.0021	Very minor	0.0463	Positive
Remuneration and reward	Director remuneration – total NEDs	Number	0.0331	Moderate	-0.1820	Negative
Remuneration and reward	Ratio between CEO remuneration and share price	%	0.0304	Moderate	-0.1744	Negative
Remuneration and reward	Total value of equity-based compensation paid to board	Number	0.0664	Moderate	0.2576	Positive
Shareholder relations	Type of largest shareholder	Institutional/ personal	0.0104	Minor	-0.1020	Negative
Shareholder relations	Shareholder meetings held in last 12 months (EGM)	Number	0.0024	Very minor	-0.0491	Negative
Shareholder relations	Return on shareholder fund	Number	0.0344	Moderate	0.1855	Positive
Shareholder relations	Percentage of shares held by single largest shareholder	%	0.2485	Moderate	-0.4985	Negative
Stakeholder relations	Most admired companies	Score	0.1179	Moderate	0.3433	Positive
Stakeholder relations	Inclusion in FTSE4Good	Yes/No	0.0017	Very minor	0.0418	Positive
Stakeholder relations	Percentage of overseas business in EU/EEA/USA (three levels)	%	0.0029	Very minor	0.0534	Positive
Stakeholder relations	Number of subsidiaries (three levels)	Number	0.0022	Very minor	-0.0472	Negative

		Predictive model analysis				
Area of governance	Instrumental factor	Measure	R-SQ	R-SQ Class	Correlation	Impact
Stakeholder relations	Participating in information initiatives, e.g. Carbon Disclosure Programme	Score	0.0019	Very minor	0.0431	Positive
Stakeholder relations	Participating in information initiatives, e.g. Global Reporting Initiative	Yes/No	0.0000	Minimal	0.0019	Positive
Stakeholder relations	Business in the Community Corporate Responsibility Index 2014	Yes/No	0.0013	Very minor	0.0359	Positive
Stakeholder relations	Inclusion in RobecoSam Sustainability Yearbook 2015	Banded rating (1-4)	0.0070	Very minor	-0.0838	Negative
Business environment	Business size (turnover)	Number	0.0041	Very minor	0.0641	Positive
Business environment	Years as a listed company	Number	0.0037	Very minor	0.0611	Positive
Business environment	Ratio of CEO remuneration to market cap	Number	0.0088	Very minor	0.0939	Positive
Business environment	Ratio of total remuneration to earnings	Number	0.0009	Minimal	0.0292	Positive
Business environment	Market value over balance sheet ratio	Number	0.0027	Very minor	0.0524	Positive
Business environment	Share price volatility over five years	Number	0.0072	Very minor	-0.0847	Negative
Business environment	Profit volatility over five years	Number	0.0062	Very minor	0.0790	Positive
Business environment	Market cap (£m)	Number	0.0002	Minimal	-0.0126	Negative

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Appendix 3 Advisory panel

Ken Olisa, OBE

Chairman of the advisory panel

Ken Olisa is founder and chairman of Restoration Partners, the boutique technology merchant bank. His technology career spans over 30 years commencing with IBM from whom he won a scholarship while at Fitzwilliam College, Cambridge University. In 1992, after 12 years as a senior executive at Wang Labs in the US and Europe, Olisa founded Interregnum, the technology merchant bank. He was elected as a Fellow of the British Computer Society in 2006. He is currently a director of Thomson Reuters and is currently non-executive chairman of AIM-listed Outsourcery plc and of governance advisers, Independent Audit. He is also on the board of the Institute of Directors as a non-executive director. Olisa is a Freeman of the City of London. In 2009, he was named the *Sunday Times* Not-for-Profit Non-Executive Director of the Year and is regularly voted in the Powerlist's Top 10 most influential British black people. In 2015, the Queen appointed him as her Lord-Lieutenant of Greater London.

Mark Goyder

Mark Goyder is founder and chief executive of Tomorrow's Company. He is an award-winning speaker, writer and broadcaster with over 15 years' experience as a manager in manufacturing businesses. Tomorrow's Company is a London-based globally focused agenda-setting think tank whose purpose is to inspire and enable companies to be a force for good. Tomorrow's Company developed the concept of the business licence to operate and redefined the concept of corporate social responsibility in the 1990s. Its work on capital markets stimulated the emergence of the UN Principles of Responsible Investment. More recently it has championed integrated reporting and a new agenda for business governance and stewardship. Its Good Governance Forum brings together company investors, advisers and regulators to discuss practical innovation in corporate governance.

George Dallas

George Dallas was appointed policy director at International Corporate Governance Network in 2014, where he coordinates ICGN's governance polices and committees, and plays an active role in ICGN's regulatory outreach. He is also a senior visiting fellow at Cass Business School, and is currently consulting for the World Bank on a project to establish a stewardship code in an African capital market. Previously, Dallas served as director of Corporate Governance at F&C Investments in London, where he led F&C's global policies relating to corporate governance, proxy voting and engagement matters. Prior to joining F&C, he was a managing director at Standard & Poor's over a 24-year period, including as head of its European credit-rating operations and global head of its governance services unit. Dallas holds a BA degree, with distinction, from Stanford University and an MBA from the Haas School of the University of California at Berkeley.

Professor Andrew Clare

Professor Andrew Clare is the professor of asset management at Cass Business School and the associate dean responsible for its MSc programme, which is the largest in Europe. He was a senior research manager in the monetary-analysis wing of the Bank of England, which supported the work of the monetary-policy committee. In a survey published in 2007, Clare was ranked as the world's ninth most prolific finance author of the past 50 years. He serves on the investment committee of the GEC Marconi pension plan, which oversees the £4bn scheme's investments and investment strategy, and is a trustee and chairman of the investment committee of the £3bn Magnox Electric Group pension scheme.

Professor Paolo Volpin

Professor Paolo Volpin is the head of the finance faculty at Cass Business School. He is also a research fellow of the Centre for Economic Policy Research (CEPR), and a research associate of the European Corporate Governance Institute (ECGI). Prior to joining Cass Business School, he was an associate professor of finance at the London Business School. He has published in the *American Economic Review, Journal of Finance, Journal of Financial Economics, Review of Financial Studies, Review of Finance, Journal of Economic Perspectives* and other journals. His research in corporate finance, especially in the field of corporate governance, has won several awards. He holds a PhD in economics from Harvard.

Dr Roger Barker

Dr Roger Barker is director of corporate governance at the Institute of Directors (UK), where he has worked since 2008. He is senior adviser to the board of European Confederation of Directors' Associations and chairman of its education committee, and is a board member of European Women on Boards. He is a visiting lecturer at the Saïd Business School (University of Oxford), ESSEC (Paris), UCL and the Ministry of Defence. He has also worked as an external adviser on corporate governance for a number of international organisations, including the EBRD, IFC and the Asian Development Bank. Dr Barker's book – *Corporate Governance, Competition, and Political Parties: Explaining corporate governance change in Europe* – was published by Oxford University Press in 2010. He is also the author of the IoD's main guide to the role of the board, *The Effective Board: Building individual and board success*.

Chris Walton

Chris Walton is the chairman of Goldenport Holdings, a listed shipping company, and an NED of KazMunayGas NC, the state oil company of Kazakhstan. In addition to his non-executive role at the IoD, he is an audit and risk committee member for the Department for Culture, Media and Sport. In the past, he has been chairman of Lothian Buses and of Asia Resource Minerals plc, and the senior independent director and audit chair of Rockhopper Exploration plc. He has also served two terms as audit chair of the Kazakhstan state railways. As finance director of EasyJet, he directed its IPO. Before this, he held senior posts at Qantas, Air New Zealand and Australia Post. He has also worked for BP Australia, the Australian senate and Rio Tinto Hamersley Iron.

Project consultant

Alderman Professor Michael Mainelli

A qualified accountant, securities professional, computer specialist and management consultant, educated at Harvard University and Trinity College Dublin, Mainelli gained his PhD at the LSE where he was also a visiting professor. In 1994, he co-founded Z/Yen, the City of London's leading think tank, to promote societal advance through better finance and technology after a career as a research scientist in aerospace and cartography, then partner in an accountancy firm and director of Ministry of Defence research. He created the Global Financial Centres Index for the City of London Corporation and the Global Intellectual Property Index for Taylor Wessing. He is emeritus professor and trustee at Gresham College. His third book, *The Price of Fish: A new approach to wicked economics and better decisions,* co-authored with Ian Harris, won the 2012 Independent Publisher Book Awards Finance, Investment and Economics Gold Prize.

Secretary to the advisory panel

Oliver Parry

Oliver Parry is the Institute of Directors' senior adviser and spokesperson on corporate governance having joined the IoD in June 2014. A former communications director at the Financial Reporting Council (2011 – 2013), he previously worked for Redleaf Polhill, a leading investor relations and advisory firm in the City of London, and for Cicero Consulting, where he advised a range of blue-chip FTSE-100 companies on their corporate reputation. Parry began his career working for Patrick McLoughlin in his parliamentary office and also had a stint at Conservative Party Central Office. He read history at Newcastle University.

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