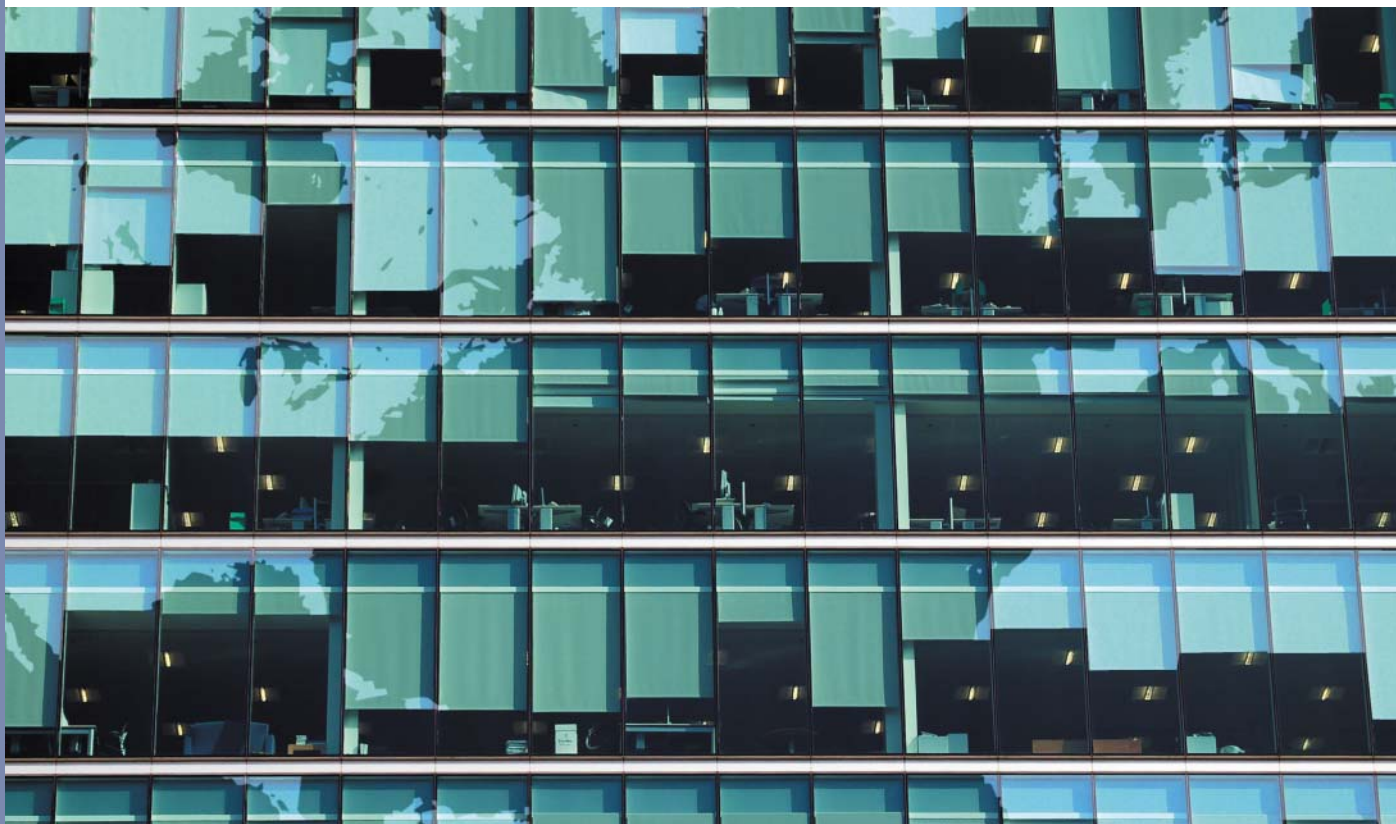




INTERNATIONAL



# Assessing the Effectiveness of Enforcement and Regulation



April 2009



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**Foreword**  
**Stuart Fraser**  
**Chairman, Policy and Resources Committee**  
**City of London**

Over many years, research commissioned by the City of London Corporation, including the Global Financial Centres Index, has shown that there is a complex mix of private and public factors that make the international financial and commercial centres attractive. These factors include access to markets, talent and regulation. These factors have allowed centres to grow rapidly by delivering the international capital services that have underpinned fast growth, to the benefit of both developed and emerging markets.

This study has been commissioned by the City of London Corporation, LIBA, ICMA, SIFMA and FOA<sup>1</sup> from CRA International. The steering group included representatives from these organisations and from the new International Centre for Financial Regulation. The consultants were asked to look at recent and ongoing developments in capital markets and to anticipate moves by some regulatory authorities to consider mutual recognition of comparable regulatory regimes.

The report concludes that mutual recognition agreements between regulators should be based on delivering the same outcomes, rather than assessing equivalence simply by measuring regulatory inputs. The relevant outcomes for joined-up regulation would be efficient operation of financial markets, open access to and pooling of transactional data, greater convergence in regulatory outputs and standards and improved functional outsourcing between regulatory authorities.

The study will move the debate forward. Most usefully, it shows that effective financial regulation improves market efficiency, regardless of the detailed nuances of the regulatory or enforcement regime.

Boom and bust seems to be in the very nature of international financial markets. When the bust happens, regulators and market participants all struggle to adapt and seek to better manage and anticipate future problems. The current focus on establishing more effective crisis management processes, greater cooperation and improved information-sharing between regulators will play a significant part in creating a regulatory infrastructure which will be more capable of anticipating and mitigating the consequences of future financial services crises.

We are currently experiencing a period of exceptional and highly contagious global turbulence, combined with a coordinated downturn in the global economy. With the benefit of hindsight this reflects the growth of substantial imbalances in international capital holdings and trade flows, excessively risky

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<sup>1</sup> London Investment Banking Association, the International Capital Market Association, the Securities Industry and Financial Markets Association and the Futures and Options Association.

lending by banks (driven by unrealistic performance expectations), poor systems and controls for managing risk and pricing OTC structured products. Looking forward, prudential regulation, enhanced risk management systems and controls, and supervision must be reformed to mitigate a future systemic failure of global banking. We need to learn the lessons from a crisis that has affected all parts of our ever more closely integrated world.

It is important to remember that markets which are well regulated but open deliver better long-run economic growth than any form of centralised state control. Effective regulation needs to give financial market players the supervisory incentives to behave well.

While London and New York – with their hinterlands of the large liberal economies of the EU and the US, continued access to markets, deep talent pools and a strong supporting role from supervisory agencies – should be more resilient during the downturn than many smaller centres, there are lessons to be learned for all financial centres.

The discussions taking place in the UK, Europe and at the G20 provide a welcome opportunity to shape a better regulatory environment, drawing on all the lessons from the current crisis. But we must not just implement change for change's sake.

It is time to move forward, to start rebuilding and to put in place the foundations for a sustained recovery. We must work closely within the European policymaking process to ensure that new EU regulation reinforces the EU's global competitiveness and its constituent global financial centres.

The competitiveness of the EU and its constituent financial centres depends on a number of factors but, in the aftermath of the current crisis, it is critically important that the regulatory response does not impair market differentiation, customer choice or the predictability, quality, fairness and proportionality that investors will seek in the post-recession world.

*Stuart Fraser  
London  
April 2009*

**Foreword**  
**Alan Yarrow**  
**Chairman**  
**London Investment Banking Association**

LIBA is pleased to be associated with this research along with FOA, ICMA and SIFMA.

Exceptional global turbulence has turned attention to the need to promote more robust and stable financial markets. For our part, the industry strongly supports transparent, efficient financial markets that operate with integrity, and where regulators have the rule making, supervisory and enforcement tools they need to maximise regulatory effectiveness.

We believe that public authorities and market participants, whether investors, issuers, or intermediaries, all share common objectives of financial stability, liquidity, and market confidence, and the efficient allocation of resources. These objectives can best be achieved by:

- enhancing the soundness of the financial system and of systemically important firms;
- restoring normal market operation, without the need for public sector support, as soon as feasible;
- enhancing the tools and infrastructure for policy makers and regulators, on a timely basis, to coordinate, cooperate and share information globally;
- enabling early identification of possible future problems in financial markets, while maintaining enough flexibility to adapt to unforeseen events;
- ensuring that regulation promotes fair dealing; enables investors to meet their needs and issuers to secure access to capital and funding at reasonable cost; and that regulators have resources and expertise to supervise complex markets and products; and
- encouraging consistency of outcome in relation to these objectives from country to country.

At a global level, regulators need to work together to deliver these outcomes. The important implication of this research undertaken by CRA is that effective regulatory outcomes at the global level can be delivered by domestic regulators with shared goals but different legal systems and means of implementation. This augurs well for the vital work which policy makers, regulators and practitioners will be taking forward in the months ahead.

*Alan Yarrow*  
*London*  
*April 2009*

## EXECUTIVE SUMMARY

**“Assessing the Effectiveness of Enforcement and Regulation” is a report which examines the effectiveness of regulation in securities markets.** CRA International was commissioned by the City of London Corporation, in conjunction with the London Investment Banking Association (LIBA), the International Capital Market Association (ICMA), the Securities Industry and Financial Markets Association (SIFMA) and the Futures and Options Association (FOA), to contribute to the current debate on the effectiveness of enforcement and capital market regulation in different countries. Two important developments affecting capital markets form the background to this project: the ongoing financial crisis; and the globalisation of capital markets with consequent implications for the extent to which domestic regulatory regimes need to rely upon other regulators.

**Capital markets have a fundamental impact on the cost of doing business across the whole economy. Capital markets that work well are the engine room of strong and sustainable economic growth . Regulatory authorities have a critical role in ensuring the soundness and proper functioning of these markets.** But when considering regulatory effectiveness, regulation is not an end in itself. Ultimately, regulation is aimed at improving market outcomes – the measures of economic activity which relate to the efficient and effective functioning of securities markets. There is strong evidence that regulatory action can affect market outcomes. Where strong regulatory regimes exist, there are good market outcomes, and where protections are weak, outcomes are poor. Key issues in effective regulation identified by these studies include: high accounting standards; appropriate disclosure and transparency of information; protection of minority shareholders; high governance standards; robust legal regimes; insider trading laws; and effective enforcement actions. These are linked to a variety of market outcomes including: cost of equity, size and liquidity of markets, valuation premiums, listings and market cleanliness.

**Regulatory effectiveness as measured by market outcomes varies considerably between developing and developed countries.** There are clear differences between less developed economies and more developed economies. Developed economies rank highly on indices of investor protection and effective legal systems and they deliver good market outcomes.

**Market outcomes in five developed economies appear to be rather similar.** We analysed market outcomes in securities markets in five developed economies: Australia, France, Germany, the UK and the US. The cost of equity for these five countries is very similar and differences between countries are well within the measurement error. The equity risk premium is quite similar although this is slightly lower in the UK than in other countries. The UK has also performed well in attracting new listings, followed by Australia and the US. While the US has the largest capital market, when adjusted for GDP, the UK and Australia have the largest markets closely followed by the US and France. The US also appears to have the most efficient market in terms of transaction costs followed by the UK. In general, there is a clustering of results with no one

country being best or worst in all measures. Instead, countries tend to rank highly on one indicator and less highly on others.

**Regulators have a range of tools at their disposal including appropriate legal and institutional frameworks, regulatory supervision and enforcement.** In practice it is not possible to easily separate these regulatory tools into three clearly distinguishable categories. Regulators can encourage compliance using activities that might be considered to be of a supervisory nature, linked to enforcement, or elements of both. Similarly, regulators typically have rule-making abilities and are therefore able to extend or alter the legal frameworks through which regulation arises including through requiring additional disclosure, certain governance standards or bringing some forms of activity or products under their remit or tightening standards as an activity already covered by their remit. It is the combination of regulatory tools rather than one particular part which determines the overall effectiveness of securities regulation.

**A robust institutional infrastructure is a vital starting point in the regulatory arena.** The International Organization of Securities Commissions (IOSCO) has developed a framework setting out the characteristics of a sound securities regulation system. Assessments against this framework show that some countries, especially developing countries, perform relatively poorly. However, it is also clear from the current credit crisis that some elements of modern securities markets were not appropriately regulated or supervised in many developed countries exposing serious gaps in regulation more generally. Future IOSCO assessments should be extended to include measurements of market outcomes rather than institutional structures and inputs alone, which would help focus regulators on any risks emerging from future financial developments.

**Enforcement of laws is essential to ensure credibility of institutional arrangements.** Evidence shows that a failure to enforce leads to no impact on market outcomes from rules which should bring benefits. However, theories which focus on enforcement alone as the key element of regulation are not supported by the evidence. The US uses sanctions and criminal penalties considerably more than most other countries, but does not dominate the other five developed economies on all market outcomes. Furthermore, there is evidence of diminishing returns on market outcomes from enforcement cases. Instead, different regulatory systems can yield good results through using the combination of regulatory tools available.

**Ongoing supervisory activities are of immense importance in gaining compliance.** There is some consensus that a strategy based on punishment and deterrence alone is inferior to one based on persuasion, education, and co-operation. It holds coercive measures in reserve for a minority of non-compliers. A supervision process in which regulators challenge firms to improve based on constructive and active engagement can be effective in ensuring compliance before a serious problem emerges. This has important implications for the best approach to addressing the weaknesses in supervision that have been identified by the IMF, IOSCO and the Basel Committee in relation to the current credit crisis. This is especially the case with respect to risk management and the need for regulators to have

sufficient skills to oversee firms in the context of rapid financial innovation. Ensuring adequacy of supervisory resources and the embedding of skills in regulatory staffs in the key prudential areas where failures have occurred in the recent past will need to be an important focus for the future.

# 1. INTRODUCTION

The City of London Corporation and the sponsoring associations are committed to sustaining market and investor confidence in the securities industry. As part of its activities, the City of London Corporation commissions independent research on the key issues to inform policy debates on a range of issues affecting the financial services sector in the UK and elsewhere. In this latest report, commissioned in conjunction with the London Investment Banking Association (LIBA), the International Capital Market Association (ICMA), the Securities Industry and Financial Markets Association (SIFMA) and the Futures and Options Association (FOA), CRA International was asked to conduct a study with the aim of contributing to the current debate on the effectiveness of enforcement and capital market regulation in different countries.

## 1.1. Background

Two important developments affecting capital markets form the background to this project. One is the ongoing financial crisis and the other is the trend towards convergence of regulatory regimes and globalisation of capital markets. The benefits of mutual recognition, that is, formal recognition by one regulator of the acceptability of another regulator's regime, are beginning to be recognised. This means that a foreign firm could enter a country based simply on recognition by that country's regulator of the foreign firm's home regime.

Each of these developments raises fundamental questions about how to evaluate (and design) regulation as regards securities markets. It seems clear that regulatory failures have occurred recently in the financial markets and that new regulatory initiatives will emerge in the coming months and years to address the root causes of these failures. It is extremely important that these initiatives be targeted correctly according to relevant criteria and objectives.

These issues are equally important with regard to mutual recognition of regulatory regimes. Should mutual recognition, for instance, require jurisdictions to have near identical laws and regulation and style of implementation? Yet, in a diverse world, it seems highly unlikely that all jurisdictions would be able or willing to adopt identical regimes in these matters, particularly as regards societal fundamentals such as legal systems. Rather than accept that convergence is therefore impossible, some new organising concept will be required if mutual recognition is to succeed.

Instead of focusing on fundamental legal structures which are unlikely to change, mutual recognition can instead be based on the comparability of market outcomes, even if these outcomes are achieved via different "inputs" in terms of laws, regulation, and supervision/enforcement levels. Indeed, securing good market outcomes for firms and consumers is a prime objective of regulatory regimes.

However, this apparently straightforward observation raises a number of difficult and complicated questions. How does one define "market outcome" and avoid confusing it with regulatory inputs? How does one

determine that regulation was responsible for generating a good market outcome, as opposed to some other factor? How does one measure success in achieving market outcomes? Can quite different regulatory regimes achieve the same good market outcomes? Or is there a single dominant model of regulation which is effective in achieving good market outcomes to which all jurisdictions should want to migrate? Which of the “inputs” to a regulatory regime actually generate the good market outcome? This paper will attempt to answer at least some of these questions.

## **1.2. The Research Brief for this Study**

The City of London Corporation and the other sponsoring bodies requested that this research focus on two elements:

- An analysis of the effectiveness of enforcement/regulation as measured by its impact on final market outcomes, setting out the relevant dimensions of market outcomes, and the shortcomings of input-based measurement; and
- An assessment of the link between enforcement/regulation and market outcomes such as the cost of raising capital and listing decisions. As part of this we were requested to set out methodological issues to do with assessing the extent of “market cleanliness” between countries.

The existing literature and guidance on effective regulatory regimes sometimes appears to confuse regulatory inputs with market outcomes, or to focus rather exclusively on inputs without any reference to whether better market outcomes are achieved. The brief for this research has been framed with knowledge of this background, and with a desire to clarify the issues and assert the importance of market outcomes. Our research must therefore define differences between inputs and outputs (market outcomes) and provide a systematic model of how one may lead to the other.

The brief also calls for a discussion of cost of capital and listing decisions as a function of enforcement/regulation. This emphasis once again reflects an extensive literature which tends to focus on whether one derives from the other, that is, whether a “good regulation/enforcement” regime leads to a lower cost of capital and attracts stock market listings. The competitiveness of London as a financial centre can be seen, from this perspective, to be very much influenced by the effectiveness (or not) of its regulatory regime compared to other regimes, in particular that of New York.

The study is thus clearly aimed at elucidating a model of securities market regulation which places regulatory/enforcement inputs and market outcomes in their proper context, and examines causality between the two. A notion of what constitutes “effectiveness” should emerge, at least in terms of generating market outcomes such as a low cost of capital, new listings, and market cleanliness.

## **1.3. Methodology and Data Sources**

In order to understand in depth the background to this complex debate, our research has focused on several activities:

- We have gathered and analysed in detail the large body of academic research on the impact of regulation and enforcement on securities markets;
- We have analysed the literature on what constitutes “good” regulation of securities and other financial markets from bodies such as the International Monetary Fund (IMF), International Organization of Securities Commissions (IOSCO), Australian Securities and Investments Commission (ASIC), and the UK Financial Services Authority (FSA);
- We have reviewed, to the extent possible given our time constraints, regulatory and enforcement regimes for securities markets in five countries: Australia, France, Germany, the UK and the US; and
- We have conducted interviews with knowledgeable experts at the UK FSA, and with UK trade bodies, and other organisations.

Using all of these inputs we have set out a regulatory input/output model for the securities industry and examined various theories of causality between the inputs and outputs, and drawn conclusions on these theories.

#### **1.4. Structure of the Report**

The rest of this report is structured as follows. Chapter 2 discusses issues associated with the regulation of securities markets. Chapter 3 discusses models of regulatory effectiveness as developed by various academics. Chapter 4 examines various market outcomes in Australia, France, Germany, the UK and the US. Chapter 5 draws together key themes in the paper and sets out the way forward.

## 2. CAPITAL MARKETS AND REGULATION

This chapter sets out the fundamentals of securities regulation: its objectives; issues concerning compliance with regulation; and linking regulation to market outcomes.

### 2.1. Securities regulation

Securities regulation refers to the regulation of public issuers of securities, primary and secondary markets, asset management products, and market intermediaries.

Capital markets have unique characteristics which affect the manner in which they are regulated. Buyers and sellers of securities meet in a marketplace to exchange value. In a liquid and efficient market there will be many counterparties for any buyer or seller, and a price discovery mechanism which yields a market price acceptable to both parties to a transaction. Trading costs will be low and effective clearing and settlement mechanisms will ensure timely transfer of funds as well as ownership of the security that has been bought or sold. Buy and sell decisions will be made based on relatively abundant information equally available to all participants. Markets operating in this manner allocate resources efficiently via a transparent pricing mechanism determined by open market conditions and observed by all other participants.

A distinct feature of such a market is that for on-exchange trading there is little or no contact between the issuers of securities and the investors who buy them, or between parties in secondary trading.<sup>2</sup> In a bank lending transaction, by way of contrast, the parties may meet to negotiate an agreement and the borrower may be compelled to provide information and data to the lender that is not available publicly. The lender may also be granted inspection rights to determine that its interests are being safeguarded, and a loan agreement may impose certain constraints on the borrower that further protect the bank's interest.

Capital markets do not afford such opportunities to investors. Investors participating in capital markets instead rely on the availability of accurate, timely, and relevant information on the condition of the companies in which they invest. This information enables them rationally to decide whether a company is, from their perspective, a good investment candidate. It is also critical, if there is to be wide participation in the market, that there is a level playing field for information amongst potential investors. If some investors (insiders) have more information than others, those with less information may change the amount of trading they are willing to engage in. The presence of dependable, accurate information equally available to all is therefore a main protection of the investor and a critical concern for the regulator. If

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<sup>2</sup> This may not be the case for off-exchange or Over the Counter (OTC) trading.

information is inadequate, untimely in its presentation, or unevenly distributed between insiders and ordinary investors, capital markets may not develop because investors may believe they cannot properly analyse the investment opportunity or because they believe they will be at a disadvantage compared to insiders.

Another critical enabler is the rule of law and the recourse to compensation for investors. The legal protections afforded to minority shareholders against majority, or dominant shareholders are important. In addition, it is critical that market participants be confident that intermediaries transacting on behalf of buyers and sellers are safe and that the market infrastructure of rules, processes, and technology functions smoothly to ensure that trading and clearing and settlement mechanisms create orderly markets and foster investor confidence.

In describing the laws which form the foundation of securities regulation in the United States, the Securities and Exchange Commission effectively summarises a number of these points when stating the following:

*“The main purposes of these laws can be reduced to two common sense notions:*

- *Companies publicly offering securities for investment dollars must tell the public the truth about their businesses, the securities they are selling, and the risks involved in investing;*
- *People who sell and trade securities – brokers, dealers, and exchanges – must treat investors fairly and honestly, putting investors’ interests first.*<sup>3</sup>

## **2.2. Inputs for securities regulation**

### **2.2.1. Institutional framework**

The International Organization of Securities Commissions (IOSCO) aims to promote high standards of regulation in order to maintain just, efficient, and sound markets. Its membership consists of national securities market regulators representing more than 90% of the world’s securities markets.

IOSCO has developed a comprehensive framework setting out the characteristics of a sound securities regulation system.<sup>4</sup> This framework has three core objectives:

- The protection of investors;
- Ensuring that markets are fair, efficient and transparent; and
- The reduction of systemic risk.

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<sup>3</sup> SEC website: <http://www.sec.gov/about/whatwedo.shtml>.

<sup>4</sup> International Organisation of Securities Commissions (1998) Objectives and Principles of Securities Regulations.

In addition, the IOSCO framework has eight groups of principles which are set out below:

- Regulators should be suitably empowered, independent, and accountable;
- Self regulatory organisations – such as exchanges, trade associations, and private agencies – should observe standards of fairness and confidentiality and be overseen by regulators;
- Regulators should have comprehensive inspection, investigation, surveillance, and enforcement powers;
- Regulators should be able to share both public and non-public information with domestic and foreign counterparts;
- Issuers should provide full, timely, and accurate disclosure of financial results and other information to investors and observe high accounting and auditing standards;
- Regulators should set standards for collective investment schemes, notably their legal form and structure, disclosure, and asset valuation practices;
- Regulators should set minimum entry standards for market intermediaries as well as capital and other prudential requirements for intermediaries and establish procedures for dealing with their failure; and
- Trading systems and securities exchanges should be subject to effective regulation and oversight, and trading activities should be transparent.

### **2.2.2. Securities regulation and compliance**

There is a strong emphasis in the IOSCO framework on what it takes to build a regulatory infrastructure for securities markets in order to ensure that the appropriate framework is in place. This is undoubtedly essential as a way of ensuring that all of the important elements are present and properly constructed, particularly for jurisdictions with less experience in securities regulation. However, the existence of securities laws and regulations may not be sufficient to achieve effective overall regulation of securities markets.

Instead, it is important that firms understand the implication of the rule and comply with it. For example, the OECD notes that:

*“A common assumption is that the target group will be aware of, and understand how to comply with a rule when it is published. However, rapid increases in the complexity and volume of new regulations can make this basic assumption unrealistic. The responsibility of policymakers does not end with publication of the rule.”<sup>5</sup>*

Hence the OECD recognises that regulators will need to take additional steps to secure effective compliance within the regulated community beyond simply setting out the institutional and regulatory framework.

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<sup>5</sup> OECD (2000) Reducing the risk of policy failure: Challenges for regulatory compliance.

These additional steps or “compliance-gaining strategies” on the part of the regulator are central to the question of whether regulation actually achieves its policy objectives. It is not sufficient to promulgate a rule: there must also be engagement with the regulated community in a manner that gains compliance to the maximum degree possible on a continuous basis over time.

As we will explain further in section 3.3, regulators have a variety of tools at their disposal which they may deploy in a compliance-gaining strategy. These include education, persuasion, operational intervention, warnings, and civil and criminal sanctions. Regulators will typically have an implicit or explicit strategy for gaining compliance using this variety of tools.

Some recent academic literature has focused on the role of enforcement as being of particular importance in gaining compliance with regulation in contrast to other forms of compliance gaining strategies. For this reason we have chosen to categorise enforcement separately to other forms of supervision although it should be noted that this is purely for the ease of structuring the issues which are raised.

Throughout this report we examine the combination of the following areas:

- Legal and institutional frameworks;
- Regulatory supervision; and
- Regulatory enforcement.

In practice it is not possible to easily separate these elements into three clearly distinguishable categories. As stated above, regulators have a range of tools to encourage compliance which cover both activities that might be considered to be of a supervisory nature as well as those linked to enforcement and many activities may have an element of both. Similarly, regulators typically have rule-making abilities and are therefore able to extend or alter the legal frameworks through which regulation arises including through requiring additional disclosure, certain governance standards or bringing some forms of activity or products under their remit (or a part of their remit with tighter standards).

Thus throughout the paper we examine the different elements of these three areas, but as we note later, it is the combination of these elements rather than one particular part which determines the overall effectiveness of securities regulation.

### **2.3. Regulatory inputs and market outcomes**

When considering regulatory effectiveness, it should be noted that regulation is not an end in itself. Instead, having appropriate legal and institutional frameworks, regulatory supervision and enforcement is aimed at impacting the markets which are regulated such that the outcomes of those markets are beneficial.

However, it can not be assumed that changes to the various inputs will certainly bring about an impact on market outcomes. Instead this needs to be tested to demonstrate that market outcomes are, indeed, likely to emerge

in the manner anticipated. We discuss below a “causality tree” methodology for examining linkages between regulation and market outcomes.

Causality trees attempt to set out the transmission mechanism between regulatory inputs and market outcomes. The causality tree aims to set out the theoretical impacts that would be expected from particular policies or regulation. As such they then provide information on the data that can be gathered to assess whether the policies have the anticipated impact.

Typically such trees would be developed for individual regulatory measures. However, in this case we are seeking to set out a way to assess the effectiveness of “securities regulation” more generally. Hence in this case we necessarily provide a more stylised causality tree.

In practice a causality tree has four elements:

- **Objectives of the measure** – in this case we use the IOSCO objectives of: protection of investors; ensuring that markets are fair, efficient and transparent; and the reduction of systemic risk.
- **The regulatory input** - this represents the regulatory measure that is under consideration and in this case includes: the legal and institutional infrastructure of securities regulation; regulatory supervision; and regulatory enforcement.
- **Intermediate indicators** - these are indicators of the most immediate result of the input regulation and are often useful to capture because, when considering individual regulatory changes, it is not always possible to observe a deterministic impact on the ultimate outcomes that regulation is aimed at affecting. They typically involve capturing evidence that there have been changes within the internal behaviour of a firm or regulator such as altering supervisory procedures, changing documentation or ensuring that staff behaviour towards customers is altered in some way. Measurable change at this intermediate level is the most immediate demonstration that regulation is affecting the world of regulated firms (and regulators). Understanding of this intermediate level also assists in understanding the policy transmission mechanism towards the market. Some of the intermediate indicators may include:
  - Regulator compliance-gaining actions: this indicator would measure the regulator's compliance-gaining activities with regard to public companies, intermediaries and other participants in securities markets. It should be possible to develop quantitative indicators of the resources deployed and activities undertaken by regulators to gain compliance;
  - Behaviour of public companies and market participants: regulators' compliance-gaining strategy should impact firms' behaviour in measurable ways. One indicator of change might be higher governance standards as indicated by governance quality indices published by researchers<sup>6</sup>; and

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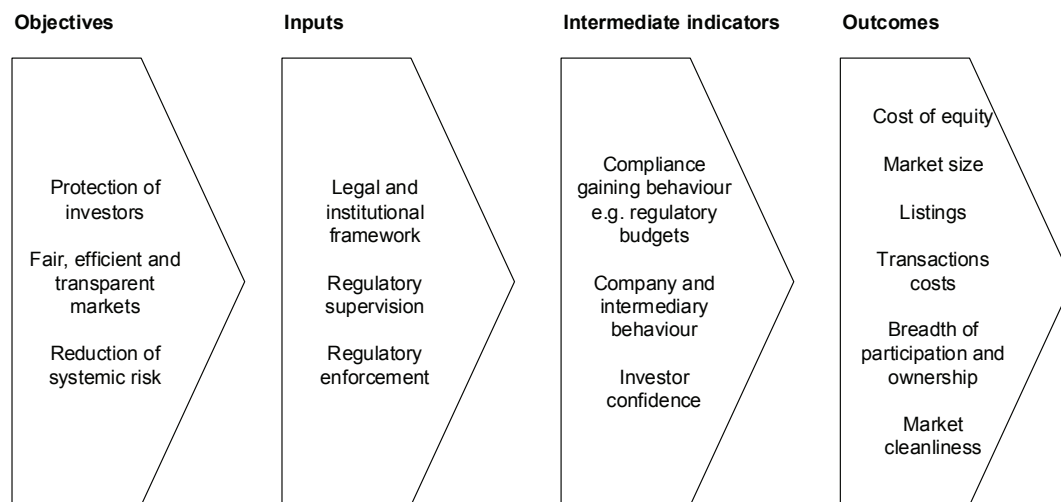
<sup>6</sup> For example, Davis Global Advisors or FTSE ISS Corporate Governance Rating and Index Series.

- Investor confidence: strong belief amongst investors that the actions of regulators and firms are generating safe, efficient, and transparent markets, and that investors will be treated fairly by the market intermediaries with whom they deal.
- **Market outcomes:** these are the key indicators, the final indicators of regulatory impact. They are measures of economic activity which, in this case, relate to the efficient and effective functioning of securities markets. There are a number of different indicators which are of relevance including:
  - Performance in attracting listings;
  - Cost of equity and/or equity risk premium;
  - Market size;
  - Transaction costs;
  - Market cleanliness; and
  - Breadth of participation and ownership.

These six indicators are clearly market-based and represent outcomes for investors and firms seeking capital, and for market participants engaged in secondary trading. Securities markets which achieve high scores in these categories would clearly be performing well in a manner which enhances economic welfare.

We set out the representation of the causality tree below in Figure 1.

**Figure 1: Securities markets regulatory causality tree**



Source: CRA International

It should be noted that in this report, because we are considering regulatory effectiveness as a whole rather than one particular area of regulation or one proposed regulatory change, we focus on the various input measures and the market outcomes.<sup>7</sup>

<sup>7</sup> Issues to do with retail investors were outside of the scope of the report and thus have not been examined; neither have those to do with company and intermediary behaviour.

## **2.4. Summary**

Securities regulation is an important element of ensuring that well functioning capital markets exist. Efficient capital markets are a societal good that every nation should wish to nurture - the cost of capital, and of raising capital, as well as transactional efficiency in capital markets impact the cost of doing business in the rest of the economy. Nations should therefore wish to put in place an effective regulatory regime that fosters capital market development.

Regulatory authorities have a critical role in providing a context which ensures the soundness and proper functioning of capital markets. Without a proper regulatory and compliance framework it is improbable that investors, in particular, but also issuers, would want to participate in capital market transactions.

There are a range of factors within the regulatory sphere which impact capital markets including: legal and institutional frameworks; regulatory supervision; and regulatory enforcement, although in practice these are not completely distinct categories.

However, ultimately, regulation is aimed at improving market outcomes – the measures of economic activity which relate to the efficient and effective functioning of securities markets.

In the next chapter we highlight some of the academic literature which sets out how, and whether, various input measures of regulation impact market outcomes which helps to demonstrate the policy transmission mechanism between these impacts. Chapter 4 then considers the data regarding current measures of various different market outcomes.

### **3. MODELS OF REGULATORY EFFECTIVENESS**

The previous chapter described the basic features of securities regulation. This chapter distils the learning that is available from academic sources about the sorts of factors that make regulation effective, that is, regimes which lead to good market outcomes for market participants and society.

The chapter is structured as follows:

- Section 3.1 considers the academic literature on the effectiveness of regulation in terms of the content of laws and regulations;
- Section 3.2 focuses on issues specific to enforcement activities and provides a comparison of enforcement activities in different countries; and
- Section 3.3 sets out compliance gaining strategies more generally in terms of the range of different tools which regulators may have at their disposal.

We end the chapter by drawing together the main conclusions.

#### **3.1. Effective laws and regulations**

A significant amount of academic literature has emerged over the past decade on regulatory effectiveness. This literature analyses the impact of securities regulation on capital markets (primarily equity markets) in different countries. A series of papers have attempted to determine what works and what does not work in the regulation of capital markets. The general thrust of the research is that the nature of securities law and regulation has a deterministic impact on the success of capital markets. These papers develop the theme that a sound, strong institutional/regulatory structure underlying a securities market will generate significant benefits for investors and companies and create “successful” markets. Where strong frameworks exist, it is argued, one will find deep, efficient, and fair securities markets that reward companies with a low cost of capital and provide better returns to ordinary shareholders. Poorly regulated securities markets, by contrast, are smaller and less well developed with less good returns and a high cost of capital.

The following section of this paper briefly summarises contributions of the main academic participants in this debate.

##### **3.1.1. Impact of regulation on financial markets**

An examination of the relationship between regulation and the development of capital markets seems to have begun in earnest with seminal papers from La Porta, Lopez de Silanes, Shleifer and Vishny (LLSV) in 1997 and 1998. LLSV argue that:

*“The differences in the nature and effectiveness of financial systems around the world can be traced in part to the differences in investor*

*protection against expropriation by insiders, as reflected by legal rules and the quality of their enforcement.”<sup>8</sup>*

The authors develop a data set for 49 countries including indicators of the strength of legal regimes in individual countries and the extent of legal protection afforded to shareholders. They develop a set of statistics which indicate that countries with strong legal regimes that protect investors have markedly better development of their capital markets, especially equity markets. They note that most countries have legal regimes that derive from “common law” or “civil law.”<sup>9</sup> They state that there are strong differences between common law legal regimes (UK, US) and civil law legal regimes (France, Germany) in terms of the rights and protections given to shareholders. They conclude that common law regimes afford better protection to investors versus civil law regimes through the existence of specific sets of legal provisions. They argue that this better protection reflects in the relatively greater development of capital markets in common law countries such as the UK and US, as measured by depth and breadth of these markets. They state that the quality of enforcement is highest in Scandinavian and German regimes, fairly strong in common law regimes, and weakest in civil law regimes.

LLSV further state that weak protection of minority shareholders is associated with nations where companies are dominated by a few large shareholders (citing civil law countries as an example once again). The concern is that large shareholders may influence company decisions in order to benefit themselves at the expense of small shareholders. They argue that it appears that shares are narrowly held in these countries because the position of minority shareholder is open to abuse by majority shareholders. They suggest, therefore, that concentrated ownership is a response to weak investor protection. Wider ownership dispersion, on the other hand, is associated with better, stronger investor protection of small shareholders against insiders, and is typically present in common law countries. This tends to result in broader, deeper, more successful capital markets in common law countries.

They conclude that:

*“Because a good legal environment protects the potential financiers against expropriation by entrepreneurs, it raises their willingness to surrender funds for securities, and hence expands the scope of capital markets.”<sup>10</sup>*

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<sup>8</sup> La Porta, Lopez-de-Silanes, Schleifer and Vishny (1997), Legal Determinants of External Finance, *Journal of Finance*, 52, pp 1131-1150.

<sup>9</sup> Common law countries are those where rules are derived from precedent developed through decisions in specific cases. This contrasts with civil law countries where there are specific law codes detailing rights and obligations, as opposed to precedents from other, similar, cases.

<sup>10</sup> La Porta, Lopez-de-Silanes, Schleifer and Vishny (1997), Legal Determinants of External Finance, *Journal of Finance*, 52, pp 1131-1150.

They argue, in sum, that strong legal regimes with good investor protection appear to foster the development of deep, broad capital markets through wider participation of ordinary small shareholders. Weak legal regimes result in less well developed capital markets and concentrated share ownership.

It should be noted that the LLSV papers and the data underlying them date from over a decade ago and differences between the protection offered to investors and the development of capital markets which may have been in place in the 1990s may no longer remain despite countries retaining structural differences of common law and civil law regimes. In particular, in the European Union, countries with different legal structures now follow similar rules regarding investor protection as a result of a variety of European Directives. Thus we might expect that differences in legal protections between common law and civil law countries identified in the late 1990s would be reduced today within the EU. In addition, the strong distinction drawn between common law and civil law regimes has been played down by later academics who note that this finding seems to depend on the existence in LLSV country samples of many less developed economies that happen to have civil law regimes, but which also have very underdeveloped capital markets and a weak regulatory apparatus. This distinction between developed and developing countries is an important one which also affects many of the results of other academic papers which we discuss below.

### **3.1.2. Links between regulation and shareholder benefits**

A number of academics have extended the LLSV thesis of strong regulation leading to good market outcomes. Many of these have used econometric methods to examine whether there are mathematically demonstrable linkages between security market regulation and various measures of required returns to shareholders. As such they help to set out the policy transmission mechanism between regulatory inputs and market outcomes.

#### **Return on equity**

Lombardo and Pagano (2000) build on the work of LLSV to examine whether the thesis of legal determinism might also explain observed differences in expected stock returns between “weak” and “strong” regimes and conclude that:

*“Total stock market returns are positively correlated with overall measures of the quality of institutions, such as judicial efficiency and rule of law, controlling for risk. Second, dividend yields and earnings-price ratios also correlate positively with judicial efficiency and rule of law, controlling for risk and expected earnings growth... We interpret the positive cross country correlation between the overall quality of the legal system and the expected return on equity as resulting from the curtailment of insiders’ private benefits and the increase of firms’ profitability associated with better institutions.”<sup>11</sup>*

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Lombardo D and M Pagano (2000) Legal Determinants of the Return on Equity, Centre for Studies in Economics and Finance, Working Paper No 24.

This paper employs the indices developed in LLSV's papers for strength and effectiveness of legal regimes and correlates these with returns to equity in more than 30 national equity markets. The result, as noted above, is a strong correlation between returns to equity and the strength/weakness of the legal regimes. Lombardo and Pagano argue that the underlying dynamic is that, in strong regimes, the legal/regulatory framework reduces the private benefits that management can extract from corporate resources at the expense of shareholders. In addition, effective courts and contract law enable companies to rely on contracts with suppliers and customers, thus improving profitability and returns to shareholders. They also note that common law legal regimes seem to lead to higher equity returns than civil law regimes, thus offering support to LLSV's thesis in this regard. As for primary listings, they state that IPO under-pricing is less pronounced in countries with high accounting standards because of increased reliability of information. Lombardo and Pagano's paper is an endorsement of the notion that regulatory regimes which protect shareholders' rights through strong legal frameworks generate a positive outcome for capital markets. They state that equity markets will develop more quickly in jurisdictions with better investor protection measures that bring about higher stock market returns.

Benefits arising from higher corporate governance standards and greater information disclosure are also supported in other studies. Such standards allow a company to pre-commit to greater transparency and therefore reduce monitoring costs for investors. Greater transparency decreases the risk arising from asymmetry of information and therefore reduces the return required by investors (thus reducing firms' cost of capital).<sup>12</sup>

### **Valuation premiums**

A further examination of the impact of sound regulatory frameworks is undertaken by Doidge et al.<sup>13</sup> This paper examines firms which cross-list in the US, that is, firms which attain a secondary listing in the US in addition to a listing in their foreign jurisdiction. They compare the valuations of the cross-listed firms with valuations of firms from the same foreign jurisdiction that have not listed in the US. They find that the firms which cross-list in the US attain a significant valuation premium relative to their non-cross-listing peers in the foreign jurisdiction. They measure valuation using Tobin's Q, and state that the valuation premium equals 16.5%.<sup>14</sup> This is, they assert, the "good governance" benefit of opting into strict US securities regulation. Controlling

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12 Gompers P, J Ishii and A Metrick (2003) Corporate governance and equity prices', *Quarterly Journal of Economics*, 118, pp. 107–155, Verrecchia R (2001) Essays on Disclosure, *Journal of Accounting and Economics*, 32, pp.91-180, Lambert R, C Leuz and R Verrecchia (2007) Accounting Information, Disclosure and the Cost of Capital, *Journal of Accounting Research*, 45, pp. 385-420. See also Oxera (2006) The Cost of Capital: An International Comparison prepared for the City of London Corporation and the London Stock Exchange.

13 Doidge C, GA Karolyi and R Stulz (2004) Why are Foreign Firms Listed in the US Worth More? *Journal of Financial Economics*, 71, pp. 205-238.

14 Tobin's Q is the ratio of the market value of a firm's assets to the replacement cost or book value of the firm's assets.

shareholders are unable, under US regulation, to “expropriate” firm surpluses from ordinary shareholders.

Doidge et al state that “most large foreign companies are typically controlled by large shareholders.” These large shareholders, according to the authors, frequently expropriate resources from small shareholders. Some of these foreign firms will, however, choose to cross-list in the US because they have superior growth opportunities and wish to access capital to fund these opportunities. Under US listing rules they will be unable to expropriate resources from minority shareholders as before, but will be compensated for this by the ability to finance their growth opportunities. This is, according to the authors, a rational trade off in light of the returns associated with growth funded in US equity markets. Since they are no longer able to expropriate resources to such an extent as before (being subject now to US securities laws), and because they can now fund growth opportunities, valuation of their equity increases. This explains the valuation premium described earlier.

They note that these effects are most marked for exchange listings where the full range of US securities regulation comes into force. Premiums are less marked in over-the-counter markets, and there is no premium in private placements where US regulation would not have an impact. They take this as further evidence of the direct impact of regulation on firms' valuations.

In a 2007 paper, the same authors investigate the evolution of cross-listings in light of competitive concerns arising from the impact of Sarbanes Oxley (Sarbox) and the notion that US capital markets have been losing market share relative to London.<sup>15</sup> They argue that the cross-listing premium for New York has persisted post-Sarbox as a result of the governance benefit that results from opting into the US regulatory environment. They further state that there is no listing premium in London for foreign firms. This is because foreign firms with a secondary listing in London have few requirements placed upon them by UK securities laws and regulation. Rather, they are primarily governed by the regulation of their home jurisdiction with little impact from UK listing rules.

They argue that the valuation premium could also result from a number of other different factors including the large and liquid US capital market, risk sharing opportunities, disclosure requirements and higher levels of enforcement.

The Doidge et al papers extend once again the theme of LLSV by arguing that a regulatory input, namely the strict regime of the US, yields a good market outcome for companies and investors. This good market outcome is expressed in the form of an improved valuation for companies which cease “expropriation” of resources from their shareholders once they submit themselves to US regulation. It is stated that weaker regimes do not achieve a valuation premium, presumably because expropriation continues unabated.

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15 Doidge C, GA Karolyi and R Stulz (2007) Has New York Become Less Competitive than London in Global Markets? Evaluating Foreign Listing Choices Over Time, Ohio State University working paper and *Journal of Financial Economics* forthcoming.

This theme is also supported in other academic studies on cross listing although it should be noted that most studies tend to focus purely on the valuation premium associated to cross-listing into the US and do not examine whether such a premium also exists for cross-listing into other countries. However, cross listings into countries with higher standards tends to strengthen the protection of outside investors,<sup>16</sup> which makes it easier for firms to raise financing<sup>17</sup> and also improve investor recognition, increase liquidity and overcome market segmentation all of which have a positive impact on the overall cost of capital.<sup>18</sup>

### **Cost of equity**

In a 2006 paper Hail and Leuz:

*“Investigate whether and how effective securities regulation is related to firms’ cost of capital. We introduce proxies for the level of disclosure and securities regulation as well as the overall quality of the legal system into our country-level regressions. The results indicate that these institutional proxies are significantly related to international differences in the cost of equity capital ... Firms in countries with more extensive disclosure requirements, stronger securities regulation, and more effective legal systems have a significantly lower cost of capital.”<sup>19</sup>*

The authors thus continue to confirm the LLSV thesis that regulatory and legal inputs appear to have a significant impact on important market outcomes such as the cost of equity. The analysis is based on data from 40 countries between 1992 and 2001. The average cost of equity for the 40 countries is 12.97%, with the lowest national cost of equity measured at 10.05% (Germany) and the highest at 25.27% (Egypt). Once again, the authors confirm that “firms from countries with more extensive disclosure requirements, stronger securities regulation, and stricter enforcement mechanisms have a significantly lower cost of capital”. It should be noted that the database capturing differences in disclosure requirements, as well as that regarding

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16 Coffee JC (1999) The Future as History: The Prospects for Global Convergence in Corporate Governance and Its Implications, *Northwestern University Law Review*, 156, pp. 229-258 and Stulz R (1981) A Model of International Asset Pricing, *Journal of Financial Economics*, 9, pp. 383-406.

17 See for example Reese W and M Weisbach (2002) Protection of Minority Shareholder Interests, Cross-listings in the United States, and Subsequent Equity Offering, *Journal of Financial Economics*, 66, pp. 65-104, and Benos E and M Weisbach (2004) Private Benefits and Cross-listings in the United States, *Emerging Markets Review*, 5, pp. 217-240.

18 See for example Merton R (1987) A Simple Model of Capital Market Equilibrium with Incomplete Information, *Journal of Finance*, 42, pp. 483-510, Karolyi GA (1998) Why Do Companies List Shares Abroad? A Survey of the Evidence and Its Managerial Implications, *Financial Markets, Institutions and Instruments*, 7, pp. 1-60, Foerster S and GA Karolyi (1999) The Effects of Market Segmentation and Investor Recognition on Asset Prices: Evidence from Foreign Stocks Listing in the US, *Journal of Finance*, 54, pp. 981-1013 and Karolyi GA and R Stulz (2003), Are Financial Assets Priced Locally or Globally? in Constantinides G, M Harris and R Stulz eds, *Handbook of The Economics of Finance*, North-Holland, Amsterdam, pp. 975-1020.

19 Hail L and C Leuz (2006) International Differences in the Cost of Equity Capital: Do Legal Institutions and Securities Regulation Matter? *Journal of Accounting Research* Vol 44 No 3, June 2006.

enforcement is based on data from December 2000 and will therefore not capture developments regarding changes in disclosure and enforcement since that time.

It is also important to note that the authors believe the effect of regulation leading to a lower cost of capital is much reduced, and in some cases may become insignificant, as capital markets become increasingly integrated globally.

In a more recent study in 2008, Hail and Leuz examine whether their thesis will work in the manner of Doidge et al, that is, do firms cross-listing in the US receive a reduction in their cost of equity as a result of opting into the strict US regulatory system.<sup>20</sup> They conclude that firms do, indeed, receive such a reduction in their cost of equity (of between 70 and 120 basis points) when cross-listing in the US. These reductions in cost of equity have continued despite the advent of Sarbox and the apparent loss of market share of New York versus London in competition for listings. They find, by way of contrast, that these benefits of cross-listing do not exist for firms coming into the London market. Benefits are also smaller for firms entering the US via OTC listings and non-existent for firms entering the US market via private placements. These decreasing benefits for cross-listing firms tend to support the notion that it is the impact of strict US regulation surrounding exchange listings which drives the cost of equity effects. The authors find, once again, that firms from countries with weak disclosure regulation and weak protection of investors benefit the most from cross-listing on US exchanges given the very large increase in strictness that such firms accept.

## **3.2. Enforcement**

In this section we focus on issues to do with enforcement and the academic evidence that this element of regulatory behaviour impacts market outcomes. We start by providing details from two academic studies focused on enforcement and market outcomes. We then contrast, where possible, evidence on the enforcement activities which are undertaken in the different jurisdictions under consideration. We set out information on the overall regulatory budgets, the budgets associated to enforcement activity and information on penalties and sanctions.

### **3.2.1. Academic literature related to enforcement**

#### ***Insider trading, enforcement, and the cost of equity***

Bhattacharya and Daouk analyse the impact of insider trading laws on market outcomes for investors, in this case using cost of equity as their market outcome indicator.<sup>21</sup> This study may be seen as another examination of the

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<sup>20</sup> Hail L and C Leuz (2008) Cost of Capital Effects and Changes in Growth Expectations around US Cross-Listings.

<sup>21</sup> Bhattacharya U and H Daouk (2002) The World Price of Insider Trading, *Journal of Finance*, 57, 75-108, February 2002.

LLSV theme in that an attempt is made to discover whether regulatory inputs (insider trading laws) can improve market outcomes (cost of equity).

The authors assembled a database on the 103 countries that have stock markets and found that only 87 of these have insider trading laws. In only 38 of the 87, however, had there been any enforcement of the insider trading laws on the books, as evidenced by prosecutions for insider trading offences. The authors found that the 49 countries which introduced insider trading laws but which did not enforce them showed no change to their cost of equity. Countries which did have prosecutions showed significant decreases in their cost of equity.

This paper also examines the differential impact of insider trading laws for developed countries and developing countries. The analysis shows that the enforcement effect identified becomes insignificant when considering developing countries alone. That is, "the reduction in the cost of capital that is associated with the enforcement of insider trading laws comes about mainly from emerging markets." This may be because such laws are seen as less "credible" in developing countries so that visible enforcement efforts when they occur in these countries can make a major, measurable difference. As for developed countries, the credibility of the regime may already be high such that further enforcement actions have little impact as credibility has already been established.

Furthermore, as well as examining the impact of the first enforcement case they also examine the impact of a second enforcement case and find that the impact of the first prosecution is around 25% more than that of the second prosecution.<sup>22</sup> This finding may indicate that there are declining benefits to enforcement cases regarding the impact on the cost of equity.

Overall, the study demonstrates once again the thesis that regulation appears to bring about positive outcomes in capital markets. In this case the authors highlight that laws must be enforced to have an impact. This paper thus brings into the equation the important role of enforcement. If there is no credible threat of enforcement, insider trading laws appear to have little impact on market outcomes.

### ***Enforcement intensity and investor outcomes***

In a 2007 paper, Coffee picks up the theme of enforcement.<sup>23</sup> He lists a number of criticisms of the LLSV thesis, offering a view as a law professor that the stated differences between common law and civil law regimes are not so marked in terms of the law itself as to be able to explain wide differences in the shape and performance of different national capital markets. He advances the notion instead that the key regulatory "input" is the level of resource devoted to enforcement, as opposed to the content of regulation.

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<sup>22</sup> It should be noted that due to a lack of data this result is based on only three of the countries in the dataset.

<sup>23</sup> Coffee JC (2007) Law and the Market: The Impact of Enforcement, The Center for Law and Economics Studies, Columbia Law School, Working Paper No 304.

The enforcement input generates an “output” in the form of sanctions imposed on wrong doers.

In terms of approach, it should be noted that Coffee's categorisation of sanctions as an “output” is fundamentally different to our definition of market outcomes. Instead we would categorise both the level of enforcement budget and the resulting sanctions imposed on criminals as different forms of inputs with the latter an “intermediate indicator”. Market outcomes, by contrast are those effects which are seen in terms of how the market functions.

Coffee argues that the US is an extreme outlier relative to other nations in terms of the intensity of its enforcement regime, as regards penalties imposed on companies and corporate executives for law breaking. He combines this data with the evidence from Doidge et al that companies cross-listing in the US receive a valuation premium and attributes this premium to a “bonding” effect arising from the strict US enforcement regime. By this he means that any company opting into the extreme US enforcement regime is, in effect, putting up a bond guaranteeing honest and transparent corporate governance which protects small shareholders. In return for this bond, he argues that the US market rewards the cross-listing company with a premium not enjoyed by its home market peers. He takes as further evidence of his thesis the Doidge et al finding that London does not generate a cross-listing premium for foreign companies. Coffee argues that London has a weak regime for cross-listing companies and low enforcement levels and, as his thesis would predict, there appears to be no premium enjoyed by companies cross-listing in London.

Although Coffee's enforcement thesis is rather different to those of other authors cited here, it is similar in that it continues to advance the notion that inputs provided by the “regulatory system” do make a difference to market outcomes for investors and companies. He thus continues to support the fundamental notion that stronger legal/regulatory regimes yield better market outcomes, but departs from earlier papers in laying the whole emphasis on enforcement, not the letter of the law. He thus appears to suggest that very high levels of enforcement are “the” key input for securities regulators and that higher enforcement levels will always yield better market outcomes.

He discusses at length differences in levels of enforcement between jurisdictions. He notes that common law regimes devote much more resource to enforcement than civil law regimes and suggests that this is the true source of differentiation between the two types of legal regime that others have observed. He notes, following LLSV, that common law countries have dispersed share ownership, unlike civil law countries where ownership is much more concentrated. He therefore argues that wider ownership of shares in common law countries generates political demands from society for protection and regulation of securities markets, a demand which does not arise in civil law countries given the narrowness of shareholding. High enforcement in common law countries is thus a political response to demands from the broad base of shareholders found in these jurisdictions, and is therefore elevated relative to civil law countries.

In an interesting aside, he argues that capital markets develop as a function of the nature of the societies in which they reside and that legal/regulatory structures are formed long after the capital markets have taken shape. For instance, he states that the Netherlands and the UK have the oldest securities markets and that what characterises these two countries (one civil law, the other common law) is the:

*“Open, pluralistic, and decentralised nature of the society in which they took root, in particular the absence of a dominant centralized bureaucracy that exercised control over all significant economic initiatives”*

In each of these countries, he argues, securities markets took root long before significant securities regulation was put in place. He sees the US in this way also, where very active capital markets grew up long before the advent of securities regulation in the 1930's (which was a required political response to the crash of 1929). He thus argues that dispersed share ownership is a function of the nature of these societies. Protective regulation appears later in response to some crisis or scandal as perceived by the community of shareholders. He thus reverses the causality assumed in earlier papers, which is that capital markets develop only after strong regulation is put in place.<sup>24</sup>

Finally, he makes the following point about the UK regime:

*“US corporate governance ... might be less rigorous and shareholder friendly than the governance system of the UK. In the UK, the positions of the CEO and the chairman of the board are typically separated; shareholders vote on executive compensation; and institutional investors generally both own a higher percentage of the stock and exercise closer oversight than in the US. If so, the UK arguably might have less need to invest in enforcement. In general, if shareholders can protect themselves adequately, less need exists for regulators to invest heavily in enforcement or to use stock exchange listing rules as a leverage point by which to impose higher governance standards. This would explain both why the LSE, unlike the NYSE, has never felt pressure to raise its listing standards and also why foreign firms incur no listing premiums when cross-listing on the London Stock Exchange.”*

In the US, by way of contrast, he states that dispersed ownership takes the form of holdings by private individuals, as opposed to institutions, to a greater extent than in the UK. Securities regulation in the US therefore takes on a populist element, particularly in terms of dealing with enforcement matters where corporate executives are seen to have stolen from shareholders. In effect, there are in the US, he argues, powerful grass-roots demands for extreme protective measures and heavy punishments for offenders that work through the political system into the budgets of the SEC and the actions of US

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It should be noted that the reverse causality does not necessarily apply today when countries are seeking to build up their capital markets since companies and investors have the opportunity to trade on existing capital markets in other countries and thus it may now be necessary to have appropriate regulation in place before expecting capital markets to develop.

courts. It is this populist political element associated with retail ownership of shares which explains the heavy enforcement intensity of the US. Institutional investors in the UK are much less likely to seek high publicity extreme punitive measures than retail investors in the US.

### 3.2.2. Intermediate indicators linked to enforcement

#### **Regulatory budgets**

The US has a huge regulatory budget compared with other jurisdictions with the number of staff and the overall budget nearly 10 times that of the UK.<sup>25</sup> However, when total regulatory costs are adjusted for GDP, the differences are much reduced. The US remains with the highest budget, but regulatory costs per GDP are very similar in Australia.

**Table 3-1: Regulatory costs and staffing in selected jurisdictions (2004)**

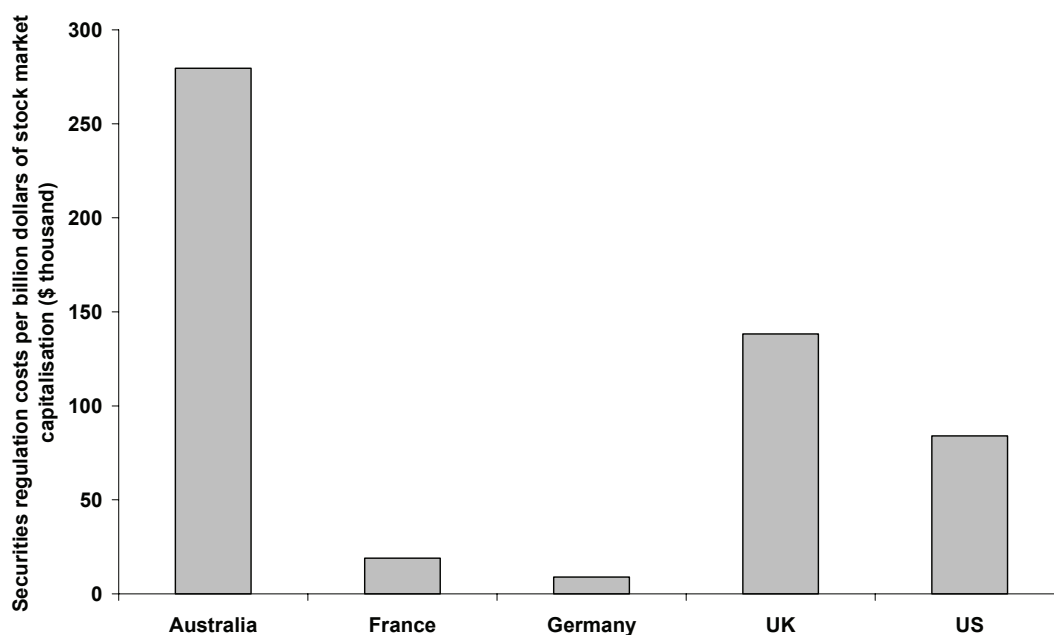
	Total regulatory staff	Total regulatory costs (\$ million)	Regulatory costs per staff member (\$)	Total regulatory costs per billion dollars of GDP (\$)	Regulatory staff per million of population
Australia	1,900	214	112,669	413,265	95.96
France	916	130	142,149	74,533	15.53
Germany	1,319	109	82,683	45,441	16.09
UK	3,069	497	161,798	276,788	52.02
US	29,924	4,633	154,840	425,827	102.83

Source: Jackson, H. E. (2005): "Variation in the Intensity of Financial Regulation: Preliminary Evidence and Potential Implications", John M. Olin Centre for Law Economics, and Business Discussion Paper No. 521.

When considering securities markets alone, however, a slightly different picture emerges. Securities regulation costs adjusted for stock market capitalisation show Australia has the highest budgets. As with the total regulatory costs, Australia, the UK and the US have considerably higher budgets than France and Germany although Australia appears to be the outlier.

<sup>25</sup> Note that this indicator is in fact broader than enforcement and encompasses other elements of regulatory activities as well.

**Figure 2: Securities regulation costs per billion dollars of stock market capitalisation (2003/2004)**



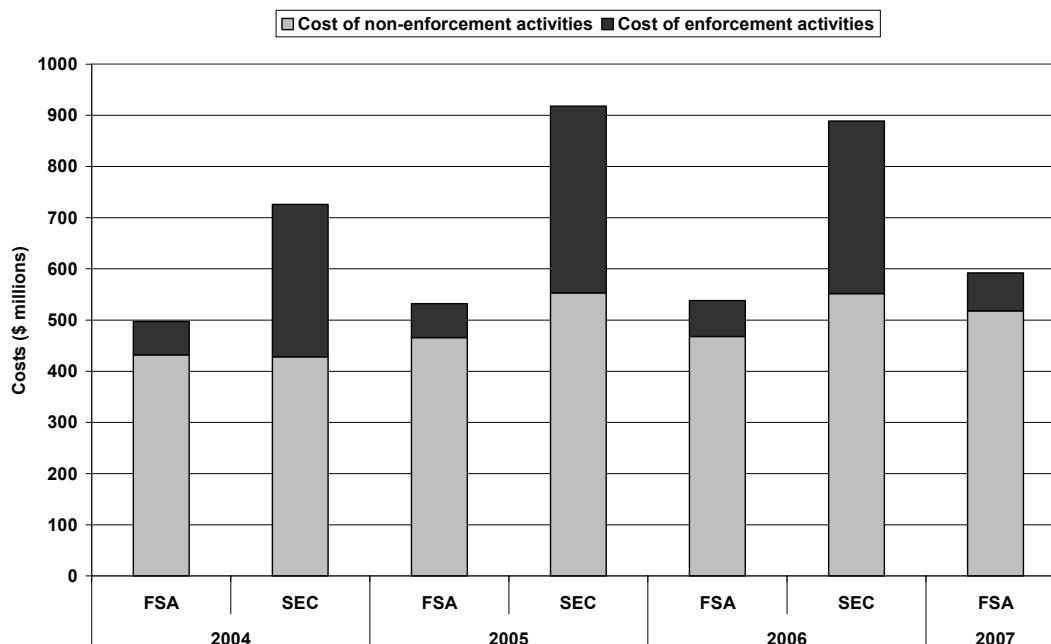
Source: Coffee JC (2007) *Law and the Market: The Impact of Enforcement*, The Center for Law and Economics Studies, Columbia Law School, Working Paper No 304 based on Jackson, H *Variation in the Intensity of Financial Regulation: Preliminary Evidence and Potential Implications*, John M Olin Center for Law, Economics and Business, Discussion Paper No 521, August 2005 and FSA 2003/2004 Annual Report, Appendix 5.

At this stage it is worth noting that regulatory costs themselves may give very little indication of the effectiveness of regulation. Higher costs could result from undertaking more regulatory activities or simply from wasting money and being inefficient. Indeed, other things being equal reaching the same market outcomes for lower costs would be expected to be a preferable result. However, regulatory costs do, at the very least, indicate activity on the part of the regulator and therefore give some credibility to the likelihood of regulation arising compared with the situation where regulatory budgets are minimal.

### ***Percentage of budget devoted to enforcement***

Rather than simply looking at total regulatory costs, Coffee also examines the proportion of budgets which are spent on enforcement activities and the results are presented in Figure 3.

**Figure 3: FSA and SEC enforcement activity and other expenditure**



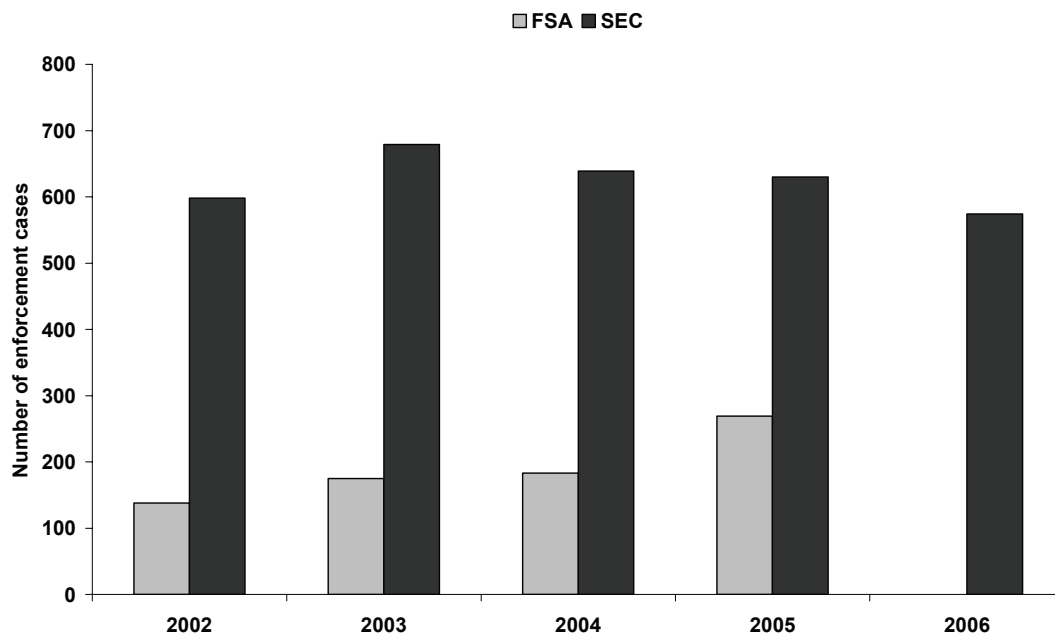
Source: Coffee JC (2007) Law and the Market: The Impact of Enforcement, The Center for Law and Economics Studies, Columbia Law School, Working Paper No 304.

It is clear from these charts that the SEC spends a much greater proportion of its budget on enforcement activities than does the FSA. However the figures for the US derive from the SEC, an agency devoted to securities regulation, whereas those for the UK are for the FSA which covers enforcement of all sectors of the UK financial services industry. If banking and insurance regulation has a greater focus on supervisory activities rather than enforcement activities compared to securities regulation, this could imply that a comparison on securities regulation alone would lead the UK to look more similar to the US in terms of the preparation of budgets focused on enforcement.

### 3.2.3. Number of enforcement cases

Information is also available on the number of enforcement cases which are undertaken and once again it is clear from Figure 4 that the SEC undertakes more enforcement cases than does the FSA, although this would be expected given the larger size of the US market. There is evidence of an increase in the number of enforcement cases being undertaken by the FSA in the UK.

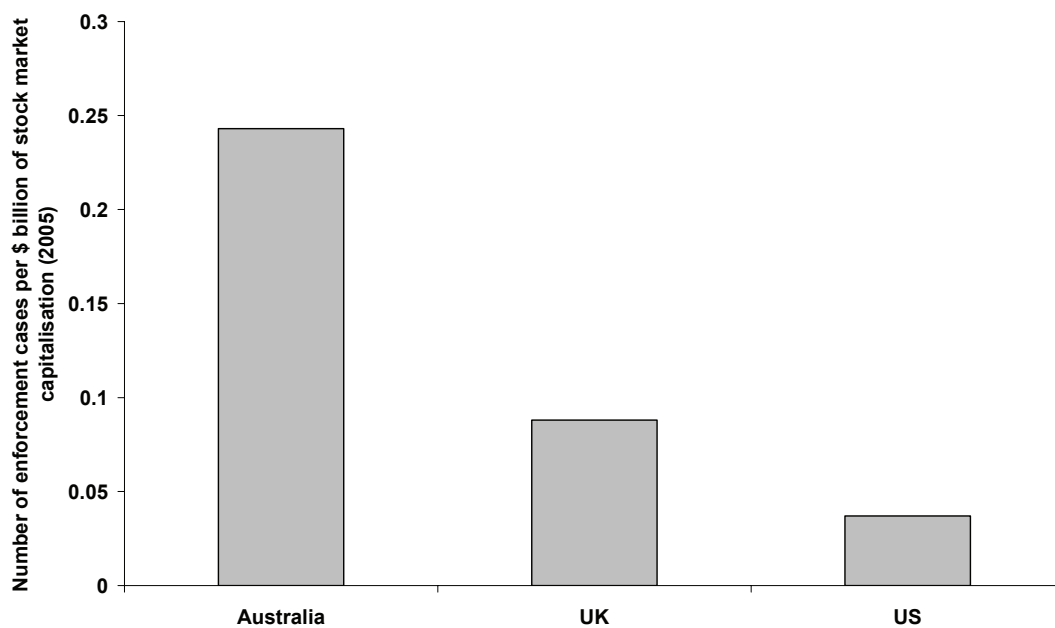
**Figure 4: Number of Enforcement Cases**



Source: Coffee JC (2007) *Law and the Market: The Impact of Enforcement*, The Center for Law and Economics Studies, Columbia Law School, Working Paper No 304.

In Figure 5, the number of enforcement cases is adjusted according to the market capitalisation of the relevant markets.

**Figure 5: Number of Enforcement Cases per \$ billion of Market Capitalisation (2005)**



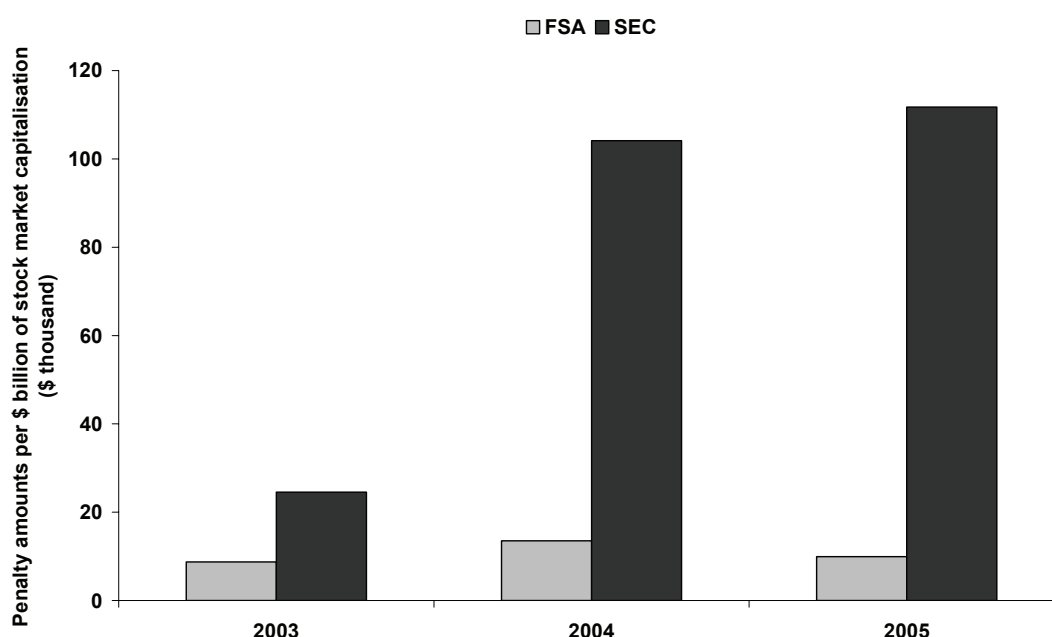
Source: Coffee JC (2007) *Law and the Market: The Impact of Enforcement*, The Center for Law and Economics Studies, Columbia Law School, Working Paper No 304.

It is clear from this chart that Australia undertakes a much greater number of enforcement cases compared to the size of its market than does either the UK or the US.

### 3.2.4. Penalties and sanctions

This section examines the penalties which are applied in the US and the UK. The SEC and the US legal system impose huge penalties and fines as a result of enforcement. Coffee reports that the SEC imposed penalties of \$1.8 billion in 2005/6 compared with penalties of \$30 million imposed by the FSA in the UK. As shown in Figure 6, this relationship still holds after adjustment for relative size of markets.

**Figure 6: Penalty amounts per \$ billion of stock market capitalisation**



Source: Coffee JC (2007) Law and the Market: The Impact of Enforcement, The Center for Law and Economics Studies, Columbia Law School, Working Paper No 304.

In Australia, by contrast, the ASIC obtained Australian \$102 million (or around US\$ 70 million) in recoveries, costs, compensation and fines in 2006-2007 which is more than twice the level of penalties in the UK in 2005 despite a smaller securities market.<sup>26</sup>

In addition to financial penalties, there are differences between the UK and the US regarding other penalties in particular in the form of jail terms. Coffee notes that the US applies substantial custodial sentences for breaching securities regulation whereas this is much less common in the UK.

The extent of such penalties varies. For example, in the UK, insider trading leads to a maximum of 7 years imprisonment whereas in the US violations of

26 ASIC Report of Operations 2006-07 Enforcing the law.

insider trading laws can bring penalties of up to 10 years for each separate offence. The ASIC notes that in 2006-7 it jailed 21 people (an increase from 17 in the previous period).<sup>27</sup>

As a speech by the FSA makes clear, there is recognition that additional criminal prosecution may be required in the UK:

*“For the last two years or so I have been signalling our intention to use our powers as a criminal prosecutor. Why? Its a direct reaction to the findings of the market cleanliness study, anecdotal evidence from the marketplace and the media, the things we see as a result of real time market monitoring, and the belief that criminal prosecution where a custodial sentence is a real risk will act as a stronger deterrent than a civil/administrative market abuse prosecution under FSMA, even though we have the power to impose unlimited fines. I don't think this can be described as being enforcement averse. It is a significant shift of emphasis for the FSA and it comes with risk. Commentators are always eager to point out the UK's poor record on prosecutions for insider dealing.”<sup>28</sup>*

Not only does this signal a greater focus on criminal prosecution but it also highlights the importance of the credibility of the enforcement regime in bringing about a deterrent effect.

### **3.2.5. Enforcement: summary**

Despite a view that the US undertakes much more enforcement activity than other countries, the evidence for this, once data is adjusted for the market size is less compelling. In fact, once the relative market size is taken into account, Australia appears to have the highest spend on regulatory budgets and the highest number of enforcement cases. Indeed, in both of these (market size adjusted) measures the UK also exceeds the US.

It is clear, however, where the US does have more focus on enforcement which is that the US applies stronger sanctions than does the UK, even after adjustments for market size. In addition, the use of custodial sentences is greater in the US than in the UK. But, while the US uses sanctions and criminal penalties considerably more than most other countries, it does not dominate the other five developed economies on all market outcomes, suggesting there is diminishing returns to market outcomes from enforcement activity.

### **3.3. Compliance and compliance gaining strategies**

A significant academic literature has developed which, unlike the suggestions of Coffee that appear to highlight enforcement as the sole method of gaining regulatory effectiveness, focus instead on the range of approaches

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<sup>27</sup> ASIC Report of Operations 2006-07 Enforcing the law.

<sup>28</sup> Enforcing Financial Services Regulation: The UK FSA Perspective, Speech by Margaret Cole, Director of Enforcement, FSA, European Policy Forum, 4<sup>th</sup> April 2008.

which regulators have available to them. The consideration of the tools available in dealing with the problem of securing compliance of a target population with regulation or government policy objectives has been considered within the context of the financial services industry, but also in other industries, with many issues generic across most industries. The following discussion summarises key themes and findings.

### 3.3.1. Compliance versus deterrence strategies

The academic literature focuses on a “normative” debate between two predominant concepts. These are a “compliance” approach associated with co-operative, persuasive, and self-regulatory strategies versus the “deterrence” approach which relies on prosecution and punishment in order to secure compliance through deterrence.<sup>29</sup> An alternative but similar formulation would be to describe these as “accommodative” versus “sanctioning” approaches.<sup>30</sup>

The compliance/accommodative style aims to prevent violations and secure long term co-operative compliance by persuasion, negotiation, bargaining and education. The objective is to achieve compliance, with penal sanctions used only as a last resort because under this style, penalties are often viewed as a symbol of failure in gaining compliance through other means. This style tends to rely on constructive and active engagement with regulatees. By contrast, the sanctioning/deterrence style is more laws-based, arms length, and could be seen as a more inflexible approach. It is orientated towards punishing violations for breaches of legal rules and is associated with reacting to harm-causing conduct and action. Retribution for breach is the main focus, although the threat of punishment is intended to deter illegal behaviour. The sanctioning style tends to view successful imposition of penalties as a victory and as likely to send a strong signal to others in the market.

The OECD notes that:

*“This meaning of ‘compliance’ ... arose out of a number of studies of how regulatory officials actually enforce the law. These studies found that, particularly in the UK, regulatory officials generally prefer to use strategies of education, persuasion, and co-operation to persuade businesses to voluntarily and preventively comply with regulatory rules in the first instance (e.g. Braithwaite 1985; Hawkins, 1984; Hutter, 1997), rather than to use adversarial and punitive means to sanction non-compliance.”<sup>31</sup>*

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29 Aalders, M & T Wilthagen (1997) “Moving beyond command-and-control: Reflexivity in the regulation of occupational health and safety and the environment, 19 Law & Policy, pp. 415-443. Scholz, J (1997) Enforcement policy and corporate misconduct: The changing perspective of deterrence theory, 60(3) Law & Contemporary Problems, pp. 253-268.

30 Bird H, D Chow, J Lenne and I Ramsay (2004) ASIC Enforcement patterns, University of Melbourne Faculty of Law, Legal Studies Research Paper 71.

31 OECD (2000) Reducing the risk of policy failure: Challenges for regulatory compliance.

Indeed, the UK's Financial Services Authority notes that,

*“Ex-ante supervision is an important part of [our] approach reducing the need for ex-post enforcement. The emphasis and resource we give to supervision clearly distinguishes us from the SEC.”<sup>32</sup>*

Proponents of the deterrence/sanctioning approach have argued that companies and firms are profit maximisers and “amoral calculators” who will comply only when it is in their rational economic interest to do so and that heavy penalties were therefore the relevant incentive to achieve compliance. However, other researchers have argued that this theoretical analysis of corporate behaviour is not an accurate description of the reality of compliance in most regulated firms.

Researchers make a number of points in this regard. Management is much more likely to perceive the negative impact of non-compliance to be associated with bad publicity than financial penalties. Informal sanctions including public criticism, gossip, embarrassment and shame are found to be more powerful motivators of compliance than formal enforcement actions such as fines or compensation especially when these fines are made against the firm. A related point is that firms wish to maintain an image of legitimacy in the eyes of industry peers, government, and the public. Potential loss of this legitimacy is a very strong motivation for management and causes them to strongly wish to avoid the public censure associated with non-compliance when it is exposed to the public eye. Another theme in the literature is that a co-operative and persuasive approach is often appropriate because most individuals/businesses are “ordinarily inclined to comply with the law, partly as a matter of long-term self interest”.<sup>33</sup> The OECD notes:

*“In summary, the picture of the organisation as an amoral calculator moved by appropriate deterrence to ‘do the right thing’ must be supplemented by the facts that organisations can sometimes be persuaded to do the right thing, that some influential actors within organisations will be highly motivated to be legally or socially responsible for its own sake, that the existence of deterrence threats will not necessarily be a feature of daily decision making, that many organisations will behave in ways that they feel maintain their legitimacy in the eyes of industry peers, customers, or governments irrespective of individual cost and efficiency calculations, and that even where formal sanctions are applied, it is their informal ramifications (shame and negative publicity) that are more effective motivators.”<sup>34</sup>*

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32 Enforcing Financial Services Regulation: The UK FSA Perspective, Speech by Margaret Cole, Director of Enforcement, FSA, European Policy Forum, 4<sup>th</sup> April 2008.

33 Kagan R. & J Scholz (1984) The 'criminology of the corporation' and regulatory enforcement strategies in Hawkins, K & J Thomas (eds) Enforcing Regulation, Kluwer Nijhoff Publishing, Boston, pp.67-95.

34 OECD (2000) Reducing the risk of policy failure: Challenges for regulatory compliance.

The OECD also summarises the case for a “compliance” approach:

*“Some impressive evidence has been collected by researchers which shows that, although co-operative and persuasive strategies are not always appropriate, when they are successful they are superior to punitive sanctions in effectively and efficiently accomplishing long term compliance. A large body of empirical sociological and psychological research converges on the finding that non-coercive and informal alternatives are likely to be more effective than coercive law in achieving long term compliance with norms, and coercive law is most effective when it is in reserve as a last resort. For example, there is significant psychological evidence for a ‘minimal sufficiency principle’ that the less powerful the technique used to secure compliance, the more likely is long term internalisation of a desire to comply.”<sup>35</sup>*

### **3.3.2. Responsive regulation**

The “compliance” strategy recognises that firms may have a variety of motivations and reactions to regulation of their activities. Effectiveness in gaining compliance may thus depend on the regulator having the ability to adapt its strategy to different settings, using the compliance gaining tools at its disposal in different “mixes” depending on the context. Such an approach is inherently flexible and is aimed at achieving a good standard of compliance. The approach will be pragmatically constructed in terms of identifying what works as a means of gaining compliance in the regulated community.

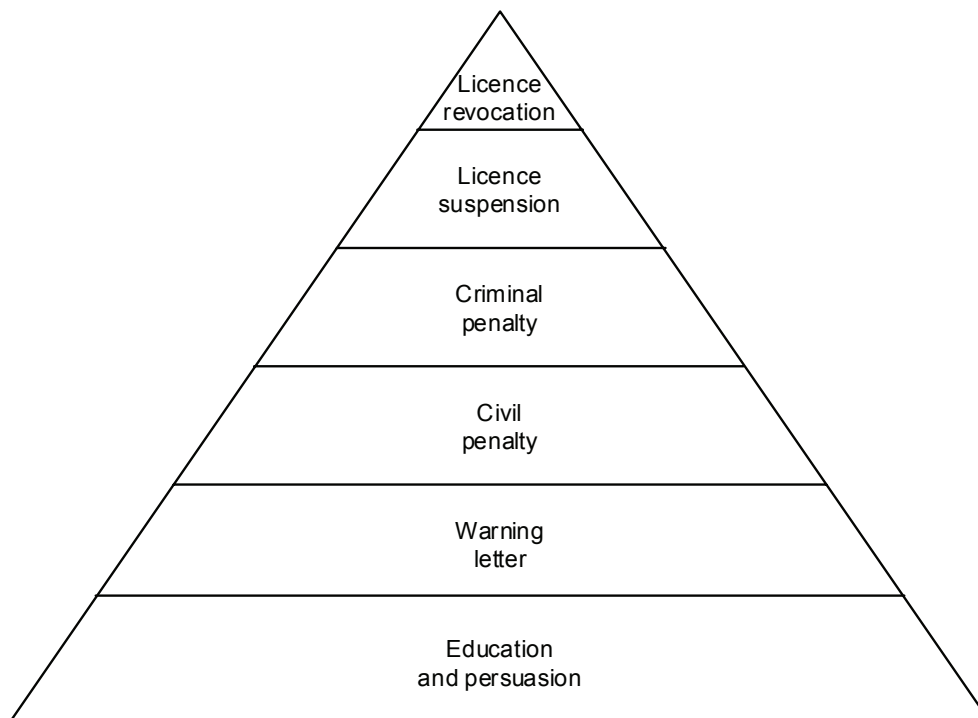
The best known formulation of this flexible approach to gaining compliance is encapsulated in a pyramid associated with a concept entitled “responsive regulation,” based on publications by Ayres and Braithwaite.<sup>36</sup> The pyramid is shown in Figure 7.

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<sup>35</sup> OECD (2000) Reducing the risk of policy failure: Challenges for regulatory compliance.

<sup>36</sup> Ayres and Braithwaite (2002) Responsive Regulation.

**Figure 7: Responsive regulation**



Source: Ayres and Braithwaite (2002) Responsive Regulation.

Each level in the hierarchy represents a compliance-gaining tool or activity with the tools becoming harsher towards the top of the pyramid. Regulators may have a specific strategy to use each different tool on its own or to use them in combination with others. When applying them to individual firms, there may be the possibility of escalating or de-escalating their response depending on the conduct of the regulatee over time.

There is a presumption from the pyramid shape that compliance-gaining activity should be more frequent and concentrated at the bottom of the pyramid with sanctioning activity at the top of the pyramid used less frequently. Activities along the lines of education and persuasion are typically lower cost activities and may be effective ways to engage a range of regulated firms that are genuinely minded to comply. By contrast, sanctioning activity at the top of the pyramid is likely to involve court cases which are inherently expensive, lengthy, and risky as well as being focussed on the specifics of one particular firm at any given time. They are risky because, if the regulator loses, credibility of the whole system is seriously diminished.

Ideally, however, there should always be some “criminal penalty” activity to demonstrate that the regime has teeth, and that it would be wiser for firms to engage with the regulator at lower levels of the pyramid. The question for the regulator is how to use this hierarchy of tools in the most effective manner in engaging its regulated community.

Although the pyramid above is taken from a particular study, it is clear that it could be extended through additional gradations of the pyramid. For example, an active supervision process in which regulators challenge firms to

improve and comply can be a central part of a regulator's compliance gaining strategy. Regulators may also engage in operational intervention when firm practices are felt to be sub-par in some respect, with a programme of improvement imposed upon the firm and monitored by the regulator. This intervention may be perceived as less severe than public sanctions or fines but will engage the firm's full attention and may involve them incurring substantial costs to implement the improvements.

The ability to reach the same ends through a different mix of regulatory tools is also confirmed in other academic research which focuses on critiquing the research by Coffee. For example, Jackson states that,

*"All of these alternative mechanisms of social control are plausible substitutes for the formal enforcement actions that characterize the regulatory activity in the United States and a few other jurisdictions. The relative scarcity of enforcement actions in these other jurisdictions does not necessarily imply greater non-compliance or economic drag."*<sup>37</sup>

Furthermore, Jackson notes that "some foreign jurisdictions private monitors do a better job of amplifying public sanctions than do US markets".

### **3.3.3. The need for enforcement and supervision**

While accommodative compliance gaining approaches are important, academic evidence also finds that enforcement is essential. This is both as a method for dealing with the minority of organisations that do not comply and also to act as a deterrent to prevent others from non-compliance. As noted earlier, regulatory law without any enforcement is shown to be ineffective.<sup>38</sup> This also helps those firms which are naturally inclined to comply to be persuaded that the regulator will prevent non-compliers from "free-riding" and exploiting those that do comply.

This conclusion is also consistent with research that we have conducted through a series of meetings with regulatory officials in agencies across Europe as well as with those representing investors in many jurisdictions. During these meetings, government officials and industry representatives consistently highlighted the importance of a few high-profile enforcement investigations involving significant sanctions as a means to creating a genuine deterrent effect on those who might be tempted to engage in market abuse.<sup>39</sup>

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<sup>37</sup> Jackson HE (2008) The impact of enforcement: A reflection, University of Pennsylvania Law Review.

<sup>38</sup> Bhattacharya U and H Daouk (2002) The World Price of Insider Trading, Journal of Finance, 57, 75-108, February 2002.

<sup>39</sup> Evaluation of the economic impacts of the Financial Services Action Plan, CRA International, March 2009 forthcoming. It is interesting to note that interviewees indicated that only a few such cases would be required.

This role of enforcement is also noted by ESME,

*“There is a concern that without the Market Abuse directives being seen to be implemented [i.e. enforced], abusive practices are continuing. There is little incentive for compliance among general market users where there appears to be a low risk of being caught, which is partly a result of settlements that are not published, and where sanctions are light.”<sup>40</sup>*

As noted here, it is the establishment of a threshold level of credibility regarding the reality of enforcement through a few demonstration cases, rather than necessarily the pursuit of large numbers of enforcement cases, which impacts behaviour. This could explain why developing countries (where the credibility of new laws may need to be demonstrated through enforcement) show measurable improvements in market outcomes after enforcement cases, while this effect is harder to observe in developed countries that already have a credible regime. However, regulators in advanced economies may also need to undertake enforcement cases in order to demonstrate the credibility of new areas of the law where it does not yet seem to be established, or where there are doubts regarding the credibility of its regime.

Indeed, this need is recognised by the FSA,

*“Where enforcement is key is where we need to be visible in the market place sending tough messages about wrongful behaviour and imposing sanctions (which doesn't just mean fines) which are severe enough to have deterrent effect. We recognise that we need to do enough enforcement cases of the right sort to have "demonstration effect" to bring about our strategy of "credible deterrence.”<sup>41</sup>*

### **3.4. Summary**

The academic literature provides very strong evidence that regulation and law impact the performance of securities markets. The papers described here take different approaches and use different data sets but all arrive at a similar conclusion that governments and regulators are able to influence market outcomes in securities markets in a positive manner through legal and regulatory frameworks. Much of the research contains correlation analysis between indices of regulatory/enforcement inputs and market outcomes such as cost of equity, size and liquidity of markets, or valuation premiums. Through their modelling these researchers discover statistically significant relationships providing empirical evidence of a causal relationship between regulatory inputs and market outcomes. Where strong investor protection and good legal regimes exist, there are good market outcomes, and where protections are weak, outcomes are poor.

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40 Market abuse EU legal framework and its implementation by Member States: a first evaluation, ESME, 6<sup>th</sup> July 2007.

41 Enforcing Financial Services Regulation: The UK FSA Perspective, Speech by Margaret Cole, Director of Enforcement, FSA, European Policy Forum, 4<sup>th</sup> April 2008.

The key issues in effective regulation identified by these studies are: high accounting standards; thorough disclosure and transparency of information; protection of minority shareholders; high governance standards; and insider trading laws.

A main feature of these analyses is the clear differentiation between less developed economies and more developed economies in samples of forty to fifty countries. Advanced economies rank highly on indices of investor protection and effective legal systems and they deliver good market outcomes. As such the differences between developing and developed countries may be driving the results that better legal frameworks lead to better market outcomes.

The issue of enforcement is also seen to be important, since a failure to enforce laws can lead to a lack of credibility regarding these laws and may lead to a lack of beneficial impacts on market outcomes. However, simple punitive/deterrence theories focused on enforcement alone, as expounded by Coffee, are not supported by the literature, especially in advanced economies where regulatory credibility is already established.

Instead, there is a range of activities which regulators can undertake as part of their compliance gaining strategies. There appears to be considerable consensus that a strategy based on punishment and deterrence alone is inferior to a strategy based on persuasion, education, and co-operation that holds coercive measures in reserve to handle a minority of non-compliers. A holistic mix of tools employed flexibly in constructive engagement with regulatees is suggested as an appropriate way forward, so long as there is always the real possibility of escalation to tougher measures.

## 4. MARKET OUTCOMES

Market outcomes are measures of economic activity which, in this case, relate to the efficient and effective functioning of securities markets. They are the measures which characterise aspects of economic fundamentals and attempt to capture the end results of the way that the market functions.

As such, market outcomes differ fundamentally from the aspects of regulation that were discussed in the previous chapter such as laws and regulatory activity which we would consider to be input variables. For example, expenditure on regulation per se is of little value if it is simply a deadweight loss (or worse) and does not change the way that the market functions in a beneficial way. In practice, and as discussed in the previous chapter, it is to be expected that these different regulatory inputs will in fact impact the markets that are regulated.

In this chapter we set out quantitative data on market outcomes in equity markets in five advanced economies: Australia, France, Germany, the UK and the US.

We have selected four market outcomes for analysis. These indicators because are relevant, widely discussed in the literature, and in the case of the first three relatively tractable in terms of data availability. The market outcomes we selected are:

- Cost of equity;
- Market size and liquidity;
- Listing decisions; and
- Market cleanliness.

For each market outcome, we provide data where possible and discuss how regulation and other relevant factors may be affecting performance of the indicator. It is worth noting that most data we present is from 2007 or earlier due to data availability issues. Thus the data does not capture the major market turbulence of 2008 associated with the worsening financial crisis.

As well as setting out the relevant data, we seek to determine whether the data suggests any meaningful differences in effectiveness of securities regulation in these five economies. In particular, given the hypothesis advanced by the advocates of the sanctioning approach to regulation, we assess whether differences regarding sanctions explained in section 3.2 explain any differences in the market outcomes.

Furthermore, examining data on market outcomes is likely to be useful in the debate on mutual recognition if, as we explain further in Chapter 5, similarity in market outcomes is an important element in assessing whether such recognition should be considered.

### 4.1. Market outcome: cost of equity

In this section of the report we examine cost of equity as a key market outcome in Australia, France, Germany, the UK and the US.

Firms need capital to fund their businesses and the cost of equity represents the amount that firms must pay to equity investors in return for this investment. Conversely it is the return required by a shareholder in a company in order to be willing to invest in the company through equity investments. In the Capital Asset Pricing Model it is defined as the risk free rate of interest plus an equity risk premium which is further adjusted to reflect volatility of a firm's shares relative to the market as a whole. Firms are financed by both equity and debt. Cost of capital is the blended cost of a company's debt and equity, although our analysis is primarily concerned with the cost of equity.

Cost of equity is an extremely important market outcome because it is one of the key cost or input factors for every company and therefore, in aggregate, strongly affects the performance of the entire economy. Companies will want a low cost of equity because this means that it is cheap for them to borrow from equity investors. Lower input costs for companies and more investment funded at a lower cost should enhance the performance of the economy. A reduced cost of equity for all companies should improve economic welfare and is therefore an extremely desirable market outcome.

#### **4.1.1. The effect of regulatory and legal standards on the cost of equity**

As noted in section 3.1, academic evidence finds that good regulatory and legal standards reduce the cost of equity. Indeed, this is supported by Arthur Levitt, former Chairman of the US Securities and Exchange Commission, who said in 1998 "The truth is, high standards lower the cost of equity." This statement summarises a belief that regulatory imposition of "high standards" is the key driver of a lower cost of equity.

It is intuitively clear that full and credible disclosure reduces information asymmetries between management and investors. This effect enhances investor confidence and in turn reduces uncertainty and estimation risk for investors and thereby the cost of equity. In capital markets with incomplete information, a company may obtain better investor recognition by providing good disclosure (Merton, 1987), thus enlarging the investor base and improving risk sharing. Better disclosure may also reduce investors' monitoring costs and, hence, their required return for holding any particular equity.

In addition, credible disclosure reduces the ability of management or of majority shareholders to unfairly compensate themselves at the expense of ordinary shareholders. The presence of effective legal and regulatory systems which demand disclosure and are able to achieve redress for investors when firms violate the rules is also an important factor in reducing investor risk.

#### **4.1.2. Cost of equity across countries**

In the following sections of the report we summarise a number of studies on cost of equity in the five countries. We would expect to find that differences in regulatory effectiveness should yield differences in cost of equity. For example, Lombardo and Pagano demonstrated that total stock market returns in a large number of countries are positively correlated with overall measures of the quality of regulation. Similarly, in a 2002 survey, McKinsey and Company found that institutional investors were willing to pay a significant

premium (12-14%) for companies exhibiting strong governance standards which should reduce investor risk.<sup>42</sup>

### **Cost of equity results: five countries**

Estimating cost of equity is not straightforward and there are relatively few examples of comparative estimates across a large number of countries. However, two such studies have been conducted by Hail and Leuz.<sup>43</sup> Results for the cost of equity from these two studies are provided in Table 4-1 below.

**Table 4-1: Cost of equity estimates**

	Hail and Leuz 2006 (rank)	Hail and Leuz 2008 (rank)
Australia	10.72% (5)	11.02% (1)
France	10.37%(3)	11.17% (3)
Germany	10.05% (1)	11.03% (2)
UK	10.64% (4)	11.48% (4)
US	10.24% (2)	N/A

Source: Hail and Leuz (2006) and Hail and Leuz (2008). Note that they do not compute the cost of equity estimate for the US in their 2008 paper.

It is clear from these figures that the estimates for the cost of equity in these five countries are very similar; the calculations in each of the papers differ by less than one percentage point across the five countries.

In each study, the cost of capital estimates which are presented are themselves averages of estimates derived from four different models for calculating the cost of capital. The differences between the estimates from each of these models appear to be greater than differences between the five countries under examination.<sup>44</sup>

In addition, the differences in the estimates between the two studies are greater than the differences between countries within either study. For example, for Germany the estimates in the two studies are 10.05% and 11.03% yet this range would encompass the estimates for all of the other four countries from the earlier study.

<sup>42</sup> McKinsey (2002) Global Investor Opinion Survey.

<sup>43</sup> Hail L and C Leuz (2006) International Differences in the Cost of Equity Capital: Do Legal Institutions and Securities Regulation Matter? *Journal of Accounting Research* Vol 44 No 3, June 2006 and Hail L and C Leuz (2008) Cost of Capital Effects and Changes in Growth Expectations around US Cross-Listings.

<sup>44</sup> Note that it is not possible to confirm that this is the case for each country across all of the models used, but on the basis of summary statistics provided, the average across models for the mean cost of capital for the whole sample of countries in Hall and Leuz (2008) is 12.49% while the range from the four models is from 9.25% to 14.59%.

Finally, we note that the rank of the countries varies between the two studies. For example, Australia has the highest cost of equity estimate in the 2006 study but the lowest in the 2008 study.

Given the methodological complexity of producing these figures, the small differences in cost of equity between the five countries are not very meaningful and we believe that the cost of equity market outcome is essentially the same for the five. We note that theory predicts that New York should have an advantage in cost of equity because of its great size and liquidity, but the results do not suggest that the US has a significantly lower cost of equity compared with the other four countries.<sup>45</sup>

By contrast, substantially higher estimates for the cost of equity are observed in developing countries. For example, Brazil, Egypt, Indonesia, Mexico, Pakistan, Peru, South Africa and Sri Lanka all have cost of equity estimates of greater than 15% in both studies.

### **Equity risk premium**

Two important academic studies have calculated the equity risk premium for the five countries. Equity risk premium is a key component of the cost of equity. This premium represents the arithmetic difference between an investor's return on equity and the risk-free government bond or bill rate. This extra return over the risk free rate measures the extra compensation investors require for holding equities relative to government securities. Effective regulatory and enforcement regimes should produce a low equity risk premium (because risks of holding equities are reduced by regulation which protects those investors), while less effective regimes should produce a higher figure.

One of the studies of the equity risk premium that is most widely used in the UK is that of Dimson, Marsh and Stanton (DMS). It relies on over 100-years of data and corrects for survivorship bias. Table 4-2 sets out their estimates.

**Table 4-2: Equity risk premia estimates (1900-2005)**

	Arithmetic mean relative to bills (%)	Arithmetic mean relative to bonds (%)
Australia	8.5%	7.8%
France	9.3%	6.0%
Germany	9.1%	8.3%
UK	6.1%	5.3%
US	7.4%	6.5%

Source: Dimson, Elroy, Paul Marsh and Mike Staunton (2006), "Global Investment Returns Yearbook 2006", ABN Amro, February.

45

Chordia, Tarun, Asani Sakar and Avanidhar Subrahmanyam (2005), An Empirical Analysis of Stock and Bond Market Liquidity, *The Review of Financial Studies*, Vol. 18, No. 1, pp. 85-129.

The DMS figures demonstrate that the UK has a lower equity risk premium than the other five countries, with the US also having fairly low figures and Germany having relatively high figures.<sup>46</sup>

Lee, Walker, and Christensen's research on the equity risk premium examines cost of equity in 17 European countries and focuses on more recent data.<sup>47</sup> They find that the UK has consistently achieved the lowest equity risk premium of the 17 countries over the 11 year period from 1995 to 2006. Specifically, they find that for the period 1995-2005 the equity risk premium of the UK is 4.64% versus an average 5.84% for the other European countries. They attribute this low equity risk premium to the UK's strong regime of disclosure and investment protection relative to other European jurisdictions during this time period. They demonstrate the relative strength of the UK regime using five variables which were:

- Outsider rights;
- Importance of the equity market to the economy;
- Ownership concentration;
- Disclosure quality; and
- Earnings management.

They find, based on survey evidence from across Europe, that the UK scores for these five variables are far higher in aggregate than those of the other countries in their European sample. We note in passing that harmonisation of European securities market regulation resulting from various directives such as accounting directives bringing in IFRS reporting, the Transparency Directive and the Prospectus Directive should cause convergence amongst European companies in these figures in future years.

#### **4.1.3. Globalisation and convergence**

One of the factors that increasingly impacts the cost of equity, and is especially relevant in the context of interest in mutual recognition between countries, is globalisation.

Globalisation allows firms to have a diversified base of investors, thus decreasing their cost of capital through a "portfolio effect". This arises because equity can be held by a larger number of investors with different portfolio exposures and hence a different appetite for bearing risks. Diversification by overseas investors has the effect of reducing the equity risk premium for all companies (or at least all large companies who attract such global investors).<sup>48</sup>

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46 It should be noted that both France and Germany were found to have high historical volatility and poor historical bond and bill returns which impacts the estimates of the equity risk premium in those countries.

47 Lee, Walker and Christensen (2006) The cost of capital in Europe, Research Report No 94 ACCA.

48 Stulz, Rene (2003) Globalization, Corporate Finance, and the Cost of Capital, in Joel M. Stern and Donald H. Chew, Jr. ed., "The Revolution in Corporate Finance", 4<sup>th</sup> ed, Blackwell Publishing, Chapter 29, pp.443-460.

By contrast, where barriers to international investment segment a national capital market from global markets, the local investors bear all the risk of the economic activities in their economy. For bearing this risk, such investors require a higher risk premium that effectively reduces the value that local investors are willing to place on the stock relative to what a globally diversified investor would if given a chance. Therefore, in closed economies cost of capital tends to be higher than in open economies.<sup>49</sup> Despite benefits of globalisation, however, there remains strong evidence of “home-bias” in international capital markets where domestic investors prefer to hold domestic assets.<sup>50</sup>

As investors increasingly participate across major markets on a global basis this would be expected to lead to convergence in the (already very similar) cost of equity in the large capital market centres. In the context of mutual recognition, it also implies that increased mutual recognition, by providing access to a wider base of investors, would be expected to lead to a lower cost of equity in both countries party to such an agreement.

#### **4.1.4. Cost of equity: summary**

The evidence presented in this chapter demonstrates that cost of equity is very similar in the five countries examined. Given the similarity of the results, there is no indication from this market outcome that the regulatory regime of any of the five countries is especially less effective than that of the other four. By contrast, there is evidence indicating that developing countries have substantially higher costs of equity in comparison to the five countries.

## **4.2. Market outcome: market size and efficiency**

The academic literature cited earlier indicates that effective regulation leads to larger, more liquid, and better developed capital markets. In this section we compare measures along these dimensions for Australia, France, Germany, the UK and the US.

### **4.2.1. Market size**

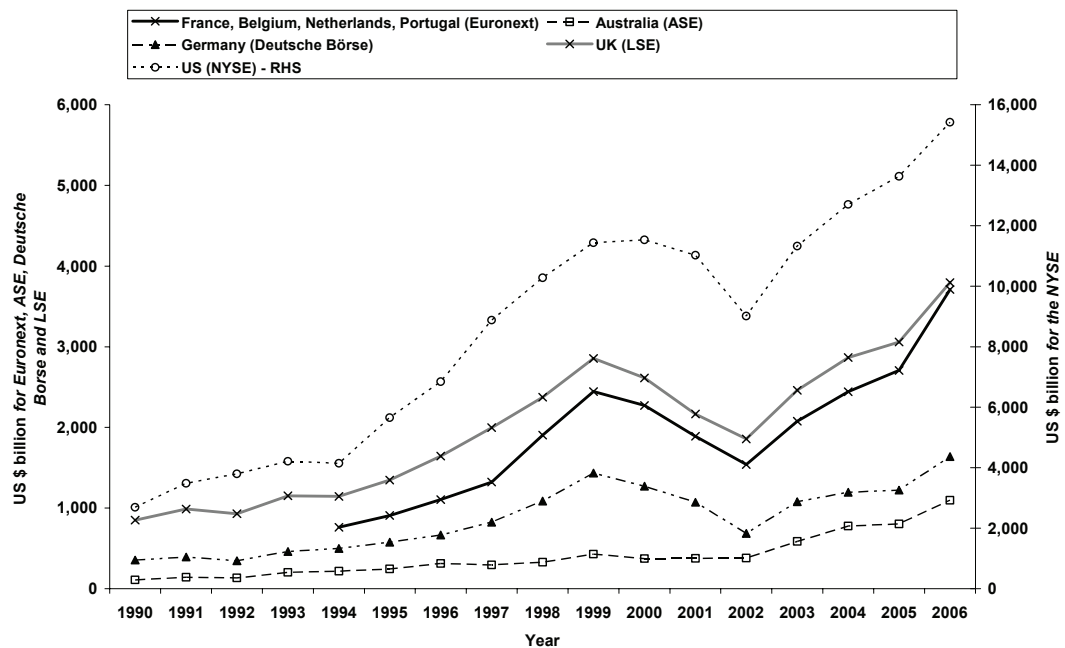
As seen in Figure 8, the New York Stock Exchange (measured by the axis on the right hand side) is approximately four times larger than the London Stock Exchange and Euronext, which are about the same size, with Australian and German exchanges trailing behind.

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49 Miller, M (2003) “Financial Markets and Economic Growth” and Stulz, R (2003) “Globalization, Corporate Finance, and the Cost of Capital”, both in Joel M. Stern and Donald H. Chew, Jr. ed., “The Revolution in Corporate Finance”, 4<sup>th</sup> ed, Blackwell Publishing, Chapter 29, pp.443-460.

50 Stulz R (2008) “Securities Laws, Disclosure and National Capital Markets in the Age of Financial Globalisation”, Fisher College of Business Working Papers, WP 2008-13, July and Kho, B.C., R Stulz and F Warnock (2008) “Financial Globalisation, Governance and Home Bias”, The Ohio State University Working Paper.

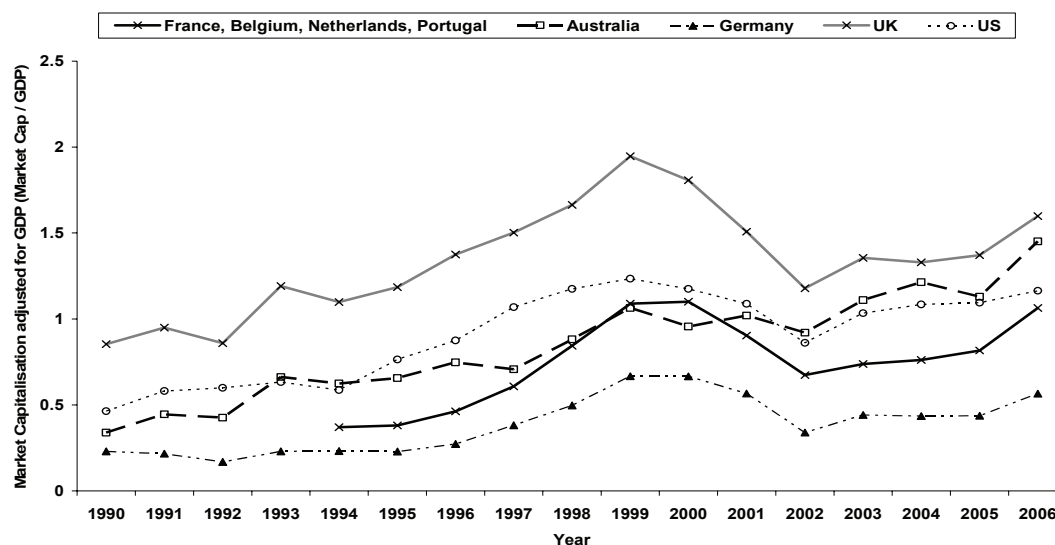
**Figure 8: Market capitalisation**



Source: WFE and CRA calculations.

However, when these figures are adjusted to reflect the size of economies, a different picture emerges as shown in Figure 9. The UK is largest in relative terms, followed by Australia, the USA, and the Euronext countries. Measuring the size of the markets on this GDP adjusted basis provides a good indicator of whether capital markets have developed to a high degree in a country. Capital markets that are large relative to their economy may be said to have developed well within the constraints of their economic environment.

**Figure 9: Market capitalisation adjusted for GDP**



Source: WFE, IMF World Economic Outlook Database and CRA calculations. GDP for the Euronext countries has been combined to obtain the adjusted calculation.

#### 4.2.2. Market efficiency: transaction costs

A further indicator of market development is efficiency of markets as measured by transaction costs. Oxera found that the US was slightly more efficient than the UK which was in turn slightly cheaper than France and Germany as indicated in Table 4-3. However, differences are relatively modest.

**Table 4-3: Total trading costs for institutional investors**

Total trading costs (basis points)	
France	27.0
Germany	27.1
UK (excluding stamp duty)	25.5
US (NYSE)	23.5

Source: Oxera (2006) The Cost of Capital: An International Comparison prepared for the City of London Corporation and the London Stock Exchange.

#### 4.2.3. Market size and efficiency: summary

The theoretical and empirical work referenced earlier in this paper indicated that capital markets are deeper and better developed where effective regulatory regimes are present. The evidence show that New York is vastly larger in absolute terms, but smaller than London and Australia and similar to Euronext on a GDP adjusted basis. Adjusting by GDP is relevant as it demonstrates market development relative to the economy in which the

market is located. Transactional efficiency is better in New York, as might be expected given its much greater scale compared to the other markets.

In terms of overall market outcome in size and transaction costs, there is once again some clustering of results. No market seems to have lagged behind in a significant manner, with the possible exception of Germany where market capitalisation adjusted for GDP is lower than in the other countries.

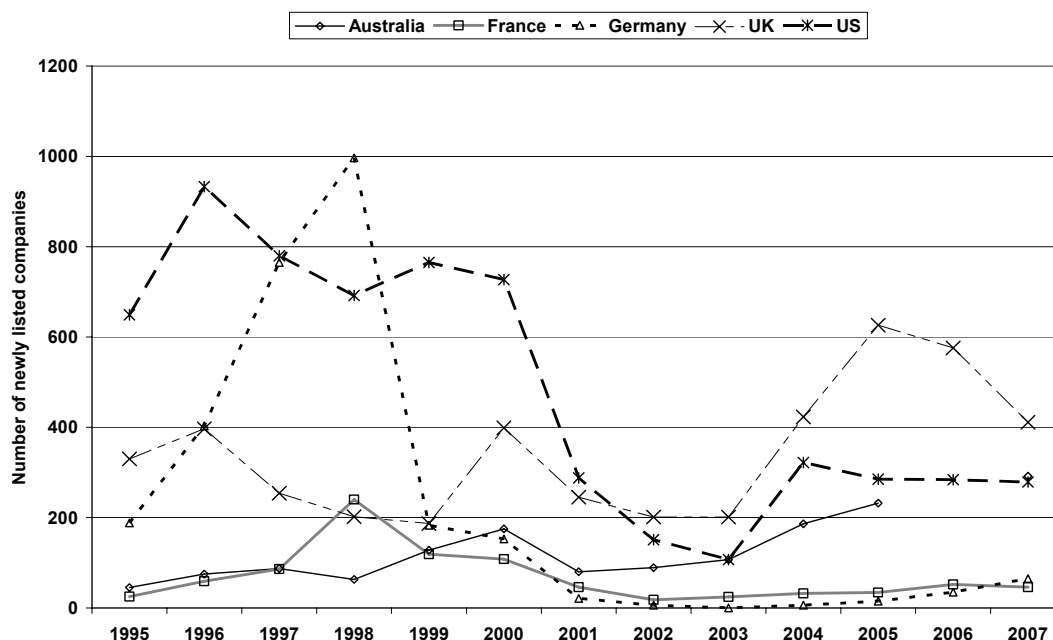
### 4.3. Market outcome: new listings

We analyse in this section the performance of Australia, France, Germany, the UK and the US in attracting new listings on their exchanges. The ability of a market to attract new listings is considered an indicator of its attractiveness and utility as a capital centre. Many market participants therefore keenly follow the figures on new listings.

#### 4.3.1. New listings performance: five financial centres

Figure 10 illustrates new listings in Australia, France, Germany, the UK and the US between 1995 and 2007. In recent years the UK has attracted significantly more listings than the US. From a strongly leading position the US has declined dramatically to be replaced by the UK which has sharply increased its number of new listings. New listings in Australia have grown to a level slightly higher than the USA in 2007. Euronext and Germany have many fewer new listings than the other three countries.

**Figure 10: New listings in selected countries**



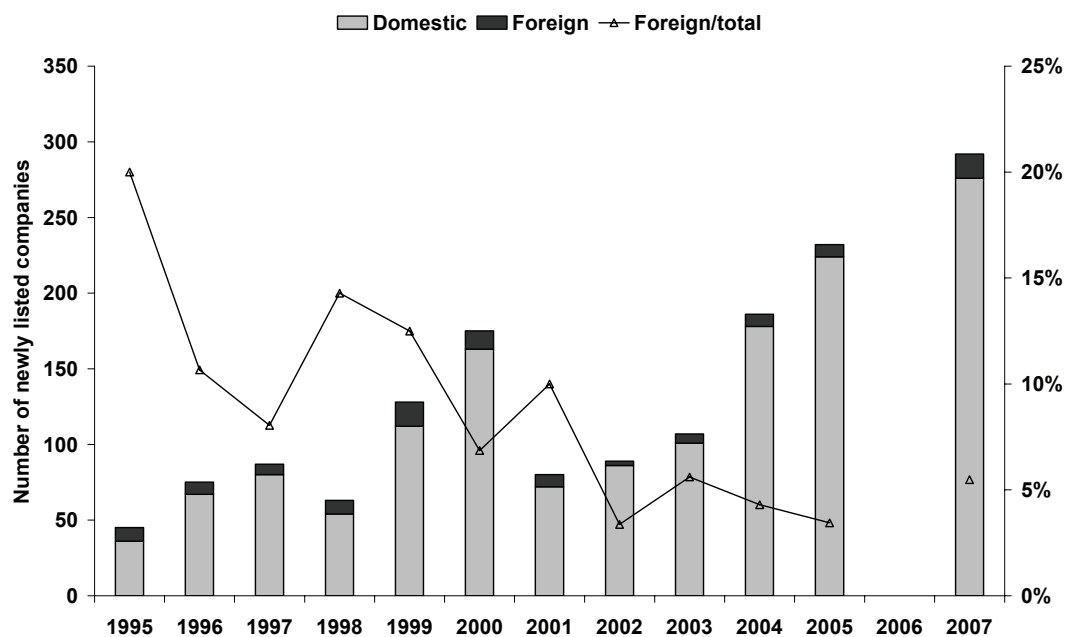
Source: WFE and CRA calculation. Note that before 1999 the Deutsche Boerse statistics contained a large number of companies which were admitted to trading but not listed (known as "Freiverkehr"), while in 1999 the numbers were adjusted to include 'listed' companies only. It should also be noted that methodological changes mean that data before 2000 may not be comparable to later data.

In the following sections we provide more detailed data on each country.

### ***New listings in Australia***

Although total listings have been increasing in the past seven years (data for 2006 is unavailable from the same source), the proportion of listings which are foreign has been declining over the past decade. The ability of Australia to attract foreign listings has not been strong during this period, although total listings have shown sharp growth.

**Figure 11: New listings in Australia**

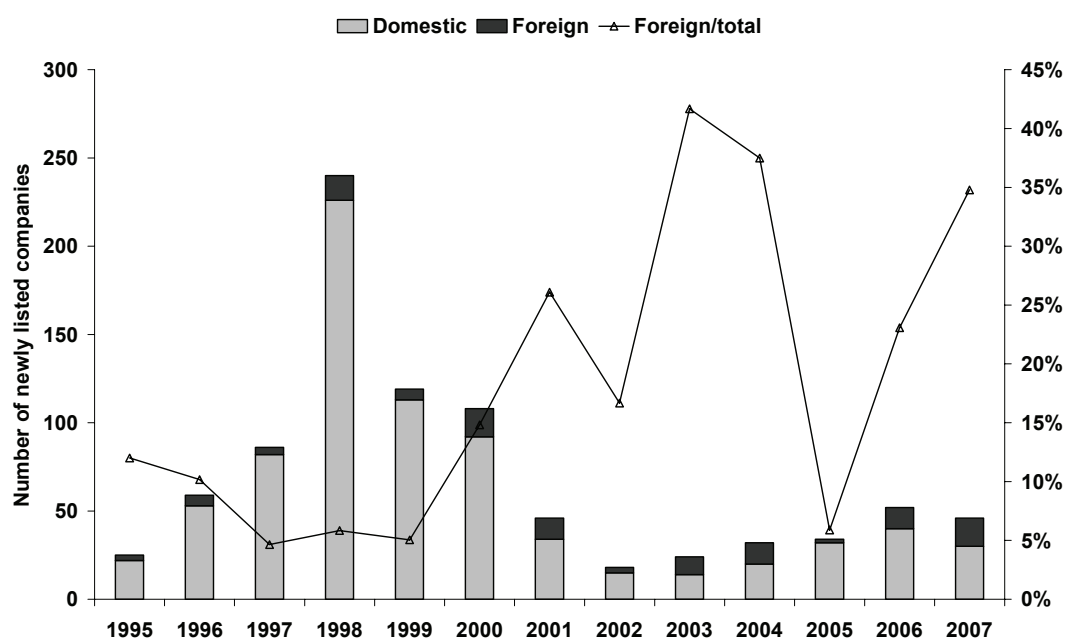


Source: WFE and CRA calculation

### ***New listings on Euronext***

The data for France must be treated cautiously. The data before 2000 represents the Paris Bourse only but from 2000 onwards it represents data for Euronext which consolidated several exchanges.

**Figure 12: New listings in France**



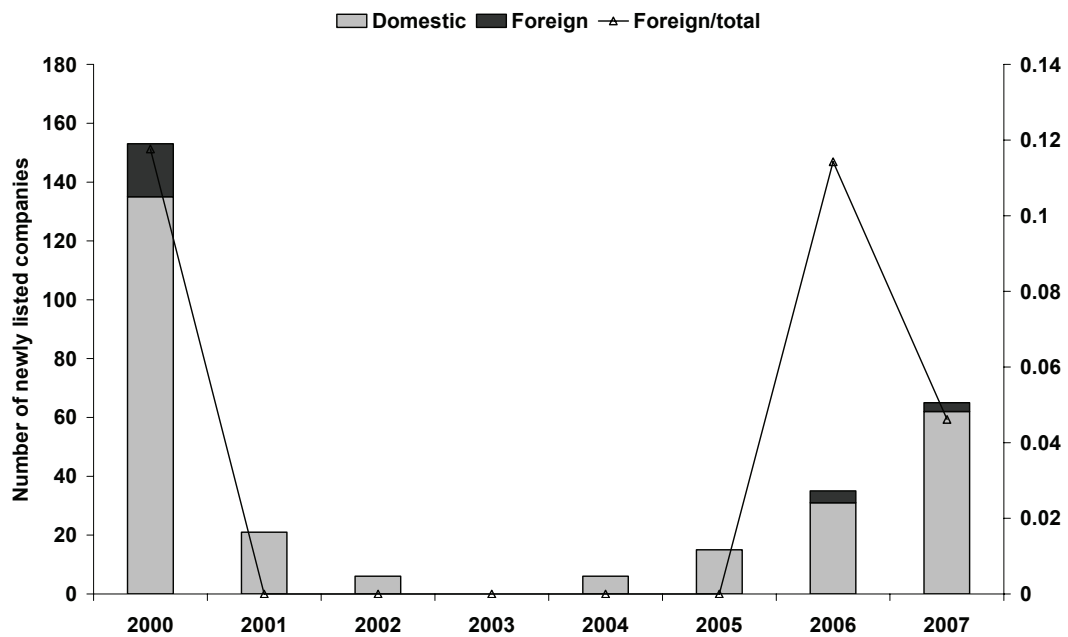
Source: WFE and CRA calculation

There is no clear trend in the proportion of listings which are foreign. The absolute number of listings is small, for both domestic and foreign companies.

### ***New listings in Germany***

In Figure 13, we show data for Deutsche Boerse from 2000 onwards because the data before that time is not comparable. Deutsche Boerse shows growth over the last five years although there were a relatively small number of both domestic and foreign new listings.

**Figure 13: New listings in Germany**

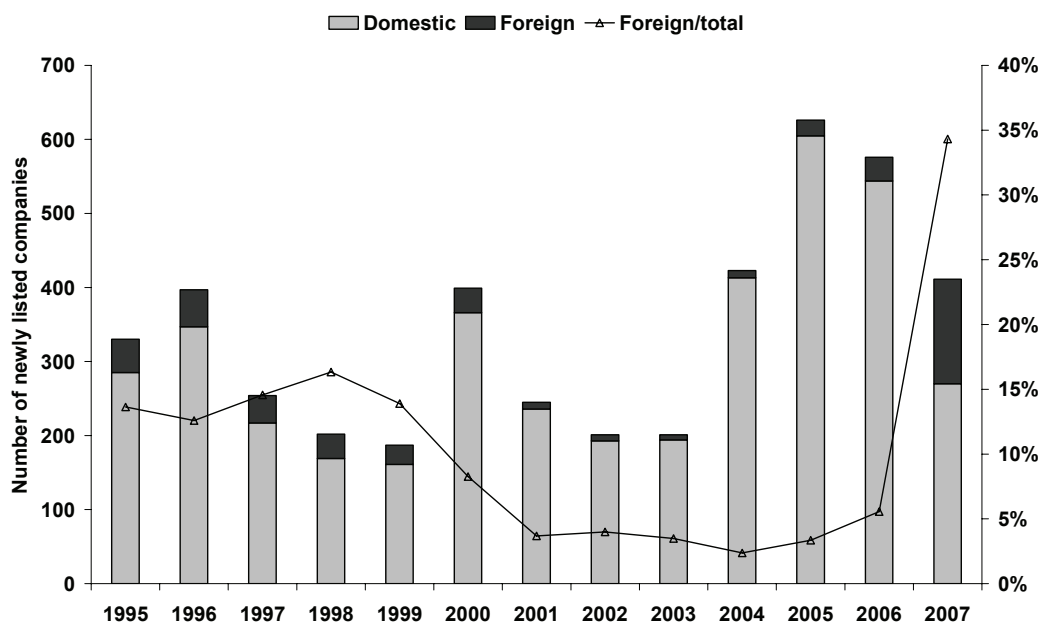


Source: WFE and CRA calculation

***New listings in the UK***

The UK has been successful in attracting new domestic and foreign listings in recent years.

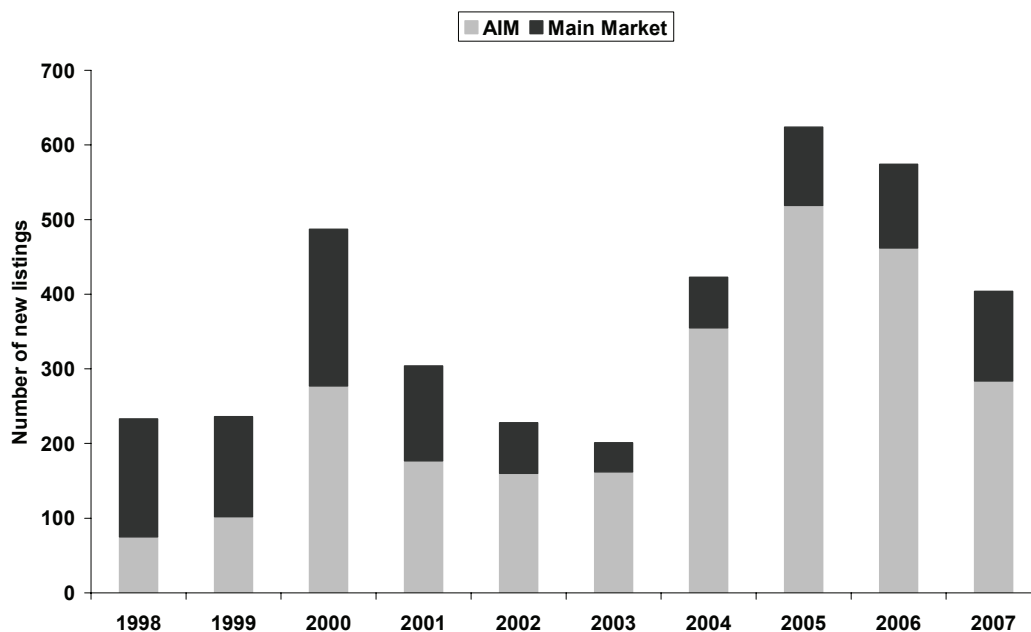
**Figure 14: New listings in the UK**



Source: WFE and CRA calculation

Many market participants believe that London may have benefited at the expense of New York in terms of new listings, particularly because of the advent of Sarbox in the USA and the extra-territorial reach of some US provisions. Figure 15 shows a further breakdown of UK data between the AIM market and the Main Market in London.

**Figure 15: New listings in the UK – AIM and Main Market**



Source: LSE and CRA calculation. Note that there are small differences in data between the information in this figure based on data from the LSE and that in the previous figure based on data from WFE.

Figure 15 shows that London's sharp growth in new listings is derived mostly from the AIM market. The FSA, acting as the competent authority for listing in the Main Market, is the UK Listing Authority (UKLA), and maintains the Official List. The AIM market, however, is under the regulatory purview of the London Stock Exchange, and not the FSA. Listing requirements set by the LSE are less onerous than those for the Main Market.

AIM is typically seen as a market for small companies and IPOs and attracts a significant number of foreign listings. The Main Market also attracts foreign listings (through the International Order Book) but, when these are secondary listings, the main regulatory responsibility rests with the home country regulator, not the FSA. These arrangements contrast with those of New York where the NYSE operates a single set of listing standards with very few concessions to foreign companies.

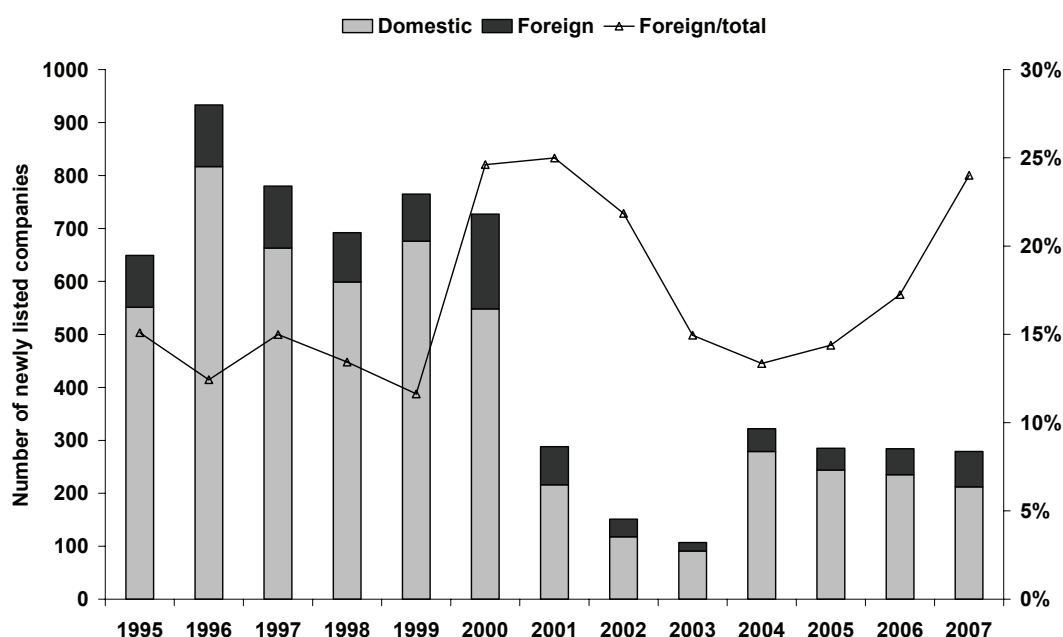
Coffee interprets this information by suggesting that London's success in attracting new listings is a function of its "lower standards". However, in practice, London has a choice of different levels of standards which are linked to the different listing regimes. As such, companies, which may differ in their needs for capital and in their capability to meet certain requirements, can choose which of the regimes is most appropriate for their particular needs. Assuming that this information is transparent and well understood by

investors then the investors will also take into account the differential standards and make investment choices as appropriate.

### **New listing in the US**

Total listings in the US have been declining, especially since 2000. These recovered to a certain degree in 2004, but then started slowly declining again. A noticeable trend is the recent increase in foreign listings, both in percentage and value terms.

**Figure 16: New listing in the US**



Source: WFE and CRA calculation

As noted above, new listings have declined in the US. A variety of American commentators ascribe this change to the advent of Sarbox in the US.

### **4.3.2. Secondary listing location decisions**

Several academic papers (Coffee, Doidge et al, Hail and Leuz) have suggested that companies select a foreign market for secondary listing based on its high regulatory standards. They further argue that New York has the highest standards, which result in a valuation premium which exists uniquely in New York. The following sections of the paper examine these points.

#### **Company criteria for selecting a secondary listing location**

A number of economic studies have examined company cross-listing decisions using both survey based and econometric analyses. In a recent paper for the City of London and the London Stock Exchange, Oxera

examined causality of companies' cross-listing decisions.<sup>51</sup> They found that the key criteria for selecting a foreign secondary listing venue were:

- Listing costs: these can be very high, particularly if IPO discounts are included. There is a perception of high costs in New York;
- Size and depth of the pool of equity capital: this is considered to be very important in companies' decision making as to where to list. This factor favours New York and London as the two largest centres, but especially New York given its very large size;
- Openness and integration: this factor relates to the degree of foreign representation on an exchange, and, hence, receptiveness to listings by foreign companies;
- Cultural, economic, and legal system affinities: by way of example, the AIM market attracts companies from Ireland, Australia, and the US; Deutsche Boerse has strong representation from Austria and the Netherlands; and the NYSE has strong representation from the Americas; and
- Investor knowledge: companies typically want to list on exchanges where there is an investor base that knows the company or its industry.

Oxera state that "In general, the interviewees [in their survey] did not consider differences in ... listing requirements across countries to be a determining factor for the choice of listing venue." It is worth noting that this finding is contrary to the Coffee hypothesis which suggests that companies seek out high standards for "bonding" purposes.

Other research into cross-listing by European companies finds that:

*"European companies are more likely to cross-list in more liquid and larger markets where several companies from their industry are already cross-listed. They are more likely to cross-list in countries with better investor protection, and more efficient courts and bureaucracy, but not with more stringent accounting standards."*<sup>52</sup>

The authors thus find that "destination" exchanges are more liquid, larger, and have a receptive investor audience, as Oxera also suggest. Destination exchanges have higher standards, although this may be a by-product of listing in better regulated locations such as London and New York where greater liquidity can be found.

### **Valuation premium**

A cross-listing premium is a measure of the valuation uplift a company receives by listing on a secondary market with standards that are higher than those of its home jurisdiction. The premium is measured relative to other companies from the home jurisdiction which are not cross-listed. Doidge et al

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51 Oxera (2006) The Cost of Capital: An International Comparison prepared for the City of London Corporation and the London Stock Exchange.

52 Pagano, Roell, and Zechner, What Makes Stock Exchanges Succeed? Evidence from Cross-listing Decisions.

find a cross-listing premium of 16.5% for New York while Hail and Leuz find that companies cross-listing in New York achieve a reduction in their cost of equity of between 70 to 100 basis points. Neither finds that any premium or cost of capital reduction exists for companies cross-listing in London. Coffee asserts that these figures demonstrate higher standards of regulation in New York than London.

However, cross-listing companies represent a relatively small proportion of listings in New York and London. Broad conclusions about the entire market cannot be derived from this minority of companies. The relevant comparison is between the markets in their entirety where the analyses earlier in this chapter demonstrated that London's market outcomes are similar to those of New York.

The valuation differences between cross-listed companies in the UK versus cross-listed companies in New York do appear, however, to be based on the different regulatory regimes imposed on them. As noted above, cross listing companies in New York must meet the NYSE listing requirements while such companies coming to London are generally subject to lighter requirements. This is likely to explain at least part of the difference in results whereby firms cross-listing in New York obtain a valuation premium whereas those cross-listing in London do not.

However, data for the overall cost of equity for all companies listed in London remains comparable with New York despite these differences for the minority of foreign cross-listing companies.

### **Cross-listings in decline**

There is some evidence that cross-listing as a practice is in decline. In Europe it is apparent that national capital markets are beginning to give way to a single European capital market governed by MiFID, the Prospectus Directive, the Transparency Directive, IFRS, and a large number of other initiatives which harmonise capital market regulation across the EU. A European company no longer needs an LSE listing, for instance, to raise capital from UK investors. The advent of the Prospectus Directive means that companies throughout the EU may now raise capital from investors in other EU countries using a single prospectus. As for secondary trading, liquidity of Europe's largest companies is flowing towards the large MTFs based in London (such as ChiX and Turquoise) that have been enabled by MiFID. Given this changing context, the benefits of cross listing in the EU are much reduced.

This is also supported by a recent report by McKinsey which considers the rationale for cross-listing in an integrating, globalising world. They write:

*“Conventional wisdom has long held that companies cross-listing their shares on exchanges in London, Tokyo, and the United States buy access to more investors, greater liquidity, a higher share price, and a lower cost of capital. In the 1980's and 1990's, hundreds of companies from around the world duly cross-listed their shares.*

*Yet this strategy no longer appears to make sense – perhaps because capital markets have become more liquid and integrated and investors more global, or perhaps because the benefits of cross-listing*

*were overstated from the start. From May 2007 to May 2008, 35 large European companies, including household names such as Ahold, Air France, Bayer, British Airways, Danone, and Fiat, terminated their cross-listings on stock exchanges in New York as the requirements for deregistering from US markets became less stringent. These moves represent the acceleration of an existing trend: over the past five years, the number of cross-listings by companies based in the developed world has been steadily declining in key capital markets both in New York and London.”<sup>53</sup>*

They further note that “Companies from developed economies with well-functioning, globalised capital markets have little to gain from cross-listings and should reconsider them.”

#### **4.3.3. New listings: summary**

The UK has had many more new listings than New York in recent years, and Australian new listings were of a similar level to those in New York in 2007. Germany and Euronext lag behind. Traditionally, New York has had a high level of new foreign listings, but has been recently surpassed by London in this regard as well. New York and London are still the largest national capital markets with the deepest liquidity, so it is natural that they should attract the highest number of foreign listings since research indicates that access to equity capital is one of the key factors in listing decisions.

Statistical analysis appears to demonstrate that the full application of the regime in New York leads to a lower cost of equity for cross-listing firms there, whereas cross-listing premiums are not found when listing into London which is likely to be because the full London regime is not applied in all cases. However, London offers a range of different standards and this choice may itself have increased the volume of listings attracted, although it may also have led to criticisms regarding the quality of the regime which are based on only a small part of the regulatory standards. Cost of equity is, in fact, similar for the two markets considered in their entirety.

#### **4.4. Market outcomes: market cleanliness**

The final market outcome which we consider is that of market cleanliness. As we explain below, measuring the extent of insider trading, or conversely market cleanliness is not straightforward and there are a number of methodological factors that need to be taken into account. We set out below some of the theoretical implications of insider trading, briefly review results from previous studies on market cleanliness, and explain the various factors that need to be taken into account when conducting a comparison of the extent of market cleanliness in different countries.

#### 4.4.1. Theoretical role of insider trading

Perhaps surprisingly, economic theory regarding the impact of insider trading does not find that it always has a negative impact on markets. Some academics argue that it can actually improve market efficiency. For example, Manne as well as Carlton and Fischel argue that insider trading improves market efficiency<sup>54</sup> because:

- Insider trading improves the accuracy of prices by causing the market price to move towards the price that would arise if the insider information were revealed; and
- Insider trading motivates innovation and the production of valuable information since managers can profit from their innovations by buying shares before the information is widely known. As such the incentives of managers to innovate are more aligned with the incentives of shareholders.<sup>55</sup>

In reality, securities regulators across the globe have clearly come down on the side of insider trading being detrimental to market efficiency. Rules have been put in place in virtually all jurisdictions seeking to prevent insider trading from arising. Economic justification for this stance is based on a number of arguments:

- Market makers will increase the spread on the prices they offer in order to protect themselves from risks that the market will move against them due to insider trading. This increases transactions costs, reduces market efficiency, and increases the cost of equity;
- Uninformed investors may be unwilling to trade if insider trading is perceived to be prevalent since the gains made by insider traders are effectively costs to uninformed investors. This reduces breadth of participation in the market and reduces liquidity;
- Incentives to gather and analyse information may be reduced since insiders have a monopoly position regarding the profits from informed trading and hence the returns to information gathering are reduced; and
- Controlling shareholders may find it easier to profit from insider trading than from conducting monitoring and imposing restraints on managers leading other shareholders to require higher returns and therefore again increasing the cost of equity.<sup>56</sup>

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54 Manne H (1966) Insider Trading and the Stock Market as sourced in Bainbridge S (2000) Insider Trading and Carlton D and D Fischel (1983) The regulation of insider trading, *Stanford Law Review* 35, 857-895.

55 In practice, however, insider trading prosecutions have typically been linked to non-public information about the firm which the individual knows due to their position of knowledge rather than because of positions linked to developing innovation. See Beny L (2006) Insider Trading Laws and Stock Markets Around the World: An Empirical Contribution to the Theoretical Law and Economics Debate, *Journal of Corporation Law*.

56 Bhattacharya U and H Daouk (2002) The World Price of Insider Trading, *Journal of Finance*, 57, 75-108 and Beny L (2006) Insider Trading Laws and Stock Markets Around the World: An Empirical Contribution to the Theoretical Law and Economics Debate, *Journal of Corporation Law*.

In addition, some academics argue that allowing insider trading leads to a distortion of managers' incentives regarding disclosing information and, in contrast to Manne, argue this could lead to information not being disclosed and therefore reduce the accuracy of prices. For example, insider trading may lead managers to delay the release of price sensitive information in order to trade on the information before it is publicly known. It is notable that the FSA has recently expressed concerns about the delay of bad news.<sup>57</sup>

#### 4.4.2. Previous studies of market cleanliness

There have been a number of previous studies which have been conducted including the following:

- AFM (the Dutch regulator) examined the impact of the Market Abuse Directive (MAD) and found there was a statistically significant reduction in the abnormal returns for small companies and for announcements regarding alliances or mergers and acquisitions following implementation of MAD. The impact on small companies is consistent with previous research which suggests that since smaller firms are not followed as closely by analysts as larger firms, there may be more opportunities for gains from insider trading. The data that AFM provide suggests that price movements for M&A activity may arise around 5 days before the announcement.<sup>58</sup>
- Bhattacharya et al examine the abnormal returns for the Mexican Stock Exchange. They find that the three day return starting from the day before an announcement, the announcement day, and the following day show no unusual price movements, even in the immediate aftermath of the merger announcement. This indicates that the price had already fully incorporated the information in the announcement and therefore strongly suggests insider trading. They note that there was no indictment for insider trading during the period they examined between 1994 and 1997.<sup>59</sup>
- The UK FSA (2007) examined informed price movements for takeover announcements. They found that 14-33% of takeovers have informed price movements depending on the year (averaging about 25%). The FSA also examined a sample of announcements regarding FTSE 350 companies and found evidence suggesting that there was a reduction in informed price movements following the implementation of the Financial Services and Markets Act (FSMA) in 2001, but that there was a

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<sup>57</sup> In addition, the FSA has also fined companies for delay in releasing inside information. See for example: FSA, Wolfson fined £140,000 for delaying disclosure of inside information, FSA press release 20<sup>th</sup> January 2009.

<sup>58</sup> Autoriteit Financiële Markten (2007) Report: The effects of a change in market abuse regulation on stock prices and volumes: Evidence from the Amsterdam stock market.

<sup>59</sup> Bhattacharya, U, H Daouk, B Jorgenson, CH Kehr (2000) When An Event Is Not An Event: The Curious Case Of An Emerging Market, *Journal of Financial Economics*, 55(1), 69-101.

more significant reduction following the first enforcement of the FSMA.<sup>60</sup>

- Measured Markets, a US company which alerts investors when a stock's trading pattern changes significantly from its normal behaviour, found that in the US there was suspicious trading in the stocks of 41% (37 out of 90) of target companies in 2006.<sup>61</sup> They also found that 33 out of 53 Canadian takeovers in 2006 had suspicious trading patterns before announcements.<sup>62</sup> It should be noted that information is not available on the detailed methodology used by Measured Markets.
- Meulbroek finds that 50% of the pre-announcement price run-up observed before takeovers occurs on insider-trading days.<sup>63</sup> This result is ascribed to the fact that the US market can detect the possibility of insider trading i.e. that the trades of insiders are used as signals for a likely announcement in the future.
- Wong finds evidence of abnormal returns for Chinese affiliated firms that are listed in Hong Kong and that this is especially the case for good news announcements. By contrast there is little unusual behaviour for Hong Kong or US stocks. The study also finds that 50% of cumulative abnormal returns occur 5 days before the actual announcement for good earnings events and 16% for corporate news announcements for China-affiliated stocks.<sup>64</sup>

It is important to note that conducting a market cleanliness study does not imply that where the statistical testing suggests that there are informed price movements this means that there has certainly been insider trading. For example, Wong notes that abnormal price behaviour before an announcement may represent anticipation by market participants rather than insiders abusing their private information.<sup>65</sup> Alternatively, it could simply reflect the purchase of a minority of shares by a bidder in the context of merger and acquisition (M&A) activity in advance of the announcement. This purchase could send signals to the rest of the market causing others to

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60 FSA (2007) Updated Measurement of Market Cleanliness, Occasional Paper 25. The FSA also examines a sample of announcements regarding FTSE 350 companies.

61 New York Times (2006), Whispers of mergers set off bouts of suspicious trading, 27 August 2006. This was based on mergers with a value of over \$1 billion. The FT reports that in 2007, the figure increased to 60%. Financial Times (2007) Boom time for suspicious trades.

62 Financial Post (2008) The cost of leaked M&As, 11 June 2008. This was based on takeovers of more than \$200 million.

63 Meulbroek L (1992) An Empirical Analysis of Illegal Insider Trading, *Journal of Finance*, 47, pp. 1661–1699.

64 Wong E (2002) Investigation of Market Efficiency: An Event Study of Insider Trading in the Stock Exchange of Hong Kong, Stanford University Working Paper.

65 Wong E (2002) Investigation of Market Efficiency: An Event Study of Insider Trading in the Stock Exchange of Hong Kong, Stanford University Working Paper.

trade on the basis of the information revealed through the original purchase and therefore lead to further price rises.<sup>66</sup>

#### 4.4.3. Different methods for assessing market cleanliness

There are a number of different methodologies which can be applied in order to establish whether insider trading is likely to be arising and if so, the extent of it that occurs. These include:

- **Informed price movements:** This approach seeks to identify whether there are movements in price (typically price increases) before the announcement of a merger that are out of line with the usual price pattern for that particular security. It may also be appropriate to consider price movements over a long period of time to observe whether or not there is evidence of a long-run up period in which prices gradually drift upwards before the announcement;
- **Announcement day price movements:** Since the announcement of a possible merger is expected to be a price sensitive event, the price should move on the day of the announcement. If this is not the case this could suggest that the market has already fully taken into account information about the merger, that is, that the announcement did not contain any real information because insider trading has already revealed this to the market. This approach would involve examining the proportion of price movements which arise on the announcement day compared with price movements before the announcement day. We call this the pre-event movement (PEM) ratio;<sup>67</sup> and
- **Expected trading volumes:** If insiders are trading before a merger announcement this could be observed through the extent of trading which arises.

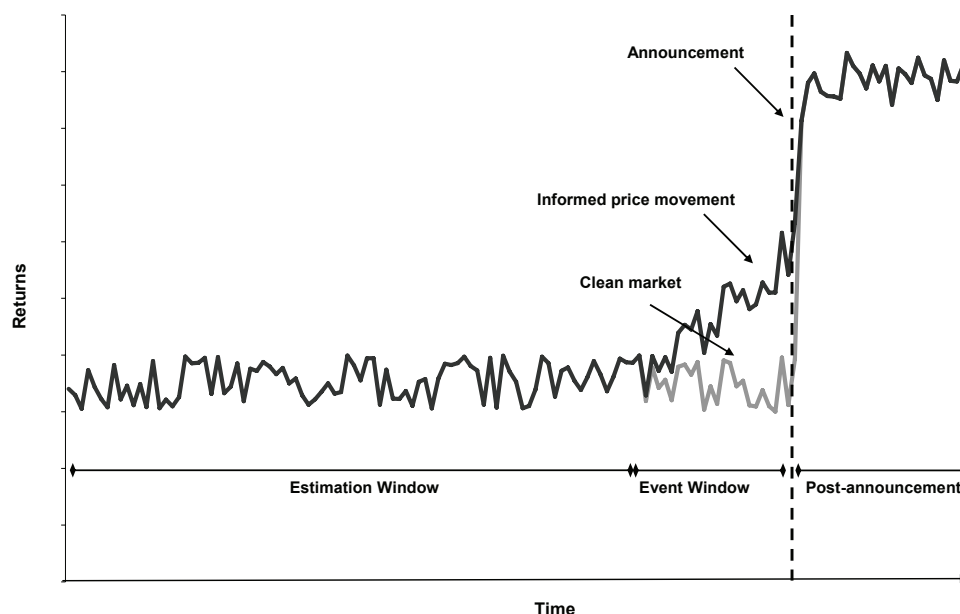
We have illustrated the IPM methodology in Figure 17.

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<sup>66</sup> This is suggested as a reason for a stock price's run-up in advance of an announcement by Jarrell G and A Poulsen (1989) Stock trading before the announcement of tender offers: Insider trading or market anticipation? *Journal of Law, Economics and Organization* 5, 225-248.

<sup>67</sup> The PEM ratio is based on the ratio of the pre-announcement Cumulative Abnormal Return (CAR) to the CAR for the entire period and provides a measure to quantify the extent to which the market has already taken into account the price sensitive information inherent in the transaction. This helps to test whether countries suffer from the problem seen in Mexico where announcements do not lead to price effects because all the information regarding the announcement has already been taken into account in the price.

**Figure 17: Illustrative returns**



Source: CRA International. The estimation window is the period which is used to calculate "normal" returns and as is illustrated in Figure 17 these returns would be expected to show some variation over time. The event window is the period in which testing occurs to establish whether there is evidence of IPMs and to calculate the size of the PEM ratio.

Each of these approaches has potential advantages and disadvantages which mainly link to the timing of possible insider trading. For example, if insider trading is rife and commences a long time before the announcement, then this will not be captured through measuring informed price movements a few days before the announcement but could be picked up through the lack of an announcement day price movement. However, if there is no announcement day price movement this could be because the acquisition is not considered to be significant or because the acquisition price is exactly the same as the non-acquired price.

It may be appropriate for regulators to examine all of these approaches in order to gain a holistic view of the extent of possible insider trading. Furthermore, the appropriateness or otherwise of different tests may vary according to country which needs to be taken into account when comparing results of the analysis.

#### **4.4.4. Differences between countries**

Differences in results between countries may arise because they have different approaches to takeover announcements. This is likely to imply that the modelling approach taken would need to be focused on characteristics of different markets and expectations regarding the timing of possible insider trading compared with the timing of the announcement.

For example, the UK is unusual in having the Takeover Panel which requires announcements to be made about takeovers. The Takeover Panel can

require an announcement to be made regarding a possible offer in contrast to most countries where announcements are made only regarding a firm offer.

There are two implications of this. First, takeover announcements may arise earlier in the process in the UK compared with other countries. This means that prices may begin to drift up in other countries for a longer period of time before an announcement is made in countries other than the UK and may therefore not be captured by any analysis on informed price movements shortly before an announcement whereas they might be more likely to be identified in the UK.

Second, the role of the Takeover Panel may mean that announcements occur directly because of unusual price movements. Where a company has been approached in respect of a potential merger, the Takeover Panel would need to be consulted when:

- There is a price movement of 10% or more above the lowest share price since the time of the approach; or
- When there is an abrupt price rise of a smaller percentage such as a 5% increase in the course of a single day.

If such price changes arise, the Takeover Panel may require that an announcement be made that the company has been approached regarding a possible offer. Forcing such an announcement has the effect of preventing insider trading from that point since the information is no longer limited to insiders but has been revealed to the market as a whole. In some cases the Panel may decide that an announcement is not required if there are other plausible reasons that may have caused the price movement, for example, if the whole market increases by 5%.

This is an important issue to consider in respect of any market cleanliness study conducted on the UK market since the study tests whether announcements are preceded by price movements, but the Takeover Panel requirements imply that some announcements occur precisely because of price movements. Hence in those cases, by definition, there will be price movements which precede the announcement.<sup>68</sup>

In addition, this could mean that if the Takeover Panel made their requirements stricter by reducing the price movements at which an announcement would be triggered, this could have the effect of leading to a higher number of informed price movements. It may be possible for future studies to separately identify announcements that are forced by the Takeover Panel from those that are made in the normal course of M&A activities.

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It is possible that this causes a problem of endogeneity in the statistical testing since price movements cause announcements whereas we are testing whether announcements are preceded by price movements. However, given that such announcements arise when there is an unexplained price movement during merger discussions, the announcements themselves may in fact be indicative of insider trading and therefore it would be appropriate to categorise them as informed price movements. It may, nonetheless, impact the timing of IPMs.

In other countries, the announcement of a possible offer is less common. Furthermore, some other countries are believed to respond to unusual price movements by halting trading. This means that pricing information may not be available to assess IPMs in a similar manner to in other countries and would therefore need to be taken into account.<sup>69</sup>

#### **4.4.5. Other methodological considerations and implications**

There are a number of additional areas which would need to be considered carefully when examining market cleanliness, especially in a comparative setting. Some of these include:

- Separately identifying announcements in the UK which are forced by the Takeover Panel and those which are made in the normal course of a transaction;
- Examining samples depending on whether both the target and the acquirer are listed in the same country and analysing samples separately according to the characteristics of the acquirer. This would take into account the work by Wong suggesting that insider trading on the Hong Kong Stock Exchange was greatest for China-affiliated stocks suggesting that the source of the insider information was elsewhere in China rather than in Hong Kong;
- Consideration of whether to include all exchanges regulated in a particular country;
- Including transactions where securities cease trading due to concerns of insider trading – this would require changing the definition used for the event window in order to estimate whether there are informed price movements as well as changing definitions for the announcement window when calculating the PEM ratio; and
- Assessment of structural differences regarding types of M&A activity. For example, Australia, France and Germany have relatively high proportions of minority stake purchases as opposed to “pure” takeovers.

Finally, care also needs to be taken when assessing the implications of results found and how they link to evidence of other market outcomes such as the cost of equity. The following issues are of particular relevance:

- If market cleanliness assessments are linked to M&A announcements then it should be noted that trading related to companies involved in M&A transactions represents a very small proportion of all trading. As such concerns regarding trading in these securities may be somewhat limited and not impact the entire market or trading conditions generally.
- Due to efficient markets, any insider trading that does arise can quickly be used as information by other market participants such that prices rapidly change and “outsiders” retain confidence in the market price. This links to the academic theory suggesting that insider trading can be

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Alternatively it is possible that the final price before trading ceases would continue to be recorded.

useful because it reveals information to the market and therefore prices are closer to the full information state; and

- Institutional differences between countries may lead to insider trading having different patterns in different countries. In particular, in the UK, the forced announcements of the Takeover Panel and the role of the Takeover Panel more generally may impact results in the UK especially for the IPM methodology. Institutional frameworks in other countries would similarly need to be taken into account.

#### **4.5. Market outcomes: summary**

This chapter has analysed three market indicators. For each, the results are varied and complex. There appears to be a clustering effect whereby each country scores well on at least one or two market outcomes. We will summarise our overall findings on market outcomes in more detail in Chapter 5.

## 5. THE WAY FORWARD

In this chapter we summarise our findings on market outcomes. We then provide information gathered from recent publications from international organisations regarding the latest stock-take of regulation across the globe as well as setting out some of the regulatory failings which led to the current credit crisis. Finally, we conclude on implications for the way forward for regulation.

### 5.1. Summary of market outcomes

In the preceding chapters the evidence on market outcomes has demonstrated that there is a clustering of market outcome results for Australia, France, Germany, the UK and the US. Table 5-1 summarises the market outcomes for the five countries.

**Table 5-1: Summary table**

	Australia	France	Germany	UK	US
Cost of equity	10.72%	10.37%	10.05%	10.64%	10.24%
Equity risk premium	8.5%	9.3%	9.1%	6.1%	7.4%
Market size/GDP (2006)	1.45	1.06	0.56	1.59	1.16
Transaction costs (basis points)	N/A	27.0	27.1	25.5	23.5
New listings (2007)	300	50	50	400	300

Source: CRA calculations and various other sources.

It is clear from this table that no country clearly dominates the others in every result, and no country is obviously worse than the others in every result. Instead, countries tend to rank highly on one indicator and less highly on some others, but none are consistently at the bottom of the table.

The relatively similar market outcomes between these countries raise the question of the appropriate way to proceed in the development of regulation. The issue of how regulation should develop is especially important given the credit crisis where regulation and regulators have faced much criticism.

As we set out earlier in the paper, there are a range of different approaches that can be taken to regulation, and while the similarity of outcomes for the five advanced markets that we have examined suggests that some elements of regulation may trade off for other elements, they do not imply that regulation is irrelevant.

Academic evidence is clear that there is an impact from regulatory structures and activities on market outcomes such as the cost of capital. The effects are demonstrated most clearly from comparisons with developing countries where weaker structures and less regulatory compliance gaining activities are found.

However, there are also lessons for more advanced countries, especially in the light of the credit crisis where a number of international bodies have identified weaknesses in the regulatory framework which may have exacerbated the current crisis. We provide details on this research below and then set out implications regarding the three main areas of regulation: legal and institutional structures; enforcement; and supervisory activities.

## **5.2. Recent assessments of regulation and failures**

In this section we provide details on research undertaken by the IMF, IOSCO and the Basel Committee regarding areas of weakness in regulation which have contributed to the current crisis.

### **5.2.1. The IOSCO assessment programme**

As well as providing a framework for good regulation as highlighted in Chapter 2, IOSCO also operates an inspection system. Inspections are conducted by the World Bank and the International Monetary Fund (IMF) under the Financial Sector Assessment Program, and countries are scored on the basis of the completeness of their implementation of the IOSCO framework.

In late 2007, the IMF published a paper which analysed the aggregate results of IOSCO assessments of securities regulation in 74 countries in recent years.<sup>70</sup> This study provides insight into the strengths and weaknesses of securities regulation regimes in a large number of countries across the globe. The three key findings of the report were:

- Strength of regulatory institutions increases with country income. Low income jurisdictions showed levels of implementation of the IOSCO framework described earlier at below 50%, whereas high income countries were above 70%. Even in high income OECD jurisdictions, implementation was still below 80% in some categories. There is a considerable resonance between these findings and the evidence from academic papers described in chapter 3 where weak regulatory institutions were found in developing economies.
- Gaining compliance with rules and regulations was the overriding weakness in regulatory systems across the globe, mainly because of a chronic lack of skilled personnel to conduct inspections and use reporting tools, and a lack of resources, skills and authority to undertake investigations and bring enforcement actions. For example, in respect of the oversight of market intermediaries the IMF reports, "The main problem in enforcement [compliance gaining strategy in our terms] relates to the actual capacity of the regulator to implement adequate supervisory programs, or to appropriately use its disciplinary powers." Implicit in this statement is recognition that both supervision and enforcement disciplines are needed in regulatory compliance gaining.

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Carvajal A and J Elliott (2007) Strengths and Weaknesses in Securities Market Regulation: a Global Analysis, Working Paper 07/259, International Monetary Fund.

- Many countries pay insufficient attention to reviewing firms' valuation practices – especially in markets where funds have significant holdings of relatively illiquid securities and should not rely entirely on the price assigned by an organised market or exchange. In addition, many regulators lack the staff skills to fully understand the risks associated with the activities of market participants in these areas, and so cannot effectively set and impose standards for risk management and internal control, nor effectively evaluate firms' practices.

Thus the IMF's report, based on IOSCO assessments, finds that there is progress to be made in a number of areas of regulation and we will draw on some of these points further below.

### 5.2.2. IOSCO report on the financial crisis

IOSCO has also provided a report examining the root causes of the financial crisis as it concerns the securities industry.<sup>71</sup> Although the crisis has widened in scope beyond sub-prime problems, these housing-related problems are believed to have been the catalyst for the crisis. Focus in the IOSCO report is on four areas:

- **Issuer transparency and investor due diligence** – IOSCO suggests that disclosure with regard to the complex instruments underlying the crisis was insufficient, as was the due diligence by professional investors purchasing these securities. They also state that the private nature of many transactions between issuers and investors helped allow this inadequate disclosure.
- **Institutional risk management and prudential supervision** - Risks were not understood and quantified properly, and the implications of stressed markets for the value of these complex instruments were not recognised in the modelling that was done either by institutions or from the supervisory perspective. Internal controls did not recognise the impacts on liquidity of the risks that were undertaken. In addition, firms relied much too heavily on credit rating agency assessments of asset backed securities as an indicator of risk and credit quality, with relatively little risk assessment of their own.
- **Accounting and valuation issues** - Firms had difficulty valuing complex securities once OTC markets ceased to function, and struggled with the accounting implications (fair value/mark to market) of the situation they encountered once the crisis hit, which further increased uncertainty and market turmoil.
- **Credit rating agencies** – IOSCO also comments at length on the quality and integrity of the rating processes of the credit rating agencies, and their potential conflicts of interest in rating these securities.

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"Report on the Sub Prime Crisis", OICU-IOSCO, Technical Committee of the International Organization of Securities Commissions, May 2008.

### **5.2.3. The Basel Committee**

In January 2009 the Committee issued a consultative document relating to trading book exposures, complex securitisations and exposures to off balance sheet vehicles. The main areas of focus are:

- Promoting improvements to valuations of financial instruments;
- Proposing enhanced disclosure requirements for securitisations; and
- Proposing standards to promote more rigorous supervision of risk management.

It is clear that these proposals are aimed at improving the weaknesses identified by the IMF and IOSCO in their earlier reports.

### **5.3. Implications for future regulation**

The implications for future regulation to ensure that it is effective are linked both to the academic evidence of aspects of regulation which impact on market outcomes and also to evidence of recent weaknesses of regulation linked to the current crisis. In each of the three areas which we have identified (legal and institutional structures; enforcement; and supervisory activities) there is progress to be made. As we note further below, a simplistic approach focused on one of these areas alone does not appear to be appropriate but rather improvements in all areas are required. As noted in Chapters 2 and 3, regulators have a range of tools at their disposal which they can use to bring about regulatory effectiveness and these include all three of the areas described below.

#### **5.3.1. Legal and institutional arrangements**

The IOSCO framework explained in Chapter 2 is an important starting point in the regulatory arena since it sets out the basic institutional infrastructure for securities markets regulation.

It is clear from the assessments undertaken that some countries, especially developing countries performed relatively poorly on these assessments and therefore it would be appropriate for such countries to focus on ensuring that they have the framework in place.

However, it is also clear from the recent assessments of the current crisis that some elements of modern securities markets fell outside of some of the regulatory remit and there may be a need to bring more of this under regulatory authorities. For example, while setting the rules for accounting standards has become more harmonised over time, IOSCO highlighted the uncertainty of accounting implications. In addition, conflict of interest in credit rating agencies was not well understood (or not taken account of in regulation) and thus bodies which others relied on heavily may have fallen outside the regulatory framework.

Finally, given that the aim of regulation is to impact on market outcomes rather than to regulate for its own sake, it may be useful to extend the IOSCO framework to include measurement of these outcomes. This would be particularly relevant for well developed countries which already have much of the infrastructure and institutional structures in place to meet the broad

IOSCO framework. Given that the nature of some of the market outcomes is that they are likely to change relatively slowly (not annually) and some may be subject to measurement error, this suggests that including them in an IOSCO review of around five year frequency would be an appropriate in attempts to start to compare the effectiveness of regulation in different countries.

### **5.3.2. Enforcement**

As was seen in section 5.1, the market outcomes among the five countries investigated are broadly similar with no country clearly dominating and no country clearly lagging behind.

The theory associated with Coffee that enforcement is the key element of regulation was not found to be accurate. The data provided in section 3.2 demonstrated that enforcement intensity varies greatly amongst the five nations with the US found to be a particular outlier when considering sanctions and criminal penalties. However, the data on market outcomes does not consistently vary as a function of enforcement intensity; that is, the US was not found to dominate all other countries on all market outcomes.

Instead, as noted in other academic literature, and indeed as noted by Coffee himself, different regulatory systems can yield good results through using the combination of regulatory tools available (as we discuss further below).<sup>72</sup>

However while enforcement as the dominant strategy is not necessarily the best approach, enforcement is essential. There is evidence from academic studies that a failure to enforce leads to no impact on market outcomes from rules which should bring benefits.

This may be of particular relevance to the UK in relation to market cleanliness where there has been perceived to be a weakness in enforcement in the past.

This has been clearly recognised by the FSA who have signalled the intention to use criminal prosecution in order to act as a stronger deterrent. It is likely that this focus will be required for some time in order that the punishment of some who engage in market abuse and insider trading will act as a credible deterrent effect on others. However, this is not to say that endless cases will be required since academic research suggests that there diminishing returns on market outcomes from continuing to have such cases.

Finally, it is worth noticing that there is little evidence that the current crisis is linked to a lack of enforcement since the IMF, IOSCO and Basel Committee

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72 Coffee notes that the UK system is more reliant on good corporate governance, the prevalence of sophisticated and relatively active professional investors to discipline companies, and a company law regime which provides strong rights to shareholders (as opposed to securities law, a strict listing regime and aggressive legal activities in the US). He notes that UK achieves an overall effect by quite different means that is broadly equivalent to that of the US in terms of producing good market outcomes. This point is also made by Jackson who later critiqued the simple enforcement intensity approach from Coffee.

papers all place the focus on supervision or the need to extend regulation in certain areas.

### 5.3.3. Supervision

As highlighted in Chapter 3, there are a range of tools available to regulators and ongoing supervisory or accommodative strategies in gaining compliance are seen to be of considerable value. The need to gain compliance is also highlighted by the OECD which notes that:

*“Dramatic regulatory failures tend to produce calls for more regulation with little assessment of the underlying reasons for failure. Though there is little hard evidence, a growing body of anecdotes and studies from OECD countries suggests that inadequate compliance underlies many such failures. This is a common but little understood form of regulatory failure.”<sup>73</sup>*

The current period of crisis has, indeed, led to calls for more regulation. While this need certainly exists in light of some of the problems that have arisen, understanding the cause of the failure is important before seeking to redress it. As noted above, and consistent with evidence from IOSCO, the IMF and many regulators, inadequate compliance is probably more associated with the crisis than abusive behaviour.

One of the key areas of weakness that has been identified is a lack of sufficient skill within regulators relative to the tasks and firms that they were required to regulate. Hence ensuring adequacy of supervisory resources and the embedding of skills in regulatory staffs in the key prudential areas where failures have occurred in the recent past will need to be an important focus for the future.

This is particularly the case regarding weaknesses in risk management in firms which were also not identified by regulators. Rapid financial innovation in these complex securities appears to have moved ahead of the regulatory apparatus that should have overseen them, as well as the skills of financial institutions to manage them.

Weaknesses in risk management, internal controls, and valuation skills have all been identified and will need to be addressed. New disclosure standards will need to be developed for the kinds of securities that lie at the heart of this crisis. Firms will need to be able to demonstrate their ability to manage these complex risks without over-reliance on external ratings or unreliable price discovery mechanisms.

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73 Reducing the risk of policy failure: Challenges for regulatory compliance, OECD, 2000.

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