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The Irish Accounting Association was founded in 1987 to bring together academics from all parts of Ireland in order to advance teaching and research in Accounting and related disciplines. In 1991, the name and objectives were changed to include Finance.

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The Association now has members in virtually all third level colleges that employ accounting and finance academics in both Northern Ireland and the Republic of Ireland. The annual membership fee is €35/£25.

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The *Irish Accounting Review* is published by the Irish Accounting and Finance Association as part of the process of fulfilling its objective to advance accounting and related disciplines in the education and research fields in the Republic of Ireland and Northern Ireland. The *Review*'s policy is to publish suitable papers in any of the areas of accounting, finance and their related disciplines. Papers in all categories of scholarly activity will be considered, including (but not limited to) reports on empirical research, analytical papers, review articles, papers dealing with pedagogical issues, and critical essays.

All submissions that pass an initial editorial scrutiny will be subject to double-blind refereeing. Referees will be asked to assess papers on the basis of their relevance, originality, readability and quality (including, for empirical work, research design and execution). In determining relevance, the editors will be influenced by the Association's objectives; thus, papers reporting on empirical work will be viewed more favourably if they deal with data relevant to those working in Ireland. Similarly, papers that have previously formed the basis of a presentation at the Association's annual conference will be particularly welcomed.

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ISOMORPHISM: AN EXPLANATION FOR THE POPULARITY OF PUBLIC–PRIVATE PARTNERSHIPS?

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ABSTRACT

While Public–Private Partnerships (PPPs) are a popular public policy tool, there is evidence to suggest that they often fail to deliver value for money, a key objective. Focusing on the use of PPPs in education in Ireland, this paper draws on perspectives from institutional and isomorphic theories to illuminate the use of PPPs as a modernisation tool of government. It finds that, while the adoption of PPPs has been characterised by difficulties, policy makers persist with their use. This is attributed to coercive isomorphic pressures in the case of Northern Ireland and mimetic isomorphic pressures in the Republic of Ireland.

INTRODUCTION

Over the last 25 years governments around the world have implemented a host of market-based reforms in an attempt to improve the efficiency and effectiveness of public service delivery. These reforms have often been promoted under the banner of 'modernisation' (Giddens, 1998) and have been adopted in response to rising public expectations (Arnaboldi and Lapsley, 2003). However, while portraying a commitment to public services, they are also a declaration that core public services are not performing as well as they should (Benington, 2000). Collectively, these reforms have been referred to as New Public Management (NPM) and they seek to improve planning, performance and accountability in the public sector. NPM reforms, which include the particular implementation tool addressed in this paper – Public–Private Partnerships (PPPs) – have had major impacts on many western governments (Guthrie, Olson and Humphrey, 1999; Hood, 1991; Pollitt and Bouckaert, 2000). This paper explores why governments continue to employ PPPs as a key part of their investment strategy for modernising public sector infrastructure and service delivery in the face of doubts about their rationale and emerging evidence that question whether PPPs achieve their ascribed goals. The paper begins by examining the validity of the arguments commonly offered in favour of PPPs. It reviews the track record of PPPs and asks why the PPP procurement model continues to be attractive to policy makers. Drawing on institutional and isomorphic theories, the latter of which refers to a constraining process that forces one part of a population to resemble other parts that face the same set of environmental conditions, the paper attempts to address this question with reference to the use of PPPs in education in Ireland.[1] The paper concludes by assessing the impact of PPPs on the Irish education sector and considering what lessons can be learnt.

THE POLICY CONTEXT

PPPs: A Global Phenomenon

Since the mid-1990s PPPs have become evermore popular as governments increasingly engage the private sector in the provision of public services. The term PPP can be applied to any collaboration between public bodies, such as local authorities or central government, and private companies, and includes the transfer of council homes to housing associations using private loans and the contracting out of services such as refuse collection, portering and hospital cleaning (Her Majesty's Treasury (HMT), 2000; Osbourne, 2000). The Private Finance Initiative (PFI), arguably the most well-known form of PPP, refers to a strictly defined legal contract for involving private companies in the construction and provision of major public sector infrastructure assets and associated services.

The PFI was launched by the United Kingdom (UK) Conservative government in 1992 and subsequently embraced by New Labour.[2] Under PPP, a private sector company is contracted to design, build, finance and operate (DBFO) a capital project such as a school, prison or hospital.[3] For larger projects, a consortium of private sector companies (usually comprising a building firm, a finance company and a service provider) or Special Purpose Vehicle (SPV) is often formed. While the UK is generally regarded as the region that has gone furthest in terms of adopting PPPs, overall activity has expanded in recent years. PricewaterhouseCoopers (2005) estimated that in the years 2004 and 2005 approximately 206 PPP deals worth approximately €42 billion were closed worldwide. Moreover, between 1994 and 2005 it is estimated that PPP deals with a value of approximately €100 billion closed across Europe, with two-thirds of these being in the UK.

Research on UK PPPs has tended to focus on health (for example, British Medical Association, 1997; Gaffney and Pollock, 1999; Gaffney, Pollock, Price and

Shaoul, 1999; Mayston, 1999; Froud and Shaoul, 2001; Broadbent, Gill and Laughlin, 2003) and education (for example, Ball, Heafey and King, 2000, 2003a, 2003b; McCabe, McKendrick and Keenan, 2001; McFadyean and Rowland, 2002), although roads (Edwards, Shaoul, Stafford and Arblaster, 2004; Shaoul, Stafford and Stapleton, 2006), defence (Kirk and Wall, 2002) and prisons, particularly the controversial refinancing of Fazakerley prison (National Audit Office (NAO), 1997, 2002), have also been examined.

PPPs: Inadequately Rationalised and Empirically Unproven

It could be argued that PPPs are part of the broader agenda of privatisation undertaken by successive UK governments. This has resulted in the privatisation of key institutions such as British Gas and the water utility industry, while, at the same time, in the case of PPPs it has provided increasing levels of collaboration with the private sector. PPPs have been promoted as a means of encouraging private sector involvement in public sector projects and acquiring private sector management expertise for the public sector (McKendrick and McCabe, 1997). The model is seen as a means of bringing the benefits of privatisation, such as improved efficiency and better value for money (VFM) for the taxpayer, to that part of the public sector, which, either for political or technical reasons, could not be straightforwardly privatised (Heald and Geaughan, 1997).

The assertion that PPPs can serve as a vehicle for much needed upgrading of infrastructure, whilst keeping within public expenditure limits, is commonly offered as a justification for its adoption. Proponents argue that they allow government to finance more infrastructure projects than would have been possible conventionally as the private sector makes the up-front investment, with the state making periodic payments in the future (NAO, 1999; Grimsey and Lewis, 2002). Indeed, supporters claim that many hospitals and schools would not otherwise have been built as public money was simply not available. The validity of this assertion however depends on whether PPP investment is in addition to, rather than a substitute for, traditional public spending. There is evidence from both the UK (Hall, 1998; Commission on Public Private Partnerships, 2001) and Ireland (Reeves, 2003) to suggest that the approval of some capital investment has been contingent on adopting PPPs. In other words, PPP is the only game in town.

A major attraction for policy makers is the potential for securing infrastructure investment without recourse to public sector borrowing. Although PPP enthusiasts have never claimed that it would directly increase the money available for capital projects, two major advantages were envisaged. First, budget savings would be achieved by managing spending more effectively, which in turn would lead to more projects being undertaken. However, a significant obstacle to this is the relatively higher cost of private sector borrowing. Second, despite the required private sector return, projects have a better chance of proceeding as there is less of an immediate impact on public spending since payments are spread over the life of the contract. However, this latter argument is less relevant following the introduction of Resource Accounting and Budgeting (RAB) in the UK, which requires that money spent is recorded in the year incurred, not in the year spent (unless the two are the same) (Hall, 1998).

A key argument advanced by proponents of PPPs is that they involve transferring risks to those parties best equipped to cope with them, thereby shifting the risk of delivery to the contractor. PPPs therefore motivate the SPV to deliver within budget and on time as a result of the incentives offered through the payment mechanism and also due to unitary payments not beginning until the asset is operational (NAO, 2003). Risk transfer is also seen to have benefits following construction. If PPP contractors fail to perform operations or maintenance at an agreed standard they do not get paid and the purchaser can spend the money elsewhere to make improvements.

How this operates in practice depends on the precise contract terms and the extent to which they are enforced. Moreover, it has been questioned whether PPP really does transfer risk, deliver VFM and provide cost savings (for example, Ball et al., 2000; Wakefield and Valentine, 2001; Heald, 2003). Gaffney et al. (1999) query why the taxpayer should pay to devolve risk that can be addressed through internal action by the National Health Service Executive, and Froud (2003), with reference to risk and uncertainty, suggests that while the latter can only be dealt with by government it is largely ignored in PPP contracts. There is a significant body of evidence that demonstrates unwillingness by the private sector to bear risk. In the education sector, for example, Ball et al. (2000, 2001) analysed a high school project where intensive negotiations resulted in significant reductions in private sector risk by reducing instances where penalties could apply. It is also the case that once PPP contracts are operational they are rarely terminated, often due to potentially high litigation costs (Hencke, 2003). Where contracts are terminated the burden ultimately falls on the taxpayer and service users. For example, one of the two companies contracted to rebuild the London Underground network went into administration in July 2007 (Glaister and Travers, 2007), which could cost the taxpayer as much as £2 billion.

In light of this, it is not surprising that the evidence demonstrating that PPPs deliver VFM is scarce. Given that PPPs are long-term contracts, VFM estimates are confined to the *ex ante* contracting stage, which involves estimating the cost of using conventional public funds (the public sector comparator (PSC) in the UK) and comparing this with a hypothetical PPP project. In reality this has meant that an up-front, traditional procurement payment is compared with a discounted PPP project. However, it is arguably easy to demonstrate that the PPP option provides better VFM by simply manipulating the discount rate by a fraction of one per cent to 'prove' public provision would be dearer and ensure the PPP option (for which funding is available) gets accepted (McKendrick and McCabe, 1999; Pollock, Shaoul and Vickers, 2002; Froud, 2003). One of the reasons for this may be that the public sector purchasers believe that no other route is available to them apart from PPP and thus indicate to the advisors that the PPP bid should always be lower. Other criticisms of the PSC are that risk premiums are factored in to weight the decision in favour of the private sector; in some jurisdictions private contractors can reclaim Value Added Tax (VAT), while the public sector has no tax relief on its projects; and certain public sector projects might have been costed on the basis of traditional technology and construction methods, possibly allowing private sector bids to be lower due to the use of innovative techniques (McKendrick and McCabe, 1999). In addition, VFM tests take no account of differences in quality – a key issue in public service delivery.

Arthur Andersen (2000), one of the earliest VFM studies of UK PPPs, reported average cost savings of 17 per cent, although a number of writers (Hodge, 2004; Ball et al., 2001) have noted that the bulk of these cost savings were attributable to risk transfer. The Commission on Public Private Partnerships (2001) concluded that PPPs showed considerable cost savings of approximately 15 per cent for road and prisons projects, while others, such as school and hospital schemes, illustrated more marginal savings of approximately 2 to 4 per cent. However, Maltby (2003) casts doubt over these conclusions by pointing out that of the 378 PPPs completed by central and local government by 2002 only 23 projects (6 per cent) had been subject to an independent VFM examination. Indeed, Shaoul et al. (2006) found that eight early roads projects were more costly under PPP than they would have been under conventional procurement.

While there have undoubtedly been successful PPPs, the public record is also 'littered with reports by auditors-general and academic analysts and general press comment drawing attention to weaknesses of the system both potential and actual' (Wettenhall, 2007, p. 394). This raises the question, why, in the face of well-documented difficulties and limited evidence of success, do governments persist with the adoption of PPP? Institutional and isomorphic theories may help explain the reasons for this.

THE CONCEPTUAL CONTEXT

The traditional notion of self-contained, bounded organisations with distinct purposes and behaviours, as evidenced by the formal organisation, has been questioned by institutional theorists, particularly with respect to public sector organisations (Meyer and Rowan, 1977; March and Olsen, 1984; Tolbert and Zucker, 1996). Institutional theory views organisations as being immersed in their environments, rather than just interacting with them (Arnaboldi and Lapsley, 2003). 'Technologies are institutionalized and become myths binding on organizations. Technical procedures of production, accounting, personnel selection, or data processing become taken-for-granted means to accomplish organizational ends. Quite apart from their possible efficiency, such institutionalized techniques establish an organization as appropriate, rational, and modern. Their use displays responsibility and avoids claims of negligence' (Meyer and Rowan, 1977, p. 344).

Indeed, institutional theory can help explain why organisations, including governments, are so similar (DiMaggio and Powell, 1983). Scott (1987) and Goodsell (1997) argue that organisational structure is an adaptive vehicle, and institutionalisation refers to evolutionary adaptive processes. They highlight the importance of the symbolic aspects of organisations, and government organisations are good examples of this phenomenon. For example, using PPPs to deliver government policy symbolises a variety of concepts such as achieving better VFM, transferring risk, the inherent association of the private sector with efficiency and solving the infrastructural deficit.

But why do governments, and their organisations, adopt similar policies and structures in the face of widespread criticism of such practices? For example, Cohen and Eimicke (2001) concluded that it is not uncommon for government projects to be initiated because they are in vogue and that there is frequently a lack of a sound business plan and cost-benefit analysis before launching these initiatives. With respect to the introduction of RAB, Connolly and Hyndman (2006) concluded that the production of accurate cost information, either in advance or as part of an *ex post* evaluation, was unlikely to be welcomed by those promoting RAB. Indeed, interviews revealed that while no department had budgeted for the introduction of RAB, or kept records of the actual costs of implementing RAB, they were perceived as being substantial.

Possible answers to this question at the level of the individual government organisation may be related to the process of adapting to the environment and pressures of legitimacy and economic efficiency. Cohen and Eimicke (2001) suggested that the proliferation of e-government initiatives was a defensive reaction to the need to appear to be on the cutting edge and that government organisations obtained funding for projects by convincing senior management that the internet was the only way forward. Funding was more of a function of fashion than an analysis of cost savings or expected benefits, with officials assuming that the use of the internet would increase customer satisfaction (Cohen and Eimicke, 2001). Meyer and Rowan (1977) contend that the social evolution of organisations, and hence their survival, can rest on the observation of formal structures and procedures. Therefore, government organisations may enthusiastically embrace new practices and policies because of pressures of symbolic meanings (social legitimacy) and pressures to conform to commonly adopted action-generating properties (efficiency and productivity gains). Moreover, conformity with the myths (for example, PPPs provide better VFM than traditional procurement) is not enough by itself, the organisation must also maintain the appearance that these myths actually work (Meyer and Rowan, 1977). This is supported by Gold (1999), who suggests that legitimacy is sometimes more important than the rational decision-making processes.

Indeed, Bowerman (2002) contends that governments and their organisations may not only adopt certain policies and practices because of legitimisation needs but also due to resulting isomorphic pressures. DiMaggio and Powell (1983) delineate two kinds of isomorphism – competitive and institutional. The former represents the force of efficiency when there is one best, cheapest or most efficient way for doing things, while the latter includes the rules, symbols and beliefs to which individual organisations must conform to gain social legitimacy. They suggest that competitive isomorphism, whilst explaining the process of bureaucratisation, is inadequate as an explanation of current isomorphic trends. However, as institutional isomorphism confers legitimisation, it is leading to similarity in institutional forms (Meyer and Rowan, 1977; DiMaggio and Powell, 1983; Meyer, 1994). This may help explain policy transfer of the kind discussed in this paper, where institutional forms and processes are adopted by different governments in different countries. DiMaggio and Powell (1983) suggest a number of mechanisms that promote institutional isomorphism: coercion, mimicry and normative pressures.

Hassan (2005) refers to coercive institutional isomorphism as the formal and informal pressures, often through legislation or the need for resources, exerted on organisations by other organisations. Government organisations may be 'coerced' to adopt a particular policy as the result of government mandates and/or informal pressures from other government and private organisations already employing such policies. Although the use of PPPs was not necessarily mandatory in the UK, there is strong intimation that governments expected them to be the preferred option. When the adoption of mandated functions are enforced or encouraged by monetary incentive, both institutional and resource dependency perspectives may be applicable, since such a development connects isomorphic tendencies to organisations' reliance on resources from their environments (Pfeffer and Salancik, 1978; Tolbert and Zucker, 1996).

Organisations often wish to adopt what is considered 'normal behaviour', especially when there is uncertainty about the correct way to behave, which can result in organisations mirroring other organisations that are deemed to be successful (Hassan, 2005). Government organisations (prompted by central government policies) may mimic the practices of the private sector, which they perceive to be more legitimate and successful, and even model themselves on similar organisations, particularly in response to uncertainty. By imitating these organisations, they enhance their legitimacy by demonstrating at least an attempt to improve service provision. Mimetic isomorphism may also be prevalent in network settings as network members turn to other members for information and new ideas, which again can be tied to resource-dependency arguments. Such networks are prevalent in the public sector and are often formed in response to new policy initiatives such as PPPs.

Normative isomorphic forces describe the effect of professional standards and the influence of professional communities on organisational characteristics. Following the development of new rules or professional norms, government organisations may adopt particular policies. This can be interpreted as a collective effort to define the conditions and methods of work, control the area of action and establish a base of legitimate permission for occupational autonomy. There is strong evidence of normative isomorphism in the adoption of PPPs with (elements of) the accounting profession interpreting the accounting rules in a manner which made the use of PPPs attractive.

As a consequence of institutional pressures (coercion, mimicry and normative), institutional rules are created and organisations adopt these rules to obtain legitimacy (Hassan, 2005). Although DiMaggio and Powell (1983) distinguish between these three strands of isomorphism, they acknowledge that they may become entwined in real life. Moreover, they acknowledge that while early adopters of a new policy may be driven by a desire to improve performance, as the policy spreads a threshold is reached beyond which its adoption proceeds with increasing speed because it provides legitimacy above improved performance. While governments continue to promote the use of PPPs, their popularity (and the subsequent transfer of legitimacy) has started to wane. However, this does not imply that organisations that utilise PPPs do so cynically, since, as illustrated previously, there are strong arguments in favour of their use. Khadaroo (2005) adopted an institutional theory perspective when investigating the standard setting process for PPPs in the UK, concluding that HMT seemed to use its coercive power to urge public sector bodies to voice their opposition to the Accounting Standards Board's proposed accounting treatment for PPP-related assets. This paper investigates the application of these theories in the context of the use of PPPs in the Irish education sector.

PPPs IN EDUCATION

Patrinos and Sosale assert that 'the importance of PPP has been steadily rising both in developed and developing countries' (2007, p. 3). Although contracting for education services is uncommon, the PPP model has been adopted in a number of jurisdictions for the purpose of constructing and managing school facilities. The UK announced its first contract in 1996, and since then the model has been used in countries such as Australia, Canada, Germany and the Republic of Ireland (RoI). Evidence with regard to the impact of adopting PPPs in the education sector is relatively scarce (Patrinos and Sosale, 2007) and, where available, tends to cover procurement or early implementation and does not provide definitive conclusions about achieving VFM. In their study of school PPPs in the UK, Ball et al. (2000, 2001) concluded that the VFM case was uncertain, as key drivers such as better innovation and risk transfer were not guaranteed. They 'identified a movement away from the output specification approach to a more input-oriented approach … than would have been expected given the literature surrounding the PFI' (Ball et al., 2000, p. 166). The authors assert that the private sector is reluctant to take on risk and they demonstrate how it negotiated to reduce exposure to risks such as residual value risk, which can have strong incentive effects and improve prospects for VFM. These findings are largely consistent with those published by the UK Audit Commission, which concluded that 'the early PFI schools in our sample were not better designed, and were not achieving efficiency savings in terms of the cost and quality of FM [facilities management] services' (2003, p. 41). Furthermore, whilst awarding a contract on the basis of the most economically advantageous tender may seem obvious, contracts have been awarded on the basis of the overall price, which does not always result in the most cost-effective solution (for example, see Edwards and Shaoul (2003) for a discussion of the Pimlico schools project).

A post-implementation review of the first school PPP procured by the government of New South Wales in Australia found that 'many participants [in the survey] felt that innovation was lacking in the facility design area' (New South Wales Treasury, 2005, p. 1). This was attributed to a number of factors, such as the affordability cap,[4] probity requirements, which limited the extent of interaction between the public sector and bidders, and the desire to protect minimum facilities standards. On the question of risk transfer, the review found that the contract included a 25 per cent cap on monthly performance deductions. This feature, which was based on the approach adopted in similar contracts for PPP schools in the UK, has the impact of blunting the incentives for better private sector performance and was highlighted as a matter for concern by the review. Taken together, the findings in relation to innovation and risk transfer – two key drivers of VFM – raise questions about the potential for achieving VFM in education.

Although a similar post-implementation review conducted by Partnerships UK (2005) found a considerable level of satisfaction on the part of stakeholders, it also reported a significant increase in resource requirements on the part of PPP schools; significant levels of concern about the usability of the payment mechanism; problems with the output specifications, especially where the quality or performance level or standard is not objectively measurable; and concern that provisions for variations and small works requirements were inadequately specified in the contract, leading to concerns of overcharging by contractors. Indeed, McFadyean and Rowland (2002) believed that the governors of PPP schools were having their powers taken away, even though their responsibilities remained. Further *ex post* analyses of PPP in education have been carried out by Ismail and Pendlebury (2006) and Kakabadse, Kakabadse and Summers (2007). Both studies investigated how the initiative was impacting on users, with the former examining schools and the latter Local Education Authorities (LEAs). Ismail and Pendlebury (2006) concluded that some schools faced problems with regard to affordability, the management of the contract and VFM, but that there were higher satisfaction levels regarding the quality of the buildings. Kakabadse et al.'s (2007) findings support the notion of coercion, with 40 per cent of the LEAs analysed believing that funding was only available through PPP. They also found that while there were concerns about the initiative's expense and complexity, there were high levels of satisfaction with the underlying facilities.

Overall, while the evidence on PPP performance in the education sector is less than positive and there are grounds for scepticism about its ability to deliver VFM, the model continues to be heavily advocated. Governments, including those of the RoI and UK, are promoting PPPs as the most efficient way of providing public sector services, with government organisations adopting the model to gain social legitimacy. Both competitive and institutional isomorphism can help to explain this paradox, with the adoption of PPPs in Northern Ireland (NI) and the RoI illustrating why.

The NI Pathfinder Projects

Four secondary schools and two further and higher education colleges, which were high priorities on the Department of Education for Northern Ireland's (DENI's) planning list and of adequate size (in capital terms) to be attractive to private sector investors, were selected as PPP Pathfinder projects (see Table 1). Each of the contracts was to DBFO the schools/colleges for 25 years.

An evaluation of whether these PPPs offered VFM over conventional procurement concluded that with tighter control, the Pathfinder projects offered cost

TABLE 1: THE NI PATHFINDER PROJECTS

Project	Capital Development Costs
Wellington College, Belfast Balmoral High School, Belfast *(single contract)*	£19 million
St. Genevieve's Secondary School, Belfast	£14 million
Drumglass High School, Dungannon	£7 million
Belfast Institute of Further and Higher Education	£20 million
North West Institute of Further and Higher Education	£7 million

Source: NIAO, 2004.

benefits over traditional procurement (Northern Ireland Audit Office (NIAO), 2004). In terms of timescale, while the initial procurement period took longer, construction time was reduced compared to conventional projects, and it was suggested that this reflected the inbuilt incentives of PPP payment mechanisms, whereby the service provider will only receive payments when the facilities become effective. However, there was evidence of only limited innovation in terms of design and service delivery. Assessing the VFM of the five Pathfinder contracts by comparing the preferred bid against the PSC indicates the savings were small: only two contracts were below the PSC, one was almost similar, while the other two were both above it. Overall, the total value of the agreed contract prices was 2.6 per cent (£2.9 million) below their combined PSCs (NIAO, 2004). Furthermore, there has been a major problem with Balmoral High School, with demand forecasts being considerably higher than actual enrolment (Doyle, 2006). However, closing the school was arguably not a viable option (although this has recently occurred) as the education authority would still have to pay the contractor over the 25-year life of the project, and the financial penalties would be severe should it wish to terminate the contract (NIAO, 2004).

If Ghobadian, Gallear, Viney and O'Regan (2007) are correct in their assertion that lessons from previous research on compulsory competitive tendering have not been fully absorbed and similar mistakes are being made in the case of PPPs, it is unsurprising that the NI Pathfinder projects failed to deliver as intended. Indeed, it is reasonable to ask why such a flawed model was even adopted in NI. However, with an education infrastructure badly in need of upgrade, and clear indications from the UK government that PPP was the only game in town, coercive pressures meant there were few alternatives. Horgan believes that due to the need for significant expenditure on NI infrastructure, the NI Executive accepted HMT's 'edict that all the capital projects required to do this could not be undertaken with public money' (Horgan, 2006, p. 662) and that PPP was the only option, supporting the negative perception that PPP was 'the only show in town' (for example, Mayston, 1999; Rutherford, 2003). Indeed, as Health Secretary, Alan Milburn stated that with regard to new hospitals it was 'PFI or bust' (Monbiot, 2002). The case of Balmoral is perhaps an example of the cosmetic or mythical adoption of a private sector practice that can come about under coercive pressures. Hassan (2005) states that the cosmetic or mythical adoption of a private sector practice can occur under coercive pressures with organisations implementing policies simply to appease their constituents rather than on a rational decision-making basis. Balmoral High School is perhaps an example of this as the education authority felt obliged to open a school as PPP funding was available, despite the likelihood that there would be insufficient student numbers among the local community.

The RoI Pilot Projects

PPPs were first introduced in the RoI in 1999. Table 2 indicates that three projects in the education sector have completed the procurement process, with two in operation and one under construction. A further 27 schools or colleges have been earmarked for procurement under PPP (see Table 2).

The five post-primary schools and the Cork School of Music projects illuminate the problems encountered when a new and relatively complex procurement model like PPP is adopted. With respect to the former project, the Irish Comptroller and Auditor General (C&AG) (2004) reported that the initial VFM exercise estimated PPP cost savings of 6 per cent compared to traditional procurement. However, the C&AG highlighted a number of significant errors in the original VFM exercise concerning the timing and discounting of payments and the calculation of the residual value of the school buildings at the end of the 25-year contract, estimating that the final PPP deal was 8 to 13 per cent more expensive than under traditional procurement. The report also highlighted significant deficiencies in the procurement process, including a failure to establish an affordability cap for the project and calculate a public sector benchmark (comparator) until after the selection of the preferred bidder. The C&AG (2004) concluded that although

TABLE 2: THE RoI PILOT PROJECTS

Project	Type and Duration	Contract Award Date	Current Status
5 post-primary schools bundle	DBFO – 25 years	November 2001	Operational since January 2003
National Maritime College of Ireland	DBFO – 25 years	February 2003	Operational since October 2004
Cork School of Music	DBFO – 25 years	September 2005	Operational since September 2007
4 post-primary schools bundle	DBFO – 25 years	Not applicable	Tender evaluation
5 post-primary schools and 1 primary school bundle	DBFO – 25 years	Not applicable	Under procurement
17 third level projects	DBFO – duration not available	Not applicable	Pre-procurement

risks were 'appropriately retained' by the public sector, the extent of risk transfer to the private sector was 'limited' (valued at 6.9 per cent of the overall estimated cost of procuring the schools by conventional means). In relation to the issue of innovation, Hurst and Reeves (2004) questioned the scope for innovation in this project due to the prescriptive nature of specifications provided by the Department of Education and Science (DoES). Moreover, the authors noted that the DoES permitted the contractor to exceed its own space norms when constructing the new schools, thereby undermining scope for determining innovations.

The Cork School of Music project was delayed for over four years after the selection of a preferred bidder due to concerns about affordability as well as issues in relation to the accounting treatment of the PPP. The latter issue arose following confirmation from Eurostat (2004) that the construction costs would be counted in the General Government Balance figures and treated as gross fixed capital formation of general government spread across the period of construction (approximately two years). The only other currently operational scheme, the National Maritime College of Ireland, was comparatively straightforward in terms of contract negotiations and affordability. However, it relies heavily on third-party revenue when the facilities are not in use.

Despite these problems, there remains a commitment to the use of PPPs in the RoI education sector. Indeed, in October 2005 the DoES announced the decision to procure a further 10 schools, together with 17 projects in the tertiary sector, under PPP. Whilst coercion offers the most convincing explanation for the adoption of PPP schools in NI, mimicry better explains their establishment in the RoI. Ghobadian et al. suggest mimetic pressure 'allows the manager a degree of self-determination in realising the course to pursue, although the theory suggests that the eventual outcome will still be characterised by relative homogeneity' (2007, p. 376). As an independent state, the RoI was free to adopt whatever public sector procurement model it considered most suitable; indeed at this time the RoI would not have been under the same financial pressures as the UK. However, despite having the opportunity to learn from the more negative aspects of PPPs in the UK and elsewhere, significant problems were still encountered. Moreover, the DoES has persisted with the PPP model and sought legitimacy through its adoption.

DISCUSSION AND CONCLUSION

The modernisation agenda in the RoI and UK extends across the entire public sector. This paper focuses on the use of PPPs as a policy tool in this process. It draws on institutional theory to explore the manner in which PPPs have been introduced, and in particular ideas of institutional isomorphism as a possible explanation for the manner in which PPPs have been promoted. Isomorphism can involve mimicry, of both private sector practices and of other similar organisations and countries/governments that are perceived to be successful and modern, as the means by which public sector institutions present themselves as progressive. Consequently, government organisations may adopt policies (such as PPP) because they are advocated by central government, particularly where there are coercive forces at play, as is the case with PPPs in the UK, which are often seen as 'the only show in town'. In this way, central government and the adopting organisations portray themselves, initially at least, as modern and progressive, with the legitimisation that this confers. However, governments, and their organisations, should only embark on new initiatives if they are convinced of a practical benefit. If conferment of legitimacy is the desired outcome, they should wait until the 'bandwagon' is rolling towards an acceptable destination before joining it.

Institutional pressures have played a role in the use of PPPs by government organisations, with some PPPs being initiated partly because of legitimacy concerns, such as keeping up with other organisations or being seen to be proactive, as well as more rational motives such as improving VFM. However, the conferment of legitimacy can be unstable and subject to change as an initiative progresses (Bowerman, 2002). Additionally, legitimacy is fragile and can be marred by intense scrutiny. While it can be important to harness these coercive, isomorphic forces to further policy aims, this can lead to unintended consequences. Consistent with Kingdon's (1990) argument that public policy is often not developed in a systematic, rational manner (agenda setting, formulation, implementation and evaluation), the PPP agenda-setting stage appears to be following the garbage can model of decision making (Cohen and March, 1972). In other words, specific solutions are not created to solve specific problems as a rational planning model would assume, but rather organisations sift through the 'garbage' to find a possible solution, which in the case of PPP also found a receptive political environment.

The motivation for the use of PPPs is similar in both the RoI and UK: a desire to improve the public sector infrastructure, whilst staying within public spending limits. However, the background differs slightly. Although both jurisdictions adopted PPP following years of under-spending on infrastructure due to other political priorities, an added dimension in the RoI was the desire to ensure the country's infrastructure kept pace with the rapid economic growth it was experiencing. Seven years after the initial launch of PPPs in the UK in 1992 (and three years after the first PPP school contract in England and Scotland), it was announced that PPPs were to be used in NI and the RoI to build new schools and colleges. However, it would appear that little was learnt from the British experience. Both NI and the RoI installed similar institutions to their British counterparts and, although various reports had criticised the poor design, lack of innovation, limited risk transfer and unrealised VFM in these earlier projects, the NI and RoI education projects experienced similar problems. In NI, only two out of the five Pathfinder contracts were marginally cheaper than the PSC (a framework that is often deemed to be biased in favour of a private sector bid as it overestimates the cost of the hypothetical public sector submission), one was the same and the remaining two were more expensive. In the RoI, the first bundle of PPP schools was 8 to 13 per cent more expensive than under traditional procurement (C&AG, 2004).

Such experiences are not limited to the education sector, with, for example, projects in the UK health sector being widely criticised for a lack of VFM (Gaffney and Pollock, 1999; Mayston, 1999; Froud and Shaoul, 2001; Broadbent et al., 2003). Despite this, the use of PPPs shows no sign of abating with deals amounting to

£11 billion expected to be in place by 2010 in the UK (HMT, 2006). The RoI government has also maintained faith in the initiative despite, in addition to the problems outlined earlier, constraints on spreading the cost of construction over the period of the contract due to a change in the Eurostat (2004) rules. Indeed, it has earmarked 27 PPPs across all three education sectors and preliminary work has commenced in these areas.

The use of PPPs undoubtedly spreads the cost of building and operating public service infrastructure, and it is arguably only fair that future generations of taxpayers pay for assets that they will benefit from. However, as with any 'buy now, pay later' finance deal, the eventual cost is much higher than if expenditure had been made up front. PPPs are appealing to governments as they pass on the cost of rebuilding or refurbishing the infrastructure to future administrations, plus they can be seen to be active in the eyes of voters when it comes to improving public services. While the PPP process has improved, it is still debatable whether it really achieves VFM, and perhaps this issue cannot be fully addressed until some of these long-term contracts come to an end, which is still many years away.

There is evidence that, in the long term, the cost of PPP capital will be higher than the cost of a loan raised by the issue of a public sector bond or low-cost public sector government loan. These higher costs will have to be met from the public purse. While devolving money to schools has allowed them a degree of autonomy and the flexibility to innovate, this autonomy and flexibility could be undermined by PPPs. The payments for PPPs have a legal 'first call' on school revenue in NI and must be paid before any other budget decisions (including the retention or recruitment of teachers) is considered. Consequently, this may limit the ability of school governors to protect the teaching of the curriculum if future funding is reduced.

DiMaggio and Powell's (1983) isomorphic theories help rationalise the introduction of PPPs in the RoI and UK: competitive (whereby PPPs were portrayed to represent the best, cheapest and most efficient way of providing public sector services) and institutional (whereby government organisations had to follow the PPP route to gain social legitimacy). Moreover, in the context of institutional isomorphism, 'coercion' can explain the manner in which PPPs were introduced in the UK, 'mimicry' is more applicable to the RoI and normative pressures provide a reason why elements of the accounting profession interpreted the accounting rules in a manner that made the use of PPPs attractive.

The use of PPPs in education coincided with the devolution of powers to the Northern Ireland Executive. However, a combination of a neglected schools' estate, severe fiscal constraints and an expectant electorate gave the newly formed Executive little choice but to bow to pressure from Westminster. This coercive pressure undermines the ability of managers (principals) and employees (teachers) to adopt new patterns of behaviour, particularly when they have been schooled in a different institutional environment (Ghobadian et al., 2007). As with the RoI (Hurst and Reeves, 2004), whilst some NI principals have coped with their new role as contract negotiator, others have found it more difficult. Furthermore, PPP imposes a more commercial outlook on schools with respect to raising third-party revenue, which is in contrast to the more benevolent community perspective that allowed facilities to be used free of charge. In a situation of coercive isomorphism, managers are forced to respond in a certain way by the rules imposed on them (Ghobadian et al., 2007), and they can then 'become compliant through a process of socialisation and identity formation' (Johnson, Smith and Codling, 2000, p. 573). This appears to be the case in NI, where education authorities and principals are willing to implement PPP as it is perceived to be the only means of renewing the schools' estate, despite all the problems with Balmoral High School.

Like NI, the RoI schools' estate had suffered from years of underinvestment. When searching for solutions to rectify this, it is perhaps unsurprising that it was influenced by how its closest neighbour had tackled similar issues. This mimetic isomorphism gave the RoI government a degree of 'self-determination' (Ghobadian et al., 2007). Whilst some aspects of the UK PPP model were copied, the RoI adopted a more social partnership approach (Horgan, 2006), resulting in all parties, including the trade unions, being more supportive of the initiative than in the UK.

If coercive isomorphism is supplanted by mimetic and normative isomorphism, compliance is replaced with the potential for interpretation, innovation and error to influence, challenge and change prior experiences and behaviour (Johnson et al., 2000). The key difference is the location of the impetus: coercion compels certain behaviour, while mimetic and normative isomorphisms allow a degree of self-determination (albeit that the outcome may be characterised by relative homogeneity). This may help explain why, despite a lack of coercive pressure and the opportunity to learn from the UK experience, similar mistakes were made in the RoI education sector with the adoption of PPP.

NOTES

1 Different political and legislative systems operate in England, Northern Ireland (NI), the Republic of Ireland (RoI), Scotland and Wales. Unless stated otherwise, 'United Kingdom' is used to define England, NI, Scotland and Wales; 'Britain' is used to define England, Scotland and Wales; while 'Ireland' refers to NI and the RoI.

2 It is interesting to note that New Labour repackaged the PFI as part of the wider PPP programme, with some viewing the term PPP as being friendlier sounding and less politically charged (Economist Intelligence Unit, 2002). As noted above, while strictly the PFI is a form of PPP, these terms are now often used interchangeably. Consequently, the term PPP will be used throughout the remainder of this paper.

3 Design, Build, Finance and Operate (DBFO) contracts – these are contractual relationships between the public sector and private sector contractors for the design, construction, operation and financing of public facilities or infrastructure. The private sector contractor is responsible for designing, building, operating and financing the facility and recovers its cost solely out of payments from the public sector. At the end of the contract term, which is often for 25–30 years, ownership of the facility usually transfers to the public sector.

4 The affordability cap provides a reliable assessment of the maximum amount the state is willing to spend.

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CONCEPTIONS OF LEARNING OF PROSPECTIVE PROFESSIONAL ACCOUNTANTS IN IRELAND: AN EXPLORATORY STUDY

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ABSTRACT

This exploratory interview-based study examines the conceptions of learning of eight students who had recently completed the qualifying examinations of one of the professional accountancy bodies in Ireland. The paper presents and analyses the participants' descriptions of what learning means to them and investigates the possibility of classifying the descriptions using categorisations of conceptions of learning established in prior research in the higher education setting. The findings reveal that both reproductive and constructive conceptions are identified among the participants and the established categories of description capture the variation in the conceptions reported.

INTRODUCTION

It is widely recognised that the role and the work environments of professional accountants are increasingly dynamic and complex and that accounting programmes must keep pace with these changes in order to educate and train future accountants appropriately (Albrecht and Sack, 2000; Deppe, Sonderegger, Stice, Clark and Streuling, 1991). Accounting education has been heavily criticised for focusing on the transmission of technical knowledge rather than on developing the wide range of knowledge and skills that students will need to maintain professional competence in the twenty-first century (American Accounting Association (AAA), 1986; Albrecht and Sack, 2000; Arthur Andersen & Co., Arthur Young, Coopers & Lybrand, Deloitte Haskins & Sells, Ernst & Whinney, Peat Marwick Mitchell, PriceWaterhouse and Touche Ross, 1989; Power, 1991; Sundem and Williams, 1992; Tinker, 1985). To prepare students for their professional careers, education programmes need to move from a content orientation to focusing on the process of student learning and the achievement of desirable learning outcomes. The International Federation of Accountants (IFAC), which represents 157 professional accountancy bodies worldwide, embraces the change agenda, contending that 'the education and practical experience of professional accountants should provide a foundation of professional knowledge, professional skills and professional values, ethics and attitudes that enable them to continue to learn and adapt to change throughout their professional lives' (IFAC, 2003, para. 9).

While the call for research to support accounting education change has generally been well-heeded, the setting for such research has commonly been within accounting programmes in higher education. This focus may be justified in the United States (US), where many students take the qualifying examinations of professional accountancy bodies while completing their higher education studies, thus experiencing pre-qualification accounting education wholly in the higher education setting. However, in Ireland and the United Kingdom (UK) those seeking to qualify with the professional accountancy bodies typically spend a number of years, after the completion of higher education programmes, preparing for the examinations of those professional bodies. At the same time, these prospective professional accountants must gain a minimum of three years' appropriate professional training to obtain their professional qualification. Thus, while it is very important to enhance and support the increasingly active field of research focusing on accounting education within higher education, there is also a need to extend the research agenda in Ireland and the UK to the pre-qualification professional accounting education environment. The present paper addresses this gap in the prior literature by exploring conceptions of learning of pre-qualification professional accounting students.

Membership of professional accountancy bodies in Ireland has expanded considerably in the past twenty years and the wide-ranging career opportunities available to accountants have attracted a large number of graduates to the profession each year (Byrne and Flood, 2003; Downes, 2007; IAASA, 2008; Riley, 2008). However, it must be recognised that the increasing opportunities for professional accountants in Ireland have given rise to many of the problems and challenges faced in the US, UK and elsewhere. The dynamic work environments and the impact of technology, for example, have emphasised the need for Irish accountants to develop new skills and competencies to help them adapt to their changing roles (Collins, 2000). A survey of members of the Institute of Chartered Accountants in Ireland (ICAI), the largest professional accounting body in Ireland, indicated that while they considered that their professional education prepared them well for the traditional accounting activities of information analysis and problem solving, it had not sufficiently developed broader knowledge and skills necessary for the current dynamic work environment (Meagher, 2001).

In recognising the need for new members to have a wide range of knowledge and skills that allow them rapidly adapt to change, the ICAI began the roll-out of a new competency-oriented professional education programme in 2007. The desired learning outcomes of the new pre-qualification education programme are that students will have 'a detailed comprehension of core concepts and principles and the capability to apply this comprehension along with professional judgement to the resolution of problems in an intra- and inter-disciplinary context' (ICAI, 2007, p. 66). To achieve these learning outcomes the new education programme focuses on the development of functional competencies, business competencies and core professional values (ICAI, 2007). However, while the ICAI, like many other professional accountancy bodies, has clearly articulated the goals or desired outcomes of pre-qualification professional education, there has been very little research conducted in Ireland or elsewhere to understand how students learn in the context of professional accounting programmes and to examine how both personal and situational factors impact on such learning. Without such research, it is difficult to envisage how appropriate educational design, operation and evaluation (in terms of syllabus, teaching methodologies, assessment strategies, etc.) can occur to facilitate the achievement of high quality student learning outcomes in professional accounting education.

This study provides some initial insights into student learning in the context of professional accounting education by exploring the conceptions of learning of a small group of students of one of the Irish professional accountancy bodies. As there is relatively little written about student learning within the professional accounting context, or indeed within professional education generally (Taylor, 1997), the study is informed by student learning research within the higher education setting. The authors fully acknowledge that concepts developed in the higher education context cannot be unquestionably applied to the context of pre-qualification professional education, but is seems reasonable and, indeed, sensible when developing a research agenda for the professional accounting education arena to consider the extension of these existing concepts to the new setting. Perhaps a reasonable question to ask before commencing such a study is why students in the professional accounting context merit separate examination. In other words, why would we anticipate that such students might hold different conceptions of learning to students in higher education? Flood and Wilson (2008) contend that the close interaction of professional education and practice, the variations in the learning environment (syllabus, teaching approaches, forms of assessment, etc.) and the more diverse personal factors of students (prior educational experiences, life and work experiences, etc.) result in the context and experience of professional accounting education being potentially divergent to that of higher education. Thus, the examination of learning conceptions in this previously unexplored context is a valid research objective.

The remainder of the paper is structured as follows. Firstly, prior literature concerning conceptions of learning is considered. The subsequent section presents the specific objectives of this study and describes the data collection and analysis process. The findings are then presented and discussed and the paper concludes following consideration of the implications and limitations of the study.

CONCEPTIONS OF LEARNING

Prior to the 1970s, studies concerning student learning typically explored the quantity of what students learned from an external perspective and did not provide an understanding of why some students learned 'better' than others (Marton and Booth, 1997, pp. 14–16). The new stream of student learning research that emerged sought to understand the process of student learning from the perspective of individual students. More particularly, it began to explore the ways in which students approached learning tasks, the influence of the learning context and the variation in the learning outcomes achieved. It was repeatedly found that the quality of the learning outcome achieved, in terms of the degree of understanding abstracted or constructed, is influenced by the learning approach adopted.

A learning approach describes how a student relates to a learning task and two different learning approaches were primarily identified: a deep approach and a surface approach (Ramsden, 1987). It was found that deep approaches to learning were related to high quality learning outcomes as opposed to surface approaches, which were related to poor quality learning outcomes (Marton and Saljo, 1976a). Importantly, it was recognised that learning approaches are not intrinsic characteristics of students, rather they are dynamic and are influenced by a whole range of both personal and contextual factors (Marton and Saljo, 1976a, 1976b; Entwistle and Ramsden, 1983; Prosser and Trigwell, 1999). The significance of the learning environment, in terms of syllabus, teaching and assessment, on students' learning approaches cannot be overstated. Indeed, it is the interaction of a student's perceptions of the learning environment with personal variables that results in the student's decision to adopt a particular learning approach to a learning task. One of the many personal factors found to be related to the variation in students' learning approaches and ultimately to the quality of the learning outcomes achieved is their conceptions of learning (Dahlgren and Marton, 1978).

A conception of learning captures the way in which a person views learning, in other words, what learning means to him or her. In early work in the area Dahlgren and Marton (1978) identified two different conceptions of learning. The first conception views learning as something that is initiated externally of the individual. It is not something driven by internal motive; learning happens to the person and is conceived in this instance as a passive activity involving the transmission of unrelated 'bits of knowledge'. The second conception captures an active view of learning, which involves changing one's conception of reality in some way. Saljo (1979), developing this work further, explored the qualitative variation in the ways students described their view of learning and determined five categories of description to capture the variation identified. These five categories of description (Conceptions A–E), have subsequently been confirmed by a number of researchers, notably Van Rossum and Schenk (1984) and Van Rossum, Deijkers and Hamer (1985), while Marton, Dall'Alba and Beaty (1993) more fully described the five categories and identified a sixth (Conception F). The elements or characteristics of these various conceptions are briefly outlined in Table 1.

A conception of learning is not a stable characteristic or attribute of an individual, rather it reflects his/her current learning context and is likely to

TABLE 1: CONCEPTIONS OF LEARNING

Category of Description	Characteristics
Learning as…	
A. An increase in knowledge	Passive, external process of accumulating knowledge
B. Memorising	Passive, external process of accumulating knowledge but recognising that knowledge gained may be reproduced on specific occasions (e.g. exams)
C. Acquisition of facts that can be retained and/or used in practice	Passive, external process of accumulation but focused on the application of knowledge and recognising that acquired knowledge may need to be tailored or adjusted for application in practice
D. Abstraction of meaning	Active, intrinsic process focused on developing personal understanding
E. Interpretive process aimed at understanding reality	Active, intrinsic process focused on developing personal understanding and then confirming and/or changing one's view of a phenomenon as a result of that understanding
F. Changing as a person	Active, intrinsic process focused on developing personal understanding and then confirming and/or changing one's view of a phenomenon as a result of that understanding. Through seeing the world differently, learning results in changing as a person

Source: Marton et al. (1993); Saljo (1979); Van Rossum and Schenk (1984); Van Rossum et al. (1985).

change over time as his/her learning situation changes. Indeed, Van Rossum et al. (1985) contend that the six categories of description could be viewed as a hierarchy which 'show the development of the student from novice to expert in learning (see Van Rossum and Hamer, 1985); a development that moreover is strongly contextually determined' (Van Rossum et al., 1985, pp. 636–637). In other words, it might be expected that as students mature and experience new learning situations and contexts, their conceptions of learning would become more constructivist in orientation. Indeed, such a development trend was reported among students interviewed repeatedly over a number of years in the Marton et al. (1993) study.

However, more recently, it has been recognised that the identified conceptions are not necessarily hierarchical or indeed universal, particularly when examined with non-Western students. Makoe, Richardson and Price (2008) highlight the work of Watkins and Regmi (1992), who reported that while some Nepalese students described learning as changing as a person, this was a view induced by local religious and cultural traditions and was not the most sophisticated conception described among participants. Similarly, Marton, Dall'Alba and Tse (1996) found among Chinese teacher educators that memorisation, previously considered to be associated with a low-level, reproductive conception of learning, was often associated with developing and retaining deep understanding. Makoe et al. state that 'there is a clear suggestion that students' conceptions of learning vary across different cultures and systems of higher education' (2008, p. 306) and thus the importance of examining conceptions of learning with an understanding of the learning context is reiterated.

In terms of the links between conceptions of learning and learning approaches, it is important to note the clear demarcation between Conceptions A–C and Conceptions D–F. Conceptions A–C can be grouped as reproductive- (quantitative) oriented conceptions, as opposed to Conceptions D–F, which have the construction of meaning (qualitative) at their core (Duarte, 2007). Marton and Booth (1997) suggest that those who view learning primarily as reproductive limit themselves to the tasks of learning imposed by a study situation. Conversely, those who conceive learning in the constructive terms of seeking meaning look beyond the tasks themselves to the world that the tasks reveal. They conclude that 'this is directly analogous to the difference between surface and deep *approaches* to learning: the former focusing on the tasks themselves and the latter going beyond the tasks to what the tasks signify' (Marton and Booth, 1997, p. 38, emphasis in original). Indeed, Van Rossum and Schenk (1984) found that students who held reproductive conceptions of learning adopted surface approaches to learning, whereas those who adopted constructive conceptions adopted deep approaches to learning. Thus, if educators are interested in encouraging deep approaches to learning so that high quality learning outcomes might emerge, then fostering constructive views of the nature of learning is required.

There has been very limited examination of the conceptions of learning of accounting students at any level or in any context. A study by Sharma (1997) explored the views held by second-year undergraduate accounting students in Australia. He reported that the majority of students held reproductive conceptions and additionally tended to adopt surface approaches to learning. He found that students reported high levels of syllabus-boundedness and fear of failure, and preferred organised and fact-oriented courses. In a study of undergraduate and postgraduate accounting students in Ireland, Byrne and Flood (2004) reported that while evidence of all six categories of learning were found, reproductive conceptions were more prevalent that constructive conceptions. No research has been published to date that has explored the conceptions of learning of students of professional accountancy bodies.

RESEARCH METHOD

This study is exploratory in nature and its primary objective is to examine the conceptions of learning of a small group of students who had recently taken the final examinations of one of the professional accountancy bodies in Ireland. The study also aims to examine the extent to which the categories of description regarding learning conceptions identified in the higher education environment are appropriate to differentiate the conceptions of learning of the participating students in this professional education context.

The data for the study were gathered from a series of in-depth interviews conducted with eight students who had recently taken the final qualifying examination of the body. All of the participants were working in accounting firms to complete the training requirements for membership of the professional body. In identifying participants for the study, efforts were made to capture some of the diversity of the student group, in terms of prior educational background (e.g. they are not all graduates of the same university), employer type, geographical location and gender, though in no way was the group of participants intended to be representative of the population of professional accounting students. (As a consequence, the research study and its findings are largely exploratory.) The purpose of the study was clearly outlined to the participants and they were reassured that the data would only be used for research purposes. To protect the anonymity of the participants, they were each allocated a pseudonym. A brief profile of the participating students is provided in Table 2.

The approach to the interviews was naturalistic in orientation and a general interview guide was used (Patton, 2002, p. 343). All of the interviews, with the permission of the participants, were taped and were then transcribed. The data were analysed using 'template analysis' (Crabtree and Miller, 1992). This analytical approach is widely used in qualitative research and is more flexible than many other analytical tools (King, 1998, pp. 118–119). The data were read carefully many times and each issue raised was annotated in the margin. In addition, the audiotapes were listed to repeatedly, in order to make every effort to capture the meaning of students' descriptions. In assigning labels or codes to students' descriptions of their learning conceptions, the researchers were mindful of the categories of description identified by Saljo (1979) and Marton et al. (1993), which are outlined in Table 1. If it was considered that one of the established categories of

TABLE 2: PROFILE OF PARTICIPANTS

Participant*	Higher Education Degree(s)	Employment	Location
Lucy	Accounting degree	Small firm	Dublin
Mary	None	Big 4 firm – regional office	County town
Anna	Finance degree	Medium-sized firm	Belfast
Tom	Arts degree and postgraduate conversion diploma	Big 4 firm	Dublin
Ben	Accounting degree and Master of Accounting	Medium firm	Belfast
Rory	Business degree and Master of Accounting	Big 4 firm	Dublin
Liam	Business degree	Small firm	County town
Jack	Accounting degree	Big 4 firm	Dublin

* To maintain anonymity, the real names of the participants are not used. The names assigned are only for the purposes of clarity of discussion.

description adequately captured the meaning of the participants' descriptions, that category label was used in this analysis. However, while existing categories were evaluated for this context and subsequently used, the researchers were also anxious to remain open to identify novel features that perhaps had not been identified among students in studies of the higher education environment. As identified in prior research, students' descriptions rarely include all aspects of a particular conception, rather they will include fragments of that conception. Hence, the aim of the analysis process in studies exploring conceptions of learning 'is to determine precisely just what the fragments are fragments of' (Marton et al., 1993, p. 285).

FINDINGS AND DISCUSSION

The presentation of the findings of this study is primarily via the explication of students' descriptions, as Marton and Booth (1997) contend 'the most revealing way of introducing the conceptions is through the way they are voiced' (p. 36). At the outset of each interview, the student was asked, 'What does learning mean to you?' The findings are presented by firstly describing the conceptions that are considered reproductive in orientation, followed by those that are constructivist in perspective. Further analysis is then conducted to determine if variation within the description of those two clusters aligns with the six categories of descriptions determined by Saljo (1979) and Marton et al. (1993).

Reproductive-Oriented Conceptions

Firstly, Lucy explains that she has always viewed her participation in educational programmes as necessary and functional, as she simply wants to acquire qualifications: 'I'm just looking forward to the day I can say "I'm an Accountant"'. Her functionalist view of education and her lack of reflection on learning results in her describing a quite simplistic view of learning:

> [Learning is,] basically, broadening your knowledge … increasing your awareness of different topics. [Lucy]

Lucy explains that she doesn't view understanding as critical to her study activities, rather she feels that understanding is developed when knowledge is put into practice in the workplace. However, she found that many aspects of the syllabus for the final qualifying examination related to issues arising in large companies, which she found were irrelevant to her work experiences with small businesses. Thus, she reflects that there is little interaction between her study activities and her training.

Liam, like Lucy, works in a small firm, and doesn't view his study activities as interacting with his work experiences. In terms of his conception of learning, he contends:

> My personal opinion is you get stuff and you go through it from start to finish and you make summaries and you learn it off and you try and understand it obviously, but I always approached new things – learned it off and then you always have it. [Liam]

While Liam acknowledges that gaining understanding is an element of learning, it is not one on which he places emphasis. He views the memorisation of new knowledge as more important as he will then 'have it' for examinations. Mary, a third student, similarly sees learning as the acquisition of knowledge for the very specific purpose of taking examinations; indeed, she describes learning as 'cramming'.

The descriptions of learning put forward by these three students (Lucy, Liam and Mary) are primarily reproductive in orientation. There is also a sense from these descriptions that learning is seen as a mechanical process that is activated when required. There is little evidence to indicate that Lucy, Liam or Mary perceives learning as personal, interesting or engaging. Mary explains that her views of learning are all filtered through the lens of studying accounting, which she has found difficult over the years and was not her first choice of study. That said, when asked to reflect on the meaning of learning in a broader context than accounting, she still relates learning to preparedness for examinations. Lucy too has had doubts about her choice of career. She really wants to gain the professional qualification because it would signify the achievement of a long-held ambition, but if she was choosing a career again she feels that she would select something else. Liam expresses uncertainty regarding how to study for aspects of the final examination. While colleagues and friends have advised him to focus on understanding knowledge and applying it in case studies, his preference is to rote-learn as this approach has proved successful for him in the past.

While Tom also views learning as the acquisition of knowledge, he considers that the application of knowledge is an integral part of learning too:

> Learning would be to increase my knowledge and then to be able to apply that knowledge to whatever field is relevant, whether it be work or … education or … whatever. [Tom]

While Liam and Mary indicated a limited application of their 'learned' knowledge in examinations, Tom sees opportunities for the application of knowledge in a wider context. However, when he elaborates on his conception it is evident that he does not associate learning with personal interest but rather sees learning as purposeful. In particular, he associates learning with formal education and he learns in order to get marks in examinations. Additionally, Tom looks for external validation that he has learned something, rather than expressing a personal experience of learning:

> I didn't do an accounting degree … I did history, so it was essay based – so I suppose the only way you knew you were learning was when you got your essay back and it was a good mark, so you obviously impressed upon the marker that you knew what you were talking about. And then I suppose a step up, in the exam you

> might have a similar topic, or be able to apply some of the knowledge … and again the marks would reflect that. [Tom]

Tom considers that understanding knowledge is a crucial element in learning, but again this view is shaped by his focus on examinations. It appears that he sees understanding not as something that gives personal meaning to learning, but rather it is necessary to ensure examination success, as he comments: 'you can learn something without understanding it, but, I mean, you would be caught out eventually'.

Constructive-Oriented Conceptions

Anna also conceives learning in terms of acquiring and applying knowledge. However, in contrast to any of the students mentioned so far, she identifies two types of knowledge as being associated with what she calls 'professional learning': technical knowledge and practical knowledge. In many ways, this distinction reflects the dual aspects of 'knowing that' and 'knowing how' associated with professional competence (Eraut, 1992, p. 105). While Anna acknowledges that technical knowledge can be acquired from textbooks, she considers that the practical element of learning is very much integrated with her work experiences as a trainee accountant:

> I think that for me, learning – in terms of professional learning – there are two aspects to it – there's the technical aspect and also practically, you know, how you actually prepare a set of accounts and the background to double entry, the whole basis of the thing. And I would say that as far as the nuts and bolts of the whole thing my work experience in [Firm X] is invaluable. I couldn't imagine that I would have progressed as easily or as hassle-free without working in practice …. The other half, the technical side of it, purely for me, a lot of it was just regurgitation, you know, just sitting down with your books and going through it and learning it and just regurgitating it at exams. [Anna]

Ben also associates learning with his work and concurs with Anna that it provides him with practical knowledge:

> What is learning? … Probably accumulation of knowledge would be part of it but experience as well …. To me learning theory is probably the minor part; the major part is putting it into practice and a lot of that only comes through time. [Ben]

Ben feels that his work experiences have changed his conception of learning. He acknowledges that he enjoyed being exposed to new knowledge during his university courses but that he acquired that knowledge simply to pass examinations. Now, having worked in an accounting firm for two years, he views learning as centring on gaining experience that allows him to fulfil his professional role. There is also the sense that Ben considers his experiential knowledge as dynamic and useful, which again overlaps with Anna's conception:

> There is probably a lot of stuff that you learn in college which you never ever use in a practical way, you sort of discard that as not overly important once you passed your exam. Whereas in work, everything that you learn you'll generally use it again and … it's like it's building up experience … you come across a thing one time and you don't know what to do with it, so you go and find out and the next time it comes up, well you do it without even thinking about it, you know. [Ben]

Ben contends that it is possible to learn without understanding, but he would find it difficult to do so. He feels that that his experiences in work have provided him with a better foundation and framework to understand accounting and that his practical knowledge has given meaning to technical knowledge he learned in university:

> It is possible to learn without understanding, but to me it's important that you understand, I find it much more difficult to learn without understanding. I would say that throughout my whole accountancy degree, Master's, right through, I never really understood accountancy until I worked in practice, you know. I learnt the FRSs back to front and inside out, and even double entry, it sounds ridiculous, but double entry never clicked until I was actually … we did a sort of book-keeping course the first two weeks we came into [Firm Y] and it was like it was easy after that, and I was going 'if I'd known that before I'd done all those degrees' (laughing). [Ben]

Ben's conception of learning is experiential and is personal to the extent that, by learning from experience, his understanding of issues is developed and he can carry out his professional duties appropriately. Anna and Ben's emphasis on the enhancement of understanding through practice echoes the old Chinese proverb: I hear and I forget; I see and I remember; I do and I understand.

Jack's conception of learning also embraces personal engagement but it is more abstract than experiential. For Jack, learning is about having a well-developed personal understanding of concepts and topics and being able to integrate knowledge:

> I think the term 'learning' is more to do with understanding topics and the grasping of concepts. I like to think from the ground level and develop my understanding of a certain concept and that's my idea of learning … separate components and building it all together. [Jack]

There is a sense that Jack internalises learning, he charges himself with the responsibility of developing his understanding and he actively engages in his learning to gain the type of integration of knowledge from different sources that he thinks epitomises learning.

Rory similarly views learning as something very personal and something that he controls and benefits from. He contends that, for him, 'the essential point [about learning] would boil down to self-development'. He considers himself to be constantly learning and developing in every aspect of his life and effectively re-evaluating his belief system:

> I mean, I would be one of these people that would have a belief whereby, you know, I would be very confident about what I think but I'm always open to what other people are saying … I'd be saying 'Okay now, am I right?', take in what other people are saying, make up my own mind as opposed to being told what I'm meant to be thinking. But if you'd sort of seen me two years ago I probably would have been more bloody-minded, to pardon the expression. I probably would have just put the blinkers on: 'I'm right, I'm right, I'm right'. So once again, to a certain extent, that's development, learning what other people's skills are and learning what they have to say as well. [Rory]

Rory internalises learning. He has thought about his beliefs and why he holds those beliefs, but he does not stagnate in that position. He is open to new ideas and ways of thinking, but he doesn't simply adopt those new ideas, he evaluates them, and makes sense of them relative to his own established belief system. Also, Rory's conception of learning is highly abstract: he does not relate learning to accounting subject matter and examinations, rather it is about who he is as a person and how he develops as a person.

Application of the Six Prior Categories of Description

Having explored the variation in the conception of learning of the students in this study, the appropriateness of classifying these conceptions using the categories of descriptions of Saljo (1979) and Marton et al. (1993) can be considered. As illustrated in Table 1 and discussed earlier, those categories of description capture considerable variation in conceptions of learning. Further, while they were developed with students in the higher education sector, they may adequately embrace the variation of the conceptions described by participants in this study in the environment of professional accounting education. To evaluate the appropriateness of applying the established categories of description in this context, the descriptions of each of the students are considered in the light of the various categories described in Table 1. Furthermore, differences in these descriptions and those reported in prior studies in the higher education setting are evaluated.

Firstly, the reproductive-oriented descriptions of Liam, Lucy, Mary and Tom will be considered. In relation to the categories derived by Saljo (1979) and Marton et al. (1993), Lucy's description appears to fall into the category of *Conception A – Learning as acquiring knowledge*. The vagueness often associated with this conception is evident in her description, as she views learning as simply increasing her awareness of different topics. Her description is also very impersonal and lacks any sense of engagement. Liam's description shares many similarities to Lucy's as it focuses on the quantification and acquisition of new knowledge. However, the principal feature of his description is memorisation. While Liam implies that he will use his acquired knowledge in examinations, Mary's description explicitly focuses on this aspect. She accumulates knowledge by cramming, solely for the purpose of dealing with examinations. The rote-learning orientation of both Liam and Mary's descriptions and their acknowledgement of such a limited application of knowledge is characteristic of *Conception B – Learning as memorising*.

Categorising Tom's conception of learning is a bit more complicated. Tom contends that seeking meaning in his study is important, which at the outset might imply that his conception of learning would fall into one of the constructive categories. However, it appears that although he seeks meaning it is not to gain personal understanding, rather it is to apply his knowledge appropriately in an examination or a work situation. Additionally, he doesn't describe learning in a personal way; he views it as functional and external to himself. His lack of personal involvement or internalising of learning, in addition to his focus on knowledge application, means that his description appears to be adequately described by *Conception C – Learning as the acquisition of facts that can be used in practice*.

What distinguishes the conceptions of learning of the four remaining students is that they conceive learning as personal, they engage with learning tasks and situations and they are more reflective of what learning means to them. As with the students describing the reproductive conceptions, no student describes every aspect of a particular category. Rather, as reported in Marton et al. (1993), students generally describe different fragments of a conception. This is particularly true in the case of the three students (Anna, Ben and Jack) whose descriptions fall into the category *Conception D – Learning as the abstraction of meaning*.

In the first instance, Anna's description has some similarities with Tom's. However, what pushes her description into the Conception D category is the sense that she engages personally in her learning. She reflects that her learning through work provides her with understanding of concepts and practices and she finds this learning more engaging than reproductive forms of learning. Anna's identification of different types of learning indicates how the context of learning has influenced her conception, as her view of learning has developed as a result of her exposure to accounting practice during her training.

Ben's conception of learning is similar to Anna's and he also describes a development in his views since he moved into the professional education context. He describes how his conceptualisation of learning has changed from a reproductive knowledge acquisition focus when at university to a conception that focuses on personal understanding, facilitating his professional competence. While there is a sense that Ben now sees learning as a form of personal development, this development relates to work situations only. His descriptions lack any reference to developing in terms of seeing the world differently, which would typically characterise the two higher level conceptions.

Jack's conception of learning is also very much that of Conception D. However, unlike Anna and Ben, Jack doesn't necessarily describe learning in terms of examinations or work experience, rather there is a sense that seeking meaning of material is important in itself for Jack. He likes to build strong foundations for his knowledge base and he constantly seeks interconnections in his learning. Like Anna and Ben, he actively engages in learning and his descriptions emanate from a sense of interest and involvement in his learning.

Rory's conception of learning appears to be that of developing as a person and thus appears to fall within the category identified by Marton et al. (1993): *Conception F – Learning as changing as a person*. Rory views personal development

TABLE 3: CLASSIFICATION OF PARTICIPANTS' LEARNING CONCEPTIONS

CONCEPTION	DESCRIPTION	STUDENTS
A.	Learning as an increase in knowledge	Lucy
B.	Learning as memorisation	Liam, Mary
C.	Learning as the acquisition of facts that can be used in practice	Tom
D.	Learning as the abstraction of meaning	Anna, Ben, Jack
E.	Learning as an interpretative process aimed at understanding reality	—
F.	Learning as changing as a person	Rory

as the essence of learning, it involves him seeing things differently, and reflecting on and changing his personal beliefs. Another characteristic of this conception that Rory embraces is that learning is not restricted to specific aspects of his life, rather he sees it as enveloping every part of his existence. Rory's conception is the most complex and most developed of the participants in this study. The classification of the conceptions of learning of the participants in this study to the various categories identified in the prior literature is summarised in Table 3.

CONTRIBUTION, IMPLICATIONS AND LIMITATIONS

It has been found that the previously reported categories of description identified in the higher education setting appropriately reflected the variation in the conceptions of learning described by the participants in this study. The clear distinction between Conceptions A–C and Conceptions D–F reported in prior studies was evident and clearly centred on whether learning embraced understanding and the extent to which students engaged with, and were active in, their learning. Thus, this study has determined the appropriateness of extending the categories of description of Saljo (1979) and Marton et al. (1993) to the conceptions of learning of this group of students in the professional accounting domain in Ireland. Furthermore, this study has expanded the literature on conceptions of learning by elaborating the characteristics that distinguish reproducing conceptions and constructive conceptions.

The students in this study who describe reproductive conceptions of learning appear to restrict the notion of learning to what is required for examination purposes and do not make any reference to learning as part of either their training in the workplace or their wider lives. On the other hand, the students describing constructive conceptions have reflected on the notion of learning in the contexts of education programmes and the workplace. While this demarcation between reproducing and constructive conceptions is very much in keeping with other characteristics that distinguish such conceptions, the findings may be useful for the interpretations of 'fragments' (Marton et al., 1993, p. 285) of descriptions of conceptions that might emerge if this type of study is conducted with other groups of students in professional education programmes.

A further interesting insight provided by this small-scale study is the reflections of the participants concerning their experiences of both working and studying, as opposed to their prior experiences of studying full-time in higher education. Two students explicitly reflect on the maturing of their conceptions due to their changed learning environment. They contend that their professional experiences have caused them to alter their view of learning from something that is solely for examinations to that of seeing learning as something that is engaging, evolving and highly relevant to the maintenance of their professional competence. Thus, evidence is provided, albeit from a very small number of cases, of a development trend in learning conceptions.

The findings of this study may be useful in a number of ways. Firstly, while the study embraced only a small number of cases, it may enhance awareness among educators of the variation of student characteristics and perceptions in the professional accounting environment. Coupled with evidence from additional cases, such increased awareness may motivate educators in the accounting profession and more generally to reflect on the implications of the way they design and present their courses for students holding such varied conceptions of learning. Secondly, the findings may provide an impetus for further investigation of student learning issues in this environment. In particular, future research needs to explore the relationships between conceptions of learning, context variables, students' learning approaches and learning outcomes in the setting of professional accounting education. Thirdly, the study has indicated the need to examine the interplay between education programmes and the training experiences of prospective professional accountants, to ensure that they are properly integrated and develop the base level of professional competence that will act as a foundation for lifelong learning. This study and further studies in this domain may provide some evidence of the effectiveness of the pre-qualification education system within the accounting profession from the student perspective, and may generate an additional frame of reference for education reforms within professional accountancy bodies.

In terms of limitations, it is clear that this study was exploratory in nature and only gathered data from a small number of students. While care was taken to select participants with different characteristics (gender, prior education experience, type of training firm, etc.) in the hope of exposing variation in the conceptions of learning held in this context, it is possible that alternative conceptions of learning are held by students who did not participate in this study. It would be very useful if future research replicated this study in the same or similar contexts and, indeed, the work could be extended by a quantitative examination of learning conceptions of a large sample of students.

CONCLUSIONS

Higher education research has demonstrated that students' conceptions of learning influence their learning approaches and the quality of their learning outcomes. The accounting profession espouses the need for future professional accountants to achieve high quality learning outcomes, yet there is little evidence concerning the student learning process and the factors that influence learning approaches within the context of pre-qualification professional accounting education.

This paper explored the conceptions of learning of a small group of students who had recently completed the final qualifying examination of one of the professional accountancy bodies in Ireland. It reported that the categories of description regarding students' conceptions of learning identified in the higher education setting appear to be appropriate to capture the variation in the descriptions presented by the students in this study. Four students in the study have reproductive conceptions of learning, varying from a vague view of learning as the broadening of one's knowledge base to a more developed view of applying acquired knowledge in study and work situations. Three students, in different ways, view learning as centring on the construction of meaning, while one describes the more complex conceptualisation of learning, that of learning as changing as a person.

There is a pressing need for further research on student learning issues in the domain of professional accounting education. This type of research, which is from the perspective of the student, is necessary if the profession is serious about improving student learning approaches and learning outcomes so that future professional accountants are better prepared to deal with the challenges of their professional lives.

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'ACCOUNTING CONTROLS CAUSE SHORT-TERMISM': (EMPIRICAL) FACT OR (CONCEPTUAL) FICTION?

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ABSTRACT

This paper considers the following question: to what extent is the standard assumption in accounting literature that accounting-based controls cause short-termism an empirically established fact or is it simply conceptual fiction? The question is addressed by considering: (1) the nature of short-termism vis-à-vis myopia, (2) the tone of conceptual debate and the status of empirical evidence concerning the claimed (economic) causes of short-termism, and (3) the challenges facing researchers interested in examining this important topic. The paper concludes by suggesting that, unless and until evidence emerges to corroborate what seems at present an accusation without empirical foundation, we should, perhaps, as an academic community, be a little less accepting of the standard assumption that accounting controls cause short-termism.

INTRODUCTION

Short-termism, the favouring of the short term to the detriment of the long term (Mullins, 1991), is seen as an issue of significant concern for organisations. An obsession with short-term performance (Rappaport, 2005) stifles organisational competitiveness and damages firm value (Porter, 1992). Short-termism is blamed for economic under-investment, including the restriction of research and development (R&D) spending (Laverty, 1996). Given the seriousness of the problems associated with short-termism, understanding why firms and their managers might trade the long term for the short term is considered an important research agenda (Laverty, 2004).

Within the accounting literature, there is a considerable set of arguments that suggest that accounting-based controls cause short-termism (see, for example, Hayes and Abernathy, 1980; Johnson and Kaplan, 1987; Merchant, 1990; Ittner, Larker and Meyer, 2003).[1, 2] Kaplan (1984), for instance, has argued that 'the ability of the firm and the division to increase profits while sacrificing the long-term economic health of the firm is the fundamental weakness in the accounting model' (Kaplan, 1984, p. 411). For Johnson and Kaplan, accounting information attempts to measure performance over 'too brief a period, before the long-term consequences from making short-term decisions become apparent' (1987, p. 203). Dearden observed that 'the major problem with setting profit objectives and evaluating performance against those objectives is that one year is often too short a period to evaluate a task as complex as managing a profit center' (1969, p. 133). Ittner, Larcker and Meyer argue that financial measures encourage managers 'to sacrifice long-run performance to increase short-term financial results' (2003, pp. 725–726). Finally, Merchant and Van der Stede reason that '…one of the most significant problems accounting performance measures cause' is 'a tendency to make managers excessively short-term orientated, or myopic' (2007, p. 436).

The above quotations reflect or make explicit what appears to have become a standard assumption in accounting literature: accounting controls encourage a short-term orientation. The period covered by the quotations (1969–2007) demonstrates the enduring nature of this assumption. Moreover, as is often the case with orthodoxies, it is an assumption that has thus far largely been tacitly or even unquestioningly accepted rather than subject to scrutiny and analysis. The aim of the present paper is to assess the merits of the often implicit view that accounting-based controls cause a short-term orientation. The basic approach is to set extant conceptual argument alongside available empirical evidence. By adjudging the extent to which the former is substantiated by the latter, further insight may be gained into the nature and extent of the interplay between accounting controls and managers' time orientation. The analysis encompasses, in the sections to follow, consideration of: (1) the clarity of the extant conceptual argument regarding what it is accounting controls are being accused of – encouraging myopia or short-termism or both, (2) the tone and focus of the debate on short-termism (hereafter 'the debate'), (3) what the empirical research suggests in regard to the effects of capital markets and financial controls on short-termism, and (4) the problems facing researchers interested in advancing our understanding of how and why accounting controls might affect managers' time orientation. The fundamental question to be explored can be presented in the following terms: to what extent is the argument that accounting-based controls cause short-termism an empirically established fact or is it simply conceptual fiction?

FINANCIAL CONTROLS, SHORT-TERMISM AND MYOPIA

Analysis of the interplay between accounting controls and managers' temporal orientations requires, in the first instance, closer consideration of the terms 'short-termism' and 'myopia'. Within the accounting literature, these two terms tend to be used interchangeably to denote an emphasis on the near term; while the near term is commonly viewed as a one-year orientation normally consistent with the budgeting cycle (Van der Stede, 2000). Both terms may thus be considered to have a common temporal reference point. At the same time, it is possible to differentiate between 'short-termism' and 'myopia', particularly regarding how each may manifest in practice.

Generally accepted definitions of 'short-termism' focus on the notion of an inter-temporal trade-off: short-termism arises when potential long-term gains are sacrificed for the achievement of short-term results (see, for example, Laverty, 1996; Mullins, 1991). By contrast, we can conceive 'myopia' as meaning limitations of foresight which, however motivated, may nonetheless extrapolate into long-term value creation (Marginson and McAulay, 2008). In essence, therefore, whereas short-termism damages firm value in the long run, myopia need not do so.

Given the above, accusing accounting controls of encouraging short-termism makes for a more significant and more serious criticism than to accuse the same controls of simply promoting a near-term emphasis but not actions that favour the short-term to the detriment of the long-term. As suggested, definitive action to *forgo* the long term in favour of the short term does, it is argued, represent a dysfunctional 'temporal trap' (see, for example, Laverty, 1996, 2004; Mullins, 1991; Platt, 1973). A temporal trap occurs when choices that are best for the short term are not the same as those that are best for the long term (Platt, 1973). On the other hand, as 'there is no long-term without the short-term' (Van der Stede, 2000, p. 431), there may be occasions when an emphasis on the short term is required. For instance, recovery from poor performance may necessitate decisive short-term actions to ensure long-term survival. In this instance, limitations of foresight, or myopic behaviour, may actually benefit the firm. Generally, however, it seems self-evident that managers should take actions to secure both long-term value (Porter, 1992) and short-term results if the firm is to survive (Merchant, 1990; Simons, 1995, 2005). There is a need to balance concerns for long-term positioning, growth and change with concerns for short-term performance, profitability and survival (Laverty, 2004).

The points set out above suggest a need for conceptual clarity in terms of what accounting controls are being accused of encouraging. Is it short-termism or myopia or both? The more serious criticism implies that there may be a need to redesign the firm's management control system so that the potential for accounting controls to cause short-termism is minimised. The less serious criticism does not imply the need for such major change. Unfortunately, however, the literature in this area is currently unclear as to what accounting controls are indeed being accused of causing. The problem arises primarily because the term 'myopia' has sometimes been used to indicate both the concept of inter-temporal trade-off and limitations in the ability of individuals to foresee the future. Samuel, for instance, defines shareholder myopia as 'the tendency of shareholders to focus on the behavior of stock prices in the short-term as opposed to the long-term' and defines managerial myopia as 'improving earnings in the short-term at the expense of long-term growth' (2000, p. 494). On the other hand, Miller (2002) uses the phrase 'managerial myopia' to indicate cognitive limitations in relation to the temporal dimension of decision making, and, at the extreme, analyses the implications that arise when decision makers find themselves without the necessary information to assess even the present state (Marginson and McAulay, 2008). Merchant and Van der Stede suggest that myopia is 'when managers' orientations to the short-term become excessive – that is when they are more concerned with short-term profits or returns rather than with long-term value creation' (2007, p. 443). Undoubtedly, such a definition denotes an emphasis on the near term. At the same time, however, it fails to separate myopia from short-termism. Laverty, on the other hand, does attempt such a separation. He defines myopia as 'a characteristic of a decision that overvalues short-term rewards and undervalues long-term consequences' (2004, p. 950). Short-termism is defined as 'a systematic characteristic of an organisation that overvalues short-term rewards and undervalues long-term consequences' (Laverty, 2004, p. 950). These descriptions differentiate between the possible causes of a myopic vis-à-vis short-term orientation (decision characteristic versus systematic characteristic); but again, distinctions between how short-termism and myopia may become manifest in behavioural terms are not made clear.

Of course, short-termism and myopia are related phenomena (Marginson and McAulay, 2008). For instance, myopia may be a determinant of short-termism. Difficulties will thus undoubtedly arise at both a conceptual level and empirically whenever attempts are made to differentiate between these aspects of managers' temporally informed behaviours. The point is that, Laverty (2004) and Marginson and McAulay (2008) apart, such attempts have generally *not* been made. The resulting lack of nuance in the way the terms 'short-termism' and 'myopia' are generally treated in the literature is problematic in two respects. First, it is difficult to disentangle extant argument in order to compare and contrast the various criticisms levelled at accounting controls. This may not be so troubling, except that a second problem arises from the first: a lack of refinement in how the arguments are presented is likely to feed into research design and methodology. We will return to this point in subsequent sections. The section that follows reviews the conceptual arguments further in terms of the wider debate that has arisen about the causes and consequences of short-termism. Performance measurement and financial controls have often formed part of this wider 'economic debate' (Laverty, 1996). In an attempt to avoid confusion, it will be assumed that short-termism was meant wherever and whenever the literature refers to myopia.

FINANCIAL CONTROLS, SHORT-TERMISM AND THE WIDER 'ECONOMIC DEBATE'

Debate on the causes and consequences of short-termism has been particularly strong in the USA (see, for example, the work of Rappaport, 2005, 2006). The focus of this debate has been on capital market pressures and quarterly earnings targets (an accounting-based control) as the two main factors that cause managers to prioritise the short term to the detriment of the long term. Both are accused of fuelling what Laverty (1996) describes as economic short-termism.

Regarding accounting-based controls, contributors to the debate appear to apply several related lines of reasoning. First, the intrinsic nature of accounting is to measure the short term; managers take actions to maximise results shown by accounting information, ergo short-termism is the result (Marginson and

McAulay, 2008). Second, as accounting rules are generally conservative, performance reported by accounting metrics is thus negatively biased, and this provides an incentive to focus on the short term (i.e. be cautious) because long-term (i.e. more risky) gains are recognised late (e.g. Bushee, 1998, p. 306; van Rinsum and Hartmann, 2007, p. 8). Third, because accounting measures are typically aggregated, they provide incomplete or noisy signals of managerial effort (i.e. managerial actions are imperfectly reflected in accounting measures of performance (e.g. Fisher, 1992)). The result is short-termism because aggregated, incomplete measures allow managers to engage in behaviours that increase accounting numbers without adding value (Merchant, 1998).[3]

Implicit within these lines of reasoning is the well-known adage, 'what gets measured gets done': the short term is being measured by accounting controls, and thus the short term is the focus. Not surprisingly, therefore, the main response to the generally accepted orthodoxy has been not to dispute received wisdom or question its logic; rather, it has been to propose using additional, non-financial measures as a means of countering the potential for financial measures to cause short-termism (see, for example, Ittner and Larcker, 1997; Merchant and Van der Stede, 2007; Sliwka, 2002). The balanced scorecard philosophy in particular has spurred interest in the notion of combining *leading* non-financial measures and *lagging* financial performance indicators to optimise firm performance in the longer term (Kaplan and Norton, 1996; van Rinsum and Hartmann, 2007).[4] The basic argument is that as non-financial measures reflect investment in the longer term (e.g. in training, learning and growth), their use as leading indicators of performance will encourage a longer-term orientation and therefore counterbalance the short-termism caused by accounting-based controls (Ittner, Larcker and Randall, 2003; Merchant and Van der Stede, 2003).

The capital market is the other main 'culprit'. Two central arguments in this regard may be discerned from the literature. The first suggests that chief executives of listed companies are pressured into trading long-term performance for short-term results in order to meet capital market expectations, and especially in order to secure 'fluid and impatient capital' (Jacobs, 1991, p. 143; Porter, 1992). Following on from the first, the second argument is that, even if capital markets are not short-termist (i.e. they pursue long-term value), the problem remains because managers *believe* that they are under pressure from capital markets to achieve short-term performance results (Jacobs, 1991; Porter, 1992). As Rappaport argues, 'when executives destroy the [long-term] value they are supposed to be creating, they almost always claim that stock market pressure made them do it' (2006, p. 2).

This second argument continues to implicate capital markets but at the same time it changes the nature of the problem: from one of stock market myopia to *managerial* short-termism (Bushee, 1998; David, Hitt and Gimeno, 2001). Managers are short-termist because perceptions about capital market pressures encourage the trading of long-term performance for short-term results. In any case, by focusing on short-term results, senior executives can indicate to owners and investors that the firms' assets are being managed to maximum value (Laverty, 1996, p. 834). Such behaviour is helped by the fact that, because of information asymmetry, investors do not and cannot have complete information regarding a firm's long-term prospects. There is evidence of managers, particularly US managers, acting upon these information limitations (see, for example, Jacobsen and Aaker, 1993; Stein, 1989).

A cursory analysis of the business press reveals a seemingly unending interest in how to 'solve' the problem of short-termism.[5] In fact, the problem is viewed as getting worse; and getting worse because of recent firm-level and capital market developments. The developments include 'shrinking chief executive officer (CEO) tenure' (CEOs, fearing quick dismissal, need to show short-term improvements) and declining average stock-holding periods (now apparently less than one year), as well as the rise of hedge funds and private equity firms. These are deemed responsible for exacerbating the short-termism problem by introducing more short-term focus into the capital markets (see The Aspen Institute Business and Society Program, 2008, <http://www.aspeninstitute.org/policy-work/business-society/>, for a discussion).

There are other reports and commentaries and professional surveys, all of which focus on examining various facets of economic short-termism. One report, for example, attributes the problem in the UK to the effects of both taxation and takeovers (Moore, 1998). Another reports on the results of a survey into the 'practices and preferences of investment professionals' (CFA Institute, 2008). Taken together, they help to further illustrate the continuing tone of the debate: that economic factors related to capital markets and accounting-based controls cause managers to sacrifice potential long-term benefits for short-term gain. But what of the empirical evidence?

ACCOUNTING CONTROLS, CAPITAL MARKETS AND SHORT-TERMISM: THE EVIDENCE

This paper argues that extant empirical research contradicts rather than supports the accumulated conceptual argument. Regarding capital markets, for instance, several studies have sought to examine the extent to which firms may sacrifice 'sustained growth for short-term financial gain' (Rappaport, 2006, p. 44). Examples of such studies include Bizjak, Brickley and Coles (1993), Jarrell, Lehn and Marr (1985), Hansen and Hill (1991), Woolridge (1988) and Woolridge and Snow (1990). While the studies vary in how short-termism is operationalised, results are broadly consistent in suggesting significant positive returns are associated with the announcement of research and development projects. To this end, markets are rewarding management decisions that are consistent with long-term value creation (Marginson and McAulay, 2008). Overall, empirical research is consistent in suggesting that capital markets are *not* short-termist (Merchant and Van der Stede, 2007).

More importantly for this discussion, results relating to accounting controls are similarly contradictory. There is some evidence to support the idea that financial measures cause short-termism. Merchant, for instance, found a short-term orientation that 'was positively associated with the felt impact of financial controls' (1990, pp. 307–308). But Merchant also reports that 'the correlation between the impact-of-financial-controls variables and the long-term orientation variable are negative (*but barely statistically significant*)' (1990, p. 311, emphasis added). But Merchant's research is the exception: other studies report either a non-significant association involving accounting-based controls and the short term or indeed suggest that financial measures may be used to encourage managers to adopt at least a 'medium-term', if not a longer-term perspective (Abernethy, Bouwens and van Lent, 2007). Van der Stede found no support for a direct effect of financial control on short-termism and reported that 'the budgetary control style does not directly affect the business unit managers' time-orientation' (2000, p. 619). Marginson and McAulay (2008) found no evidence to suggest that reliance on accounting information as a performance indicator is associated with a short-term orientation. Marginson, McAulay, Roush and Van Zjl (mimeo) found no evidence to suggest that either the diagnostic or interactive use of financial controls causes short-termism.

Evidence presented by a few other studies suggests that the relationship between financial controls and short-termism may be complex and in need of careful interpretation. Building upon the modelling of the short-term effects of budget use proposed by Hopwood (1972), Otley (1978) reported that managers who adopted a mixed evaluation style that balanced budget and efficiency criteria 'tended to spend a greater proportion of their time on long-term planning (12 per cent as against 7.5 per cent; $p = .05$)' (1978, p. 131). This implies that managers who avoid a sole reliance upon accounting performance measures avoid short-termism. There may even be a cultural basis to short-termism. Based on their cross-national research findings, Chow, Kato and Merchant (1996) concluded that Japanese managers are not as short-termist as US managers when confronted with the same level of financial control. The authors' findings are consistent with the study by Coates, Davis and Stacy (1995) of UK, US and German companies. Culture, rather than financial controls, may thus provide an explanation for the origins of short-termism. Indeed, Chow et al.'s (1996) study may imply that, far from creating short-termism, financial controls may encourage actions that have long-term consequences in certain cultures. Visual inspection of the tables provided by Chow et al. (1996) shows that, relative to US managers: (1) Japanese managers' discretionary expenditure decisions are affected to a greater extent by financial controls; and yet (2) controls provide greater encouragement of new ideas for Japanese managers. In a study involving business unit managers from a 'West European country', Abernethy et al. (2007) found that top management use accounting return measures to shift managers' attention away from short-term activities to long-term activities.

Some evidence exists to suggest that firms use more non-financial measures when they have adopted more long-term-orientated strategies (i.e. innovator or prospector; Ittner, Larcker and Rajan, 1997; Said, HassabElnaby and Wier, 2003). Firms with a longer product life cycle also appear to make more use of non-financial measures (Said et al., 2003). However, what is not clear from these studies is how the use of non-financial measures might affect managers' inter-temporal choices. Furthermore, perhaps in keeping with the standard assumption of the literature, the argument that the use of non-financial measures helps to mitigate the short-termism caused by financial measures has yet to be examined empirically.

A STUBBORN ORTHODOXY OR DIFFICULTIES OF ANALYSIS?

Based on the research summarised above, what should we make of the argument that capital markets and financial controls are responsible for creating a short-term orientation? Basically, the empirics *do not* support the view that financial controls, or indeed capital markets, cause short-termism. To date, only Merchant (1990) has found any sort of association between financial controls and short-termism, but even this was, to use his words, 'barely statistically significant' (Merchant, 1990, p. 311).

Despite the force of evidence, however, it is clear that perceptions that economic factors (capital markets and accounting-based controls) *are* responsible for creating the short-term performance obsession (Rappaport, 2005) remain as strong as ever (see, for example, Bhojraj and Libby, 2005; Merchant and Van der Stede, 2007). The standard arguments have been re-affirmed on a number of occasions (see Jensen, 1986; Hansen and Hill, 1991; Rappaport, 1992, 2006). Indeed, the perception seems to be such that, rather than, say, finding better ways to undertake research in this area (we shall return to the significance of this point later), a not inconsiderable effort has been put into explaining how the contrary evidence still actually preserves the notion that economic factors are to blame, but in a more indirect way rather than directly.

Given the continuing tone of (conceptual) argument presented in both the professional and academic literatures, it seems almost heretical to suggest that economic factors do not cause short-termism. But, this heresy is supported by a crucial point: it really is only conceptual argument and anecdotal evidence that is proffered by the literature to support what Lundstrum describes as a 'stylized fact' (2002, p. 363). The conceptual arguments and lines of reasoning may be persuasive, but the arguments contrast sharply with the accumulating body of empirical evidence which, as pointed out above, challenges the notion that economic factors are to blame.

This leads us to an interesting question: how is it, as it seems to be, that predominant views can develop within fields of academic enquiry and possibly do so without empirical support? The current contrast between conceptual argument and empirical evidence also raises questions about what it may take to achieve a paradigm shift; in the present case at least towards some recognition that accounting based controls may not necessarily cause short-termism.

Interestingly, the current situation in accounting literature regarding the subject of financial controls and short-termism appears similar to what seems to have been happening of late in the field of economics regarding the subject of people's economic motives. Despite growing and significant evidence to the contrary, mainstream economics continues to hold on to a view that emphasises rationality, selfishness and independence of action as the basis of people's economic decision-making. Such a view stands in contrast to both experimental and empirical evidence, which suggests, for instance, that people tend to avoid immeasurable uncertainty, shift preferences over time, follow social signals, reciprocate generosity and forgo monetary rewards in punishing uncooperative behaviour (see Lunn, 2008 for a discussion). In other words, people are not necessarily as rational, or as 'utility maximising', as neo-classical economics would suggest; and neither are they, as a growing body of evidence discussed here seems to suggest, likely to adopt a short-term orientation because of the presence of accounting-based controls.

In light of the above, it seems imperative that the accounting literature at least considers the possibility that extant conceptual argument may be somewhat narrow in focus. It may also be even unhelpfully blinkered in its consideration as to what may cause inter-temporal bias in favour of the short-term. Further debate and research is required into what can be described as a ubiquitous and critical aspect of human endeavour. While the present paper confines itself to short-termism as manifest in a business context, the issue of inter-temporal choice and how such choices are made has implications far and beyond this rather narrow field of academic enquiry. But, turning back to a business context, it is, perhaps, important to recognise that research into the causes and consequences of short-termism is not easy; there are difficulties confronting those interested in contributing to our understanding in this area, and it is to a brief discussion of one key issue in particular – the operationalisation of short-termism itself – that we now turn.

Difficulties of Analysis?

A plausible and potentially legitimate response to the thesis of this study is to suggest that empirical research has thus far failed to properly capture the 'true' nature and extent of the relationship between accounting-based controls and short-termism. In other words, it could be argued that, to put it colloquially, the relationship is there; it just needs to be found.

Of course, it is incumbent on researchers to develop ways of analysis and research instruments that most faithfully represent the (latent) constructs of interest (see, for example, Bisbe, Batista-Foguet and Chenhall (2007) for a discussion). Regarding research into the phenomenon of short-termism, there could well be merit in the criticism that extant research does indeed fail to reveal how accounting based controls influence managers' inter-temporal choices. Laverty notes that 'the most far-reaching challenge to advancing the debate [on short-termism] consists in research approaches to observation and measurement of inter-temporal choice' (1996, p. 851). Inter-temporal choice reflects decision-makers' reference points in relation to time. However, time has rarely been adopted as a direct theoretical variable in studies of short-termism.

The lack of supporting evidence might thus be explained by what has been the use of proxies to measure short-termism. Two measures of short-term orientation have traditionally been adopted. The first uses Lawrence and Lorsch's (1967) instrument, which asks managers to assess the percentage of time devoted to working on issues that would impact the profit and loss statement within specified time periods. The second measure, adopted by Merchant (1990), is based upon a variable that measures the discouragement of new ideas, as represented by the effect of financial controls on expenditure for a range of discretionary items. Merchant (1990) adopted both measures and reported different results, with the measure of discouragement of new ideas supporting a statistical association with a short-term orientation whilst the results based upon the Lawrence and Lorsch (1967) measure did not. These different results for the different proxies suggest the possibility that the two instruments are measuring different phenomena (Laverty, 1996), with neither measuring short-termism directly. For instance, the instrument devised by Lawrence and Lorsch (1967) could be regarded as more likely to capture myopic behaviour rather than short-termism; the focus is on measuring the extent to which the short-term is emphasised rather than prioritised as an inter-temporal trade-off. Similarly, without evidence as to whether inter-temporal trade-off is the intention, it is difficult to determine, using Merchant's (1990) instrument, the extent to which potential curtailment of expenditure on discretionary items represents 'stealing from tomorrow' (Hodak, 2005, p. 118).

Recent measures of short-termism have either continued to adopt proxies or have sought to develop a more direct measure of short-termism. For example, Gibbs, Merchant, Van der Stede and Vargus (2004) used two separate single item measures to assess different aspects of short-termism: (1) the extent to which formula based performance measurement systems encouraged managers to focus on the short term; and (2) the amount spent on training. Laverty uses what he calls 'items suggested by non-survey-based-strategy literature' (2004, p. 953) dealing with 'problems similar to "underinvestment in the long-term"' (Laverty, 2004, p. 954) to develop instruments for measuring 'undervaluing the long-term' and 'temporal traps'. However, few details are provided as to the nature of these measures. Marginson and McAulay (2008) developed an instrument that asked managers to reveal the extent to which they were prepared to sacrifice long-term benefits in order to meet short-term performance targets. Marginson et al. (mimeo) have taken this approach further and developed a broader research instrument based on the notion of inter-temporal trade-offs to examine the relationship between performance measures and short-termism.

Of the various instruments that have thus far been used to measure short-termism, those which seek to capture decision trade-offs and temporal traps seem to offer a potentially more faithful representation of the notion of short-termism, as discussed above. This is because the instruments developed by Marginson and McAulay (2008) and Marginson et al. (mimeo) are at least designed to try to capture the extent to which the long term may be sacrificed for the short term (and vice versa). At the same time, however, neither these new instruments nor the more established measures (e.g. that designed by Lawrence and Lorsch, 1967) attempt to assess managers' time horizons. This is potentially limiting as, according to Jaques (1990), managers' time horizons vary with the responsibility time span of the role. 'Responsibility time span of the role' is the time required to complete the longest project or task assigned to the role. This time period is considered to increase with hierarchical level (Jaques, 1990), such that senior managers need to possess a different (longer) level of foresight than more junior managers. Jaques' (1990) argument may thus far lack empirical support. Nonetheless, the point is significant, in that it highlights how issues such as responsibility time spans and time horizons more generally serve to complicate the task of operationalising short-termism. The same may be said of the nature and extent of the interplay between myopia and short-termism.

As already suggested, short-termism and myopia can be clearly differentiated, and yet they are undoubtedly inter-linked. Complexities such as these serve to emphasise the point that, while it is undoubtedly important to investigate the subject of short-termism, doing so raises non-trivial issues concerning data collection and analysis. In turn, such difficulties of analysis raise an important point: empirical research to date may or may not be good enough to be convincing in the sense that anecdotal evidence and (conceptual) argument can and should be discarded in favour of empirical results. Undoubtedly, more needs to done. Accepting that short-termism, in itself, is an empirical fact (there seems little reason to doubt the existence of short-termism), one issue that appears ready for much more attention is the question as to what might cause a short-term orientation. Arguably, the evident contradiction between conceptual argument and empirical evidence concerning accounting-based controls as highlighted above reinforces the need to expand the search for the causes of short-termism beyond the oft-blamed economic factors.

EXPANDING THE SEARCH FOR THE CAUSES OF SHORT-TERMISM

In seeking to expand research in this area, a natural question arises: as the causes of short-termism may well be many and varied, where to begin? As it is, in terms of a business context at least, Laverty's (1996) analysis provides a potentially useful framework or starting point for interested researchers. Laverty (1996) advocates the inclusion of individual and organisational dimensions to the debate. Moreover, Laverty (2004) follows up his earlier conceptual analysis with evidence to suggest that management systems and organisational factors may 'play a role in the degree to which an organisation undervalues the long-term' (Laverty, 2004, p. 957). Specifically, his research suggests that temporal traps can be inherent in an organisation's 'culture, routines and processes' (Laverty, 2004, p. 958); to the extent that such aspects of organisational functioning may be more important than stock market pressures, perceived or otherwise, in causing short-termism (Laverty, 2004, p. 950). Marginson and McAulay (2008) provide evidence to suggest that individual and organisational factors in the form of role ambiguity (Kahn, Wolfe, Quinn, Snoek and Rosenthal, 1964) and the effects of social influence respectively may encourage a short-term orientation. An extensive review of how people make choices where there are short-term vis-à-vis long-term trade-offs (Frederick, Loewenstein and O'Donoghue, 2002) provides 'compelling evidence that human decision-makers' may considerably undervalue the long term in a 'wide variety of situations' (Laverty, 2004, p. 950). Given the results of these studies, future research may wish to expand the range of individual and organisational level factors that may contribute to a short-term orientation.

There are even alternative explanations for the short-termism that is associated with financial performance measures that might be examined. These include: (1) that organisational processes are implicated in the roles played by accounting performance measures (Burchell, Clubb, Hopwood, Hughes and Nahapiet, 1980); (2) that remuneration systems encourage 'managers to sacrifice long-run performance to increase short-term financial results, and thereby maximise their bonuses' (Ittner, Larcker and Meyer, 2003, pp. 725–726); and (3) that the ways in which accounting systems are used can give rise to differing and not necessarily negative outcomes (Bisbe and Otley, 2004). In short, taking account of both extant conceptual argument and empirical evidence as discussed above, there appears to be much that could and perhaps should be done to advance understanding as to: (1) the causes and consequences of short-termism, and (2) the nature and extent of accounting's role in shaping managers' inter-temporal choices. Short-termism is an issue of significant concern to both organisations and societies more generally.

CONCLUDING COMMENTS

The aim of this paper was to consider the following basic question: whether the standard assumption that financial controls cause short-termism represents an empirically established fact or whether it is little more than conceptual fiction. In presenting the arguments and analysis, the hope is that the present discussion will stimulate, not so much further debate and enquiry, but a much broader base to this debate and enquiry. The issue of short-termism remains topical and important. However, as Laverty suggests, despite the duration and prominence of the debate on short-termism, '… research conclusions that would guide managers are few and far between' (2004, p. 950).

One reason for this appears to be the focus of extant research. Extant analysis is overwhelmingly focused on the role of financial controls and capital markets in causing a short-term orientation. The lines of reasoning that underpin this focus appear, on the face of it, compelling and persuasive. At the same time, however, it seems that extant conceptual argument may be misplaced or lacking in some respect. I say this because empirical results provide little if any support for the established orthodoxy that economic factors, including accounting controls, cause short-termism. Whatever way short-termism has been operationalised, the results have largely been the same: no evident relationship between financial controls and managers' temporal orientations.

Given this, it seems that we may need to revisit the arguments and perhaps cogitate further on how accounting-based controls might relate to, and possibly affect, managers' temporal orientations. From the evidence to date, it seems particularly important that we move away from narrow explanations of short-termism defined in terms of 'the usual suspects', and towards broader explanations which consider that short-termism may originate from individual and organisational factors at least as much as from accounting-based controls and capital markets (Laverty, 1996; Marginson and McAulay, 2008). At the very least and to conclude, it may be argued that, unless and until evidence emerges to corroborate what seems at present an accusation without empirical foundation, we should, perhaps, as an academic community, be a little less accepting of the standard assumption that accounting controls cause short-termism. The enduring if often implicit argument that accounting-based controls cause short-termism seems, at present, more conceptual fiction than empirical fact.

NOTES

1. For the purposes of this paper, the term 'accounting-based controls' refers to financially orientated measures by which either or both managerial and organisational performance may be assessed. Examples of the types of accounting-based controls considered in this study include accounting ratios such as return on investment, as well as responsibility centre budgetary targets.
2. The criticism by Hayes and Abernathy (1980) is perhaps one of the sharpest and most widely publicised (Merchant and Van der Stede, 2007).
3. A further common line of reasoning lays the blame on the reward systems and financial bonuses that are often attached to accounting-based controls and the achievement of financial results as contributing factors in causing managers to be short-termist (see, for example, Ittner et al., 2003). Whilst acknowledging this point, the present analysis focuses on the role of accounting controls, of themselves, in shaping managers' temporal orientations.
4. According to Kaplan and Norton (1996), leading performance indicators are non-financial metrics that have predictive value for future lagging accounting results. For example, customer satisfaction metrics should help managers to identify future profit effects of current (investment in) customer satisfaction (van Rinsum and Hartmann, 2007).
5. See, for example, Martin Wolf, Why Regulators Should Intervene in Bankers' Pay, *Financial Times*, p. 11, 16 January 2008; Robert Bruce, Short-Termism: Short-Sighted Solution, *Accountancy Age*, p. 4, 12 February 2009.

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THE VALUATION EFFECTS OF CROSS-LISTING ABROAD FOR IRISH FIRMS*

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ABSTRACT

The number of Irish firms cross-listed on international exchanges remains low, relative to other countries. However, as a proportion of those firms eligible to list, Irish firms are, relative to others, more likely to list abroad. Surprisingly, Doidge, Karolyi and Stulz (2004) show that in 1997 US exchange-traded Irish firms are worth less than domestic Irish firms, a result at odds with what we might have expected and with the predictions of the legal bonding hypothesis. In this paper, I show that listing abroad, in both London (AIM listing only) and the US (both Level 1 and Level 2), does enhance the value of Irish firms. I find that cross-listing leads to an average 'within-firm' change in the value of Level 2 firms in the region of 19.65 per cent (using market-to-book of assets). As expected, the change in value experienced by Level 1 firms is smaller (14.93 per cent). Like Doidge, Karolyi and Stulz (2009), I do not find that an ordinary listing in London enhances value. Surprisingly, I find that Irish firms that trade on the Alternative Investment Market (AIM) in London experience the largest valuation gains from listing abroad of all cross-listed Irish firms (27.35 per cent using market-to-book of assets). This is surprising since these firms are subjected to the least onerous governance and regulatory requirements of all cross-listed Irish firms. Ultimately, due to data restrictions, I am unable to delve further into why the less regulated AIM firms enjoy a larger cross-listing premium relative to Level 2 firms. However, I offer some possible explanations consistent with some findings in the international cross-listing literature.

INTRODUCTION

During the 1990s, the United States became the most attractive location for an international listing of a firm's equity.[1] While the trends were impressive,

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Doidge et al. (2004) quote that of those non-US firms eligible to list in the US, only one in ten actually do so. (Claessens and Schmukler (2007) characterise those firms that list abroad, Barzuza (2005) and Barzuza, Smith and Valladares (2006) outline theoretical arguments (with empirical support) as to why others do not.) In contrast, of the number of Irish firms that are eligible to list in the US, a sizable majority does so. Thus it appears that Irish firms view an international listing in the US as potentially valuable for the firm. (In their survey of European corporate managers, Bancel and Mittoo (2001) report that 60 per cent view a foreign listing as potentially beneficial.) Surprisingly, in their study on the valuation effects of listing in the US, Doidge et al. (2004, Table 1, p. 219) document that cross-listed Irish firms (Level 2/3 issues to be specific) are worth in the region of 5 per cent less than their counterpart domestic firms[2] in 1997, a result at odds with the predictions of the legal bonding hypothesis,[3] and ultimately with the findings of Doidge et al. (2004). They find that Level 2 and 3 firms enjoy a cross-listing premium of 37 per cent relative to non-cross-listed firms.[4] In this paper I examine this issue further.

I begin by forming a panel of Irish firms that cross-list, either on the London Stock Exchange or on US exchanges, over the period from 1986 to 2007. A priori, I would expect that the greatest gains to listing abroad should accrue to Level 2 and 3 traded Irish firms. This line of reasoning is based on extending the theoretical model outlined by Doidge et al. (2004).[5] Since the 'cross-listing premium' (i.e. the valuation difference between cross-listed and non-cross-listed firms) is increasing in the 'host' level of investor protection, the greatest gains to listing abroad should accrue to firms that list on an exchange where the governance and regulatory requirements are most stringent (relative to the governance and regulatory requirements faced by other firms from the same country that list abroad on other exchanges). Since the Irish Stock Exchange adopts the UKLA's (United Kingdom Listing Authority) Listing Rules (with some exceptions and modifications), which are the rules that apply to firms listing on the London Stock Exchange (with many exemptions for non-UK firms), this suggests that the greatest gains to listing abroad should accrue to Irish firms that list on organised US exchanges as Level 2 and/or 3 American Depositary Receipts (ADRs).

Using a series of pooled and firm-fixed-effects regressions and proxying for firm value using Tobin's q (see below) and market-to-book of assets, my results suggest that Irish cross-listed firms are worth considerably more than non-cross-listed firms (what is commonly referred to as a valuation premium), and cross-listing tends to contribute to this valuation premium (what Doidge et al. (2004) call a cross-listing premium). Irish cross-listed firms tend to enjoy a 'valuation premium' over non-cross-listed firms, which range from 5.32 to 69.32 per cent (and is greatest for AIM-traded firms). The results from firm-fixed-effects regressions suggest that cross-listing abroad is associated with average 'within-firm' changes in value, which range from 1.90 per cent for Level 1 firms (see below) to a high of 21.61 per cent for AIM-listed firms. Level 2 firms tend to experience average 'within-firm' changes in value in the region of 7.29 per cent (19.65 per cent using market-to-book of assets). My results then suggest that in contrast to the results presented in Doidge et al. (2004), Irish Level 2 firms tend to enjoy a cross-listing premium. However, these firms still tend to underperform the average Level 2/3 cross-list (see Doidge et al., 2004, 2009). This result highlights the importance of examining the valuation effects of listing over time and not in any one specific year. Finally, while I find that listing on the main market of the London Stock Exchange does not lead to a 'cross-listing premium' for Irish firms, it does not destroy value, as is the case for the average foreign firm listing in London (see Doidge et al., 2009).[6]

My paper also contributes to the recent literature, which examines the valuation effects of cross-listing both within and across different international equity markets. While the Doidge et al. (2004) model of cross-listing implies that the cross-listing premium is increasing in the host level of investor protection (see endnote 5), the subsequent literature, which examines this hypothesis empirically, is mixed. While Clarkson, Nowland and Ragunathan (2006) and Bianconi and Tan (2007) support the theoretical predictions of the model, more recent studies have questioned these findings. First, Hope, Kang and Zang (2007) find that exchange-traded ADRs from emerging market countries enjoy a cross-listing premium, but in contrast to the predictions of the Doidge et al. (2004) model, the cross-listing premium is greatest for developed market firms. While their paper does not examine the valuation effects of cross-listing across markets, nevertheless their results do suggest that the cross-listing premium may not necessarily increase in investor protection. Second, Doidge et al. (2009) refute the findings of Bianconi and Tan (2007). Unlike them, Doidge et al. (2009) find that while the cross-listing premium is increasing in the host level of investor protection 'within-host country' (i.e. Level 2 and 3 ADRs enjoy the largest cross-listing premium, followed by Level 1 over-the-counter issues; Rule 144a firms (see below) do not enjoy a cross-listing premium), they do not find that this relation holds 'across countries' (i.e. Level 2 and 3 firms enjoy a cross-listing premium, while ordinary and depositary receipt listings in the UK do not). My results are, in part, consistent with the findings of Doidge et al. (2009). Like them, I find that cross-listing on the main market of the London Stock Exchange does not contribute to their 'valuation premia' over non-cross-listed firms. Surprisingly, listing on the less-regulated AIM market is associated with a 'cross-listing premium'. Doidge et al. (2009) are unable to examine the valuation gains to listing on London's AIM market since their sample period ends in 2005. Second, and unlike them, I don't find that the greatest gains to listing abroad accrue to Level 2 lists in the US. While I do document a statistically significant cross-listing premium for these firms, the premium is smaller than the cross-listing premia experienced by AIM-traded firms. The fact that AIM-traded firms enjoy the largest gains from listing abroad suggests that the valuation gains from listing abroad do not necessarily increase in investor protection across different host markets in the manner predicted by the legal bonding hypothesis.

Ultimately, due to data restrictions, I am unable to delve further into why the cross-listing premium for Level 2 firms is smaller than the premium experienced by AIM-listed firms in London. Thus, I can only conjecture that my results may be a result of the following. First, and perhaps consistent with Sarkissian and Schill (2009), the small cross-listing premium experienced by Level 2 firms (relative to

AIM and the average Level 2 or 3 list) is due in part to the fact that listing in the US is not their first cross-listing.[7] Sarkissian and Schill (2009) show that the greatest gains from listing abroad for firms with multiple international listings stem from their initial cross-listing. Second, in the case of AIM-traded firms, I hypothesize that the cross-listing premium is a function of several factors: recent evidence suggests that the cross-listing premium is a function of both the costs of initial listing (and the costs of ongoing governance and reporting requirements) and the ability of firms to finance their growth opportunities externally. The Alternative Investment Market (AIM) has proved to be highly successful in providing small (young) firms with a low-cost platform to facilitate their ongoing growth and expansion. Finally, given the ability of Irish listed firms to raise sizable amounts of capital on the AIM, this also suggests that the low level of governance and reporting obligations required of these firms may not be as important, since agency costs in these firms are likely to be low.

The paper proceeds as follows. In the next section, I outline the listing and reporting requirements of firms that cross-list in either the UK or the US. The data is outlined in Section 3. In Section 4, I present the empirical results. Section 5 concludes.

CROSS-LISTING IN THE UNITED STATES AND THE UNITED KINGDOM

In this section I outline how firms can cross-list in the United States (US) and the United Kingdom (UK). A non-US firm can list in the US, either as an ordinary list, or through a depositary receipt programme. There exist four distinct Amercian depositary receipt types, differing in terms of their trading locale and, more importantly, their ongoing disclosure and regulatory requirements. They are a Level 1 over-the-counter issue, a Level 2 and capital-raising Level 3 exchange-traded depositary receipt, and finally a private placement on Portal under Securities and Exchange Commission (SEC) Rule 144a.

A Level 1 issue is the simplest and cheapest way for non-US firms to access US and non-US capital markets. They trade over-the-counter and also on some exchanges outside of the US. Unlike Level 2 and 3 programmes, Level 1 firms are not obliged to reconcile their accounting procedures to US GAAP (Generally Accepted Accounting Practices) or to file periodic reports with the Securities and Exchange Commission. They require minimal SEC registration and are exempt from the SEC's reporting and accounting obligations under Rule 12g3-2(b). They provide instead an English translation of financial statements prepared according to home country accounting practices.

Level 2 and Level 3 capital raising programmes facilitate non-US firms that wish to list on an organised exchange in the United States. Level 2 issues are sponsored (created voluntarily by the international listing firm) public depositary receipts that do not provide for capital raising in the US. Level 3 provisions facilitate the issuance of new stock in the United States. Unlike Level 1 and Rule 144A firms, a Level 2 or 3 issue obligates the firm to adhere to sizable disclosure, regulatory and legal requirements. Specifically, an exchange-listed issue necessitates the firm to conform and adhere to US GAAP, become subject to greater Securities and Exchange Commission scrutiny and become subject to civil liability under Section 18 of the 1934 Securities and Exchange Act. In addition, the Sarbanes-Oxley Act of 2002 requires that CEOs (chief executive officers) and CFOs (chief financial officers) must personally certify that information in each year filed under Form 20-F is accurate and free from material misstatements and omissions, and that the financial statements and other financial information in the report fairly present, in all material respects, the issuer's financial position, results of operations and cash flows. Finally, a Level 2 or 3 issue exposes the firm to the scrutiny of 'Reputational Intermediaries'. These include financial analysts, underwriters, bond rating agencies, auditors and institutional investors.

A Rule 144A depositary receipt programme facilitates access to US and non-US markets through a private placement of sponsored depositary receipts to Qualified Institutional Buyers (QIBs). Like Level 1 issues, they do not require compliance with US GAAP or SEC registration. Under Regulation S, a company can offer a depositary receipt programme to non-US investors. It is not uncommon for firms to establish a Level 1 ADR in connection with a Rule 144A programme.

Firms can cross-list in London, either on the main market as a depositary receipt (DR) or ordinary issue or on the less regulated Alternative Investment Market (AIM). Like US lists, the different listing options require varying degrees of disclosure and regulation. Specifically, an ordinary listing on the London Stock Exchange requires clearance by the UK Listing Authority (UKLA). However, since the vast majority of firms that cross-list in the UK are not incorporated in the UK, the listing rules that seek to protect minority shareholders do not apply to these firms. Specifically, the combined code on corporate governance, adopted after the Cadbury Report in 1992 and the Hampel Report in 1998, do not apply to firms not incorporated in the UK. However, given the historical ties between the Irish and London Stock Exchanges, the case is different for Irish firms. The Irish Stock Exchange (formerly the Dublin Stock Exchange) was, until 1995, part of the privately run and regulated International Stock Exchange, whose most visible trading location was in London. Prior to 1973, the Dublin (Irish) Stock Exchange was one of the provincial arms of the London Stock Exchange, and from 1973 it, unlike others, retained an independent role, when others such as Manchester and Glasgow were absorbed fully into the London Stock Exchange. Prior to becoming independent of the London Stock Exchange, Irish firms could choose a Dublin-only or a joint listing in both Dublin and London. A number of the older Irish firms, such as Allied Irish Bank, Anglo Irish Bank, Bank of Ireland and CRH (Cement Roadstone Holdings) decided on a joint listing. For example, Anglo Irish Bank listed simultaneously in both Dublin and London on 22 February 1974. (See Table 1 for the exact listing dates.) Since 1995 the Irish Stock Exchange has operated independently of the London Stock Exchange. However, given the origins of the Irish Stock Exchange, it continues to adopt the UKLA Listing Rules, with some exceptions in its 'green pages'. Furthermore, firms listed on the Irish Stock Exchange (ISE) are required to disclose a statement of compliance with the

Combined Code on Corporate Governance in their annual report. Thus, as a result, a cross-listing on the London Stock Exchange is not associated with any substantive governance improvements for Irish firms.

Typically, non-UK firms trading as an ordinary list on the main market of the London Stock Exchange are, similar to US Level 2 and 3 issues, required to file financial information prepared in accordance with UK or US GAAP or International Accounting Standards (IAS). However, exceptions are made, provided the UKLA deem the existing standards 'protect investors' interests'. For example, the UKLA accept local accounting standards from Japanese firms. The requirements for firms that list on the main market via DRs are even less demanding than those for ordinary listings, in that financial information need not be prepared in accordance with IAS or UK or US GAAP. In this regard, a depositary receipt listing in London is similar to a Level 1 or Rule 144a type depositary receipt listing in the US, in terms of reporting and continuing obligations. All Irish firms trade on the main market as ordinary issues.

Finally, a firm can list on the London Stock Exchange on the Alternative Investment Market (AIM). Typically, the listing requirements on the AIM are minimal. For example, there is no prior trading requirement, no prior shareholder approval for transactions is required and admission documents are not prevetted by the Exchange or by the UKLA. Furthermore, there is no minimum market capitalisation and there is no minimum public float requirement. All that is required for a firm to be admitted to AIM is that it has the support of a nominated advisor ('Nomad') and subsequently the firm has to satisfy only the Exchange's weak disclosure duty.

DATA

I begin this study by sourcing an initial sample of Irish firms, both active and inactive (formerly dead stocks list on Worldscope), from Worldscope that were publicly listed in any year from 1980 to 2007. Worldscope is a financial database, provided by Thompson Reuters, which includes historical information on over 43,000 global public firms. These firms are drawn from more than 60 developed and emerging market countries. This initial sample is made up of 90 firms. From this initial list, I identify Irish firms that are cross-listed internationally using data from the London Stock Exchange (www.londonstockexchange.com) for United Kingdom lists, and the Bank of New York (www.adrbny.com), Deutsche Bank (www.adr.db.com), JP Morgan (www.adr.com), the New York Stock Exchange (www.nyse.com) and NASDAQ (www.nasdaq.com) for Irish firms cross-listed in the United States. For Irish firms listed on the London Stock Exchange, I classify firms either as having an ordinary listing on the main market or as having a listing on the less regulated Alternative Investment Market (AIM). For firms listed in the US, I identify the initial listing date in the US and the depositary receipt type. In the case of firms with more than one depositary receipt programme (e.g. Allied Irish Bank) or firms that transfer from one depositary receipt level to another, I classify firms in accordance with their first listing (in the US) and ignore any subsequent changes. This is a standard approach taken in the literature. To be included in the final sample, firms must meet a minimum data requirement. Firms that are cross-listed at some point in the sample are required to have financial data available at least one year before and one year after the year in which they initially cross-listed. Furthermore, all firms with two or fewer observations are eliminated from the study. Irish firms also traded on Germany's Neuer Market. For example, both Conduit and Trinity Biotech traded on the Neuer Market prior to its abolition. However, both firms are excluded from my analysis since they do not meet the minimum data requirements. Finally, I exclude all non-cross-listed financial firms, but, contrary to other studies, I do not exclude cross-listed financial firms. If I were to do so, I would lose three Irish banking firms listed in the US. Given the small size of my sample, it makes more sense to retain these firms.[8] After imposing these minimum data requirements, the final sample is made up of 17 firms cross-listed in the United Kingdom, 10 firms cross-listed in the United States and 36 domestic firms. The sample of cross-listed firms is presented in Table 1. Panel A contains Irish firms listed in the United States. These firms are also listed on the London Stock Exchange but, due to data availability, I am only able to examine the valuation effects of listing in the US for these firms. Panel B contains Irish firms listed on the London Stock Exchange but not listed in the US.

For each cross-listed firm, I present the date on which the firm initially listed on the Irish Stock Exchange (data is sourced from Irish Stock Exchange Annuals), the date and type of American Depositary Receipt level, and finally the date and type of UK list. Of the sample of firms listed on the London Stock Exchange, nine are listed as ordinary shares on the main market and five are listed on the AIM. Minmet also trade over-the-counter on the Norwegian Norges Fondsmeglerforbund (NOTC) and on the Berlin Borse, but is included as an AIM-traded firm in my final sample since this was their initial international cross-listing. In keeping with the standard convention in the literature, I identify a firm's initial cross-listing and ignore subsequent listings (unless the firm cross-delists). No Irish firm trades as a depositary receipt on the London Stock Exchange. Irish firms that trade in the US do so either as a Level 1 over-the-counter depositary receipt or as a Level 2 exchange-traded depositary receipt. Level 1 American Depositary Receipts trade as pink sheet issues over-the-counter on NASDAQ. In contrast, Level 2 (and Level 3) American Depositary Receipts trade on organised US exchanges (and NASDAQ). Irish firms also trade in the US as private placements under Rule 144a on Portal, but are excluded from our final sample as they fail to meet the minimum data requirements.

Before I proceed to the next section, a number of points evident from Table 1 are worth noting. First, all of the Irish firms cross-listed in the US do so after having initially listed on the London Stock Exchange. For example, Bank of Ireland and Allied Irish Bank listed in London in 1959 and 1967 respectively. Allied Irish Bank's initial listing in the US was in 1990. However, because Worldscope coverage of Irish firms only begins in 1980, I cannot examine the valuation effects of listing in the UK for these firms. In addition, Sarkissian and Schill (2009) show in their study of firms that have multiple lists on international exchanges that their initial (international) list is associated with the greatest valuation gains.

TABLE 1: SAMPLE DESCRIPTION

In this table, I outline the sample of cross-listed Irish firms. For each firm listed in either London (LSE) or in the United States (ADR), I present the year of (initial) listing on the Irish Stock Exchange (Irish Listing), US cross-listing level (ADR), date of US listing (ADR List), type of LSE listing (LSE) and date of London listing (LSE List). All data are sourced from the Irish Stock Exchange, London Stock Exchange, NASDAQ, New York Stock Exchange, Citibank, JP Morgan and the Bank of New York.

	Irish Listing	ADR	ADR List	LSE	LSE List
Panel A			*US-Listed Irish Firms*		
Allied Irish Bank	26/06/1967	Level 2	01/11/1990	Main Market	29/06/1967
Allied Irish Bank		144A/REG S	24/04/1998		
Anglo Irish Bank	22/02/1974	Level 1	01/10/1994	Main Market	22/02/1974
Arcon International	August 1980	Level 1	26/08/1998	Main Market	03/04/1995
Bank of Ireland	14/01/1959	Level 2	01/11/1995	Main Market	14/01/1959
CRH	05/02/1973	Level 2	23/07/1986	Main Market	05/02/1973
Glanbia	01/03/1988	Level 1	25/09/1998	Main Market	08/09/1988
Greencore Group	01/01/1991	Level 1	26/04/1999	Main Market	26/04/1991
Horizon Technology	06/12/1999	Level 1	2004	Main Market	06/12/1999
Kerry Group	01/10/1986	Level 1	2004	Main Market	19/04/1990
Waterford Wedgewood	January 1967	Level 2	28/01/1987	Main Market	01/12/1986
Panel B			*London-Listed Irish Firms*		
Abbey	18/05/1973	—	—	AIM	16/11/2004
Dragon Oil	01/01/1978	—	—	Main Market	31/05/1996
Elan	01/01/1989	Level 3	26/01/1984	Main Market	18/11/1993
FBD Holdings	01/01/1970	—	—	Main Market	04/05/1995
Fyffes	01/02/1981	—	—	Main Market	14/09/1987
IAWS Group	01/01/1988	—	—	Main Market	25/06/1992
IFG Group	28/12/1996	—	—	Main Market	17/07/2000
Kingspan Group	01/05/1989	—	—	Main Market	08/06/1995
McInerney Holdings	01/11/1971	—	—	Main Market	06/01/1997
Minmet*	12/04/1988	—	—	AIM	16/12/2005
Norish	01/03/1986	—	—	AIM	29/01/2001
Petroceltic	29/07/1994	—	—	AIM	26/09/2001
Providence Resources	09/09/1997			AIM	24/06/2005
United Drug	1989	—	—	Main Market	05/03/1992

*Minmet also trades over-the-counter on the Norwegian Norges Fondsmeglerforbund (NOTC) and on the Berlin Borse.

Consequently, if these results hold for Irish firms (which I cannot show), my empirical analysis, presented in the next section, suggests that listing in the US for these firms may not be as value-enhancing relative to firms that list initially in the US.

To measure firm value, I follow Doidge et al. (2004, 2009) and Hope et al. (2007) and employ Tobin's *q*. Mitton and O'Connor (2008) also use Tobin's *q* to proxy for value in their study of the relationship between investability (firms that become open to foreign ownership) and firm value. Tobin's *q* is defined as the book value of debt plus market capitalisation divided by the book value of assets. Ultimately, like others, my definition of Tobin's *q* deviates from the original definition by proxying for the market value of debt using its book value counterpart and measuring the replacement cost of assets as the book value of assets. For robustness' sake, I also use market-to-book of assets and Relative *q*. Like Gozzi, Levine and Schmukler (2008), I calculate Relative *q* as the value of each international firm divided by the average value of all domestic Irish firms.

I control for firm- and industry-related factors commonly employed in other studies using Tobin's *q* (see Doidge et al., 2004, 2009; Gozzi et al., 2008; Mitton and O'Connor, 2008). I use the average (geometric) sales growth (inflation-adjusted) over the last two years and global industry *q* to control for firm and industry growth respectively. Based on primary standard industry classifications, (the yearly) mean global industry *q* is calculated as the average *q* of all firms (Irish and international) within that classification.[9] I use log of sales (inflation-adjusted and in euros), rather than total assets (given the definition of Tobin's *q*) to control for firm size. Like King and Segal (2008), I also control for firm leverage and profitability. Leverage is calculated as total debt to assets, and profitability as earnings before interest and taxation to total assets. Tobin's *q* (and other proxies for firm value), sales growth, firm size, leverage and profitability are Winsorized at the 1 and 99 per cent tails of the distribution to remove the confounding effects of outliers.

EMPIRICAL RESULTS

This section presents the main results on cross-listing and firm value. First, I begin with univariate comparisons. The results are presented in Tables 2 and 3. I then proceed to panel regression estimates (pooled ordinary least squares and firm-fixed effects) of the effect of cross-listing on firm value.

Year-by-Year Valuation Comparisons

In Table 2, I compare the value of cross-listed to non-cross-listed firms in each year from 1986 to 2007. To compare the value of cross-listed firms to non-cross-listed firms, I do the following. For each set of cross-listed firms, I outline the mean value in each year. For each year, I calculate the mean (Diff) and median (Diff*) difference in value between cross-listed and non-cross-listed firms. Finally, for each year, I test whether the mean (and median) difference in value between the two groups is statistically significant using a t-test (z-test for medians). The final row of Table 2 contains the same calculations for the entire sample period.

The results from Table 2 suggest the following. First, cross-listed firms tend to be worth more than non-cross-listed firms. Specifically, using the mean difference

TABLE 2: COMPARISON OF CROSS-LISTED TO NON-CROSS-LISTED FIRMS IN CALENDAR TIME

The table outlines the average value of cross-listed firms in calendar time. Value is proxied using Tobin's *q*. Tobin's *q* is measured as ((book value of debt + market capitalization)/book value of assets), where book value of debt is measured as the book value of assets less the book value of equity. Level 1 and Level 2 denotes Irish firms listing in the US, either as a Level 1 over-the-counter issue or as an exchange-traded Level 2 issue. London (Ord.) and London (AIM) denote Irish firms listing on the London Stock Exchange either as an ordinary list on the main market or on the Alternative Investment Market (AIM). All data is sourced from the London Stock Exchange, NASDAQ, New York Stock Exchange, Citibank, JP Morgan and the Bank of New York. In the remaining columns, I outline the mean (Diff) and median (Diff*) difference between cross-listed and non-cross-listed firms in each calendar year in which firm-level data is available. The row labelled 'ALL' contains mean and median data for the entire sample period. Asterisks denote significance of t-tests and z-tests of the equality of means and medians, where***, ** and * indicate significance at the 1 per cent, 5 per cent and 10 per cent levels respectively.

	Level 1			Level 2			London (Ord.)			London (AIM)		
	Mean	**Diff**	**Diff***	**Mean**	**Diff**	**Diff***	**Mean**	**Diff**	**Diff***	**Mean**	**Diff**	**Diff***
						Panel A: Calendar Time						
1986	–	–	–	1.19	(0.12)	0.05	2.20	0.89	1.06	–	–	–
1987	–	–	–	1.75	0.56	0.65	2.29	1.10	1.20	–	–	–
1988	–	–	–	1.44	0.29	0.30	1.56	0.41	0.63	–	–	–
1989	–	–	–	1.26	0.00	0.17	1.45	0.19	0.20	–	–	–
1990	–	–	–	1.42	(0.04)	0.12	1.24	(0.22)	0.06	–	–	–
1991	–	–	–	2.09	0.94**	0.29	1.26	0.11	0.27	–	–	–
1992	–	–	–	1.87	0.82**	0.20	1.21	0.16	0.21*	–	–	–
1993	–	–	–	1.43	0.07	0.09	1.66	0.30	0.01	–	–	–
1994	–	–	–	1.45	0.09	0.12	1.76	0.40	0.12	–	–	–
1995	1.02	(0.34)	(0.21)	1.41	0.05	0.08	1.57	0.21	0.16	–	–	–
1996	1.02	(0.37)	(0.25)	1.47	0.08	0.06	1.91	0.52	0.24	–	–	–
1997	1.05	(0.46)	(0.35)	1.50	(0.01)	(0.01)	2.18	0.67*	0.28*	–	–	–
1998	1.35	(0.21)	0.05	1.42	(0.14)	(0.02)	1.67	0.11	0.14	–	–	–
1999	1.21	(0.05)	(0.02)	1.44	0.18	0.09	1.47	0.21	0.11	–	–	–
2000	1.14	(0.30)	(0.04)	1.34	(0.10)	0.13	1.53	0.09	0.27	–	–	–
2001	1.15	0.11	0.12	1.28	0.24	0.23*	1.44	0.40**	0.47	–	–	–
2002	1.45	0.44**	0.18*	1.17	0.16	0.07	1.18	0.17	0.01	1.86	0.85	0.82
2003	1.79	0.66*	0.35	1.12	(0.01)	0.06	1.46	0.33**	0.43*	4.74	3.61	3.73
2004	1.51	(0.01)	0.45	1.15	(0.37)	(0.15)	1.90	0.38	0.34	1.89	0.37	0.67
2005	1.49	0.28	0.48	1.13	(0.08)	(0.04)	2.03	0.82***	0.73***	2.23	1.02	0.09
2006	1.42	(0.49)	(0.06)	1.31	(0.60)	(0.25)	2.19	0.28**	0.35*	2.42	0.51	(0.25)
2007	1.43	0.30	0.31	1.25	0.12	0.13	1.66	0.53*	0.51	1.05	(0.08)	0.02
ALL	*1.37*	*0.13**	*0.13****	*1.40*	*0.16*	*0.06***	*1.66*	*0.42****	*0.35****	*2.23*	*0.99****	*0.18***

in value, Level 1 firms are worth more than domestic firms in 5 of the 13 years (7/13 for the median firm), 13 of the 22 years for Level 2 firms (17/22 for the median Level 2 firm), 21 of the 22 years for firms listed as ordinary shares on the main market of the London Stock Exchange (all 22 years for the median firm) and in all 6 years for the mean AIM firm (5 of the 6 for the median firm). Consistent with Doidge et al. (2004), exchange-traded Irish firms were worth less than their domestic counterparts in 1997. The mean (median) valuation differences are statistically significant in 2 (1) years, 2 (1) years, 6 (5) years, and 0 (0) years for Level 1, Level 2, London (ordinaries) and London (AIM) firms respectively.

Over the entire sample period, cross-listed firms, irrespective of the listing type, tend to be worth more than domestic, non-cross-listed firms. The average (median) Level 1 firm has a valuation premium of 0.13 (0.13) relative to non-cross-listed firms. The valuation premium for the average (and median) Level 2 firm is 0.16 (0.06). Interestingly, firms listed in London (both ordinary and AIM lists) experienced the greatest valuation premia. The average (median) valuation premium for ordinary London lists is 0.42 (0.35 for the median firm). For AIM-traded firms, the average valuation premium rises to 0.99 (the valuation premium for the median firm is 0.18). Although the evidence in Table 1 suggests that cross-listing is associated with higher firm values, the results should be interpreted with caution given that these univariate comparisons do not control for other factors that are likely to influence firm value (e.g. size, profitability, sales and industry growth, and leverage). I control for these factors in Section 5.

Even-Time Valuation Comparisons

Table 3 compares the value of cross-listed to non-cross-listed firms, not in calendar time but in event time. This analysis is designed to examine whether there is a significant change in value once the firms cross-list (possibly resulting in a cross-listing premium), or if valuation premia (which we document in Table 2) exist prior to firms cross-listing. To undertake this analysis, I denote the list year as '0', and compare cross-listed to non-cross-listed firms for the five years before to five years after listing. For each cross-listed sample of firms, I calculate the mean (or median) abnormal value of cross-listed firms relative to non-cross-listed firms in each event year. Abnormal value is calculated as the value of each cross-listed firm in each year less the mean (or median) value of non-cross-listed firms in the same year. In the remaining column, I calculate the Relative q of cross-listed firms in each event year.

Table 3 suggests that for both Level 1 and Level 2 US lists value tends to increase in the run-up to listing and falls off thereafter. The value of Level 1 and Level 2 firms appear to peak around the time of listing, but falls off thereafter, i.e. the mean (median) Level 1 firm is worth, relative to non-cross-listed firms, the most in the year immediately prior to listing. Level 2 firms tend to document a similar trend, and, interestingly, Level 2 firms (mean and median) tend to be worth less than non-cross-listed firms in almost all event time years. Level 1 firms only tend to be worth more than non-cross-listed firms in the years immediately

TABLE 3: COMPARISON OF CROSS-LISTED TO NON-CROSS-LISTED FIRMS IN EVENT TIME

This table reports the mean and median abnormal value of cross-listed firms relative to non-cross-listed firms in event time. The event window is defined as a seven-year period around the event year (i.e. Year 0 is the cross-listing year). Abnormal value is calculated as the mean (or median) of the value of cross-listed firms less the mean (or median) of non-cross-listed firms in the same year. Also reported is the mean-adjusted Relative *q*, where Relative *q* is calculated as the value of each cross-listed firm divided by the average value of all non-cross-listed firms in each year. Asterisks denote significance of t-tests and z-tests of the equality of means and medians, where ***, ** and * indicate significance at the 1 per cent, 5 per cent and 10 per cent levels respectively.

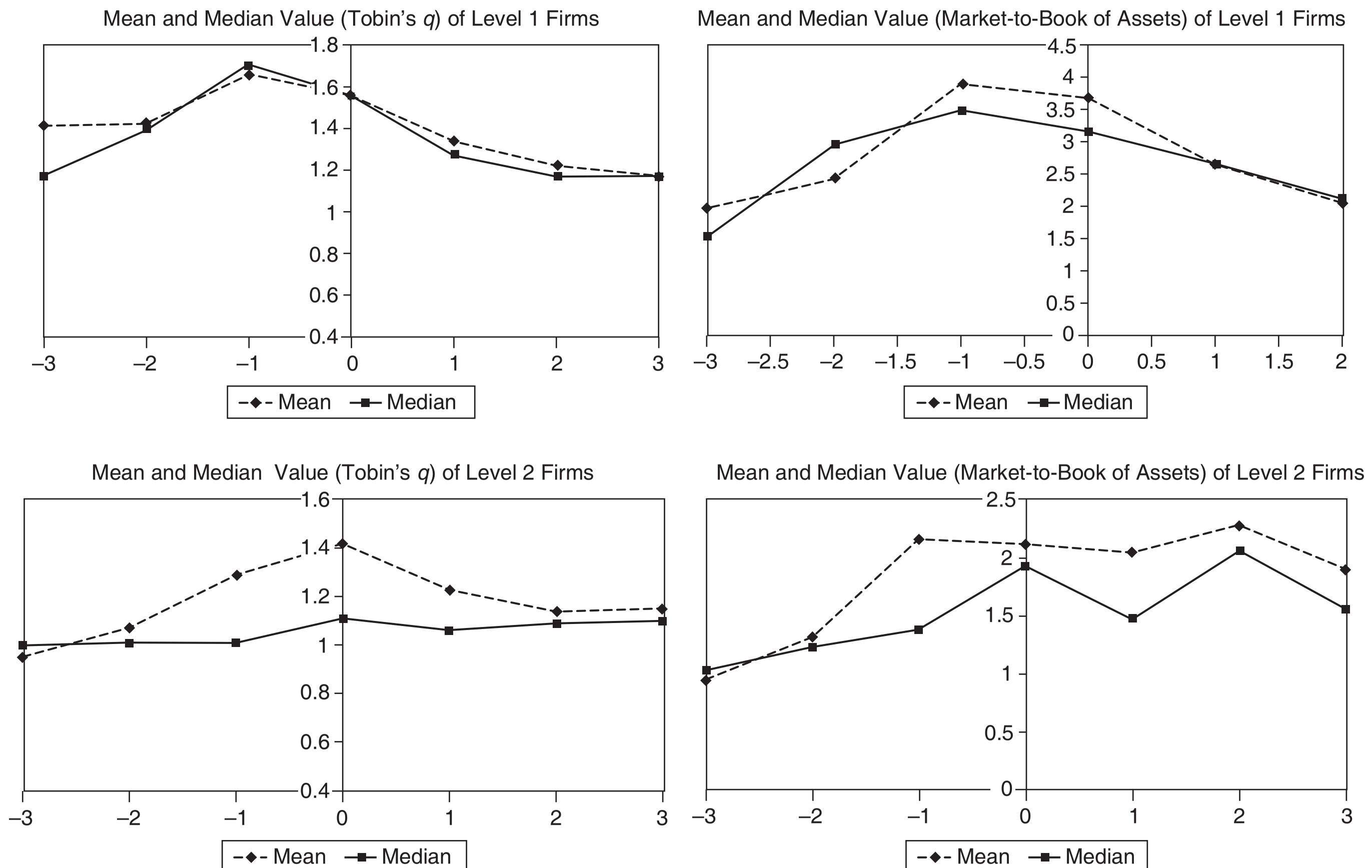
	Level 1			Level 2			London (Ord.)			London (AIM)		
	Mean *Ab.*	**Median *Ab.***	**Rel. *q***	**Mean *Ab.***	**Median *Ab.***	**Rel. *q***	**Mean *Ab.***	**Median *Ab.***	**Rel. *q***	**Mean *Ab.***	**Median *Ab.***	**Rel. *q***
–3	0.00	(0.08)	1.15	(0.46)***	(0.24)**	0.93	0.09	0.08	1.22	(0.42)***	(0.26)	0.96
–2	0.01	0.14	1.15	(0.34)	(0.23)	0.93	0.39	0.14*	1.39	(0.38)	(0.22)	0.97
–1	0.25***	0.45**	1.24	(0.12)	(0.23)	1.04	0.19	0.10	1.31	0.49	0.61	1.31
0	0.15	0.31*	1.05	0.01	(0.13)	1.13	0.08	0.13	1.14	0.47	(0.03)	1.50
1	(0.07)	0.02	1.05	(0.18)	(0.18)	0.98	0.22	0.18	1.22	0.84	(0.10)	1.74
2	(0.19)*	(0.08)	0.93	(0.27)**	(0.15)	0.91	0.14	(0.01)	1.14	(0.06)	0.06	1.20
3	(0.24)***	(0.08)	1.05	(0.26)**	(0.14)	0.88	0.21	0.02	1.21	1.58	1.74	2.64
Before	0.14	0.08	1.22	(0.41)	(0.28)	0.96	0.14	0.02	1.27	(0.24)	(0.23)	0.93
After	0.13	0.13	1.11	0.16	0.06	1.11	0.42	0.35	1.29	0.99	0.18	1.80
Diff	(0.01)*	0.05***	(0.11)*	0.57	0.34**	0.16	0.28***	0.33***	0.02***	1.23***	0.41**	0.87***

surrounding listing, apparently as a consequence of the increased value that they experience immediately prior to listing. The time-series behaviour of value for Level 1 and Level 2 lists suggests that Irish firms that cross-list in the US appear to 'time' their decision to list internationally. In contrast, firms that cross-list on the London Stock Exchange do not appear to time their listing internationally.[10] For both sets of firms, there does not appear to be a run-up in value prior to listing in the UK. For the average firm listing in the UK as an ordinary list, value (using Tobin's *q*) tends to increase after listing, and remains higher than the value on the list date in each post-listing year.[11] Finally, the average (and median) AIM list appears to perform similarly to the median ordinary list: value tends to increase once they trade in London, but begins to fall off thereafter.

I supplement Table 3 with a graphical depiction of firm value for cross-listed firms in event time as depicted in Figure 1. I present graphs for both Tobin's *q* and market-to-book of assets. Figure 1 again suggests that for Level 1 and Level 2 firms value tends to peak around the time of listing and falls off thereafter.[12] London lists (ordinary (median) and AIM (average and median)) tend to experience an immediate appreciation in value once they list, subsequently followed by a fall-off. The time-series behaviour of value for Irish Level 1 and Level 2 firms is consistent with the time-series patterns of Tobin's *q* for firms that internationalise as reported by Gozzi et al. (2008), firms that cross-list as reported by Doidge et al. (2009) and King and Segal (2008), and for firms that become investable, as reported by Mitton and O'Connor (2008).[13] I supplement this analysis by following King and Segal (2008) and also proxy for firm value using price-to-earnings (PE) and enterprise value to EBITDA (earnings before interest, taxation, depreciation and amortization). The time-series behaviour of both valuation metrics around the time of cross-listing is presented graphically for each set of cross-listing firms in Figure 2. In general the trends are similar to those depicted by Tobin's *q* and the market-to-book of assets.

In the remaining columns of Table 3, I outline the value of cross-listed firms relative to the average non-cross-listed firms in event time. In general, the analysis using Relative *q* suggests that the change in value experienced by cross-listed firms around the time of listing is experienced by the cross-listing firm alone. For example, in line with the average (and median) absolute value of Level 1 and Level 2 firms, mean-adjusted Relative *q* experiences an appreciation prior to listing, followed by depreciation thereafter. Finally, and more revealing, is the fact that cross-listed firms tend to be worth more than non-cross-listed firms even prior to becoming cross-listed. Level 1 and London ordinary firms are worth more than non-cross-listed firms in every pre-listing period. Level 2 firms are only worth more than non-cross-listed firms in the years immediately around the time of listing (as a result of the appreciation in value that they experience around the time of listing). AIM firms become more valuable than non-cross-listed firms one year prior to listing, and remain more valuable thereafter. The fact that cross-listed firms tend to be worth more than non-cross-listed firms suggests that cross-listing may not have a causal effect on firm value. In Section 5, I seek to establish the causal effect of listing on firm value using a series of pooled and firm-fixed-effects regressions.

FIGURE 1: VALUE OF CROSS-LISTED FIRMS IN EVENT TIME (USING TOBIN'S *Q* AND MARKET-TO-BOOK OF ASSETS)



Continued

FIGURE 1: CONTINUED

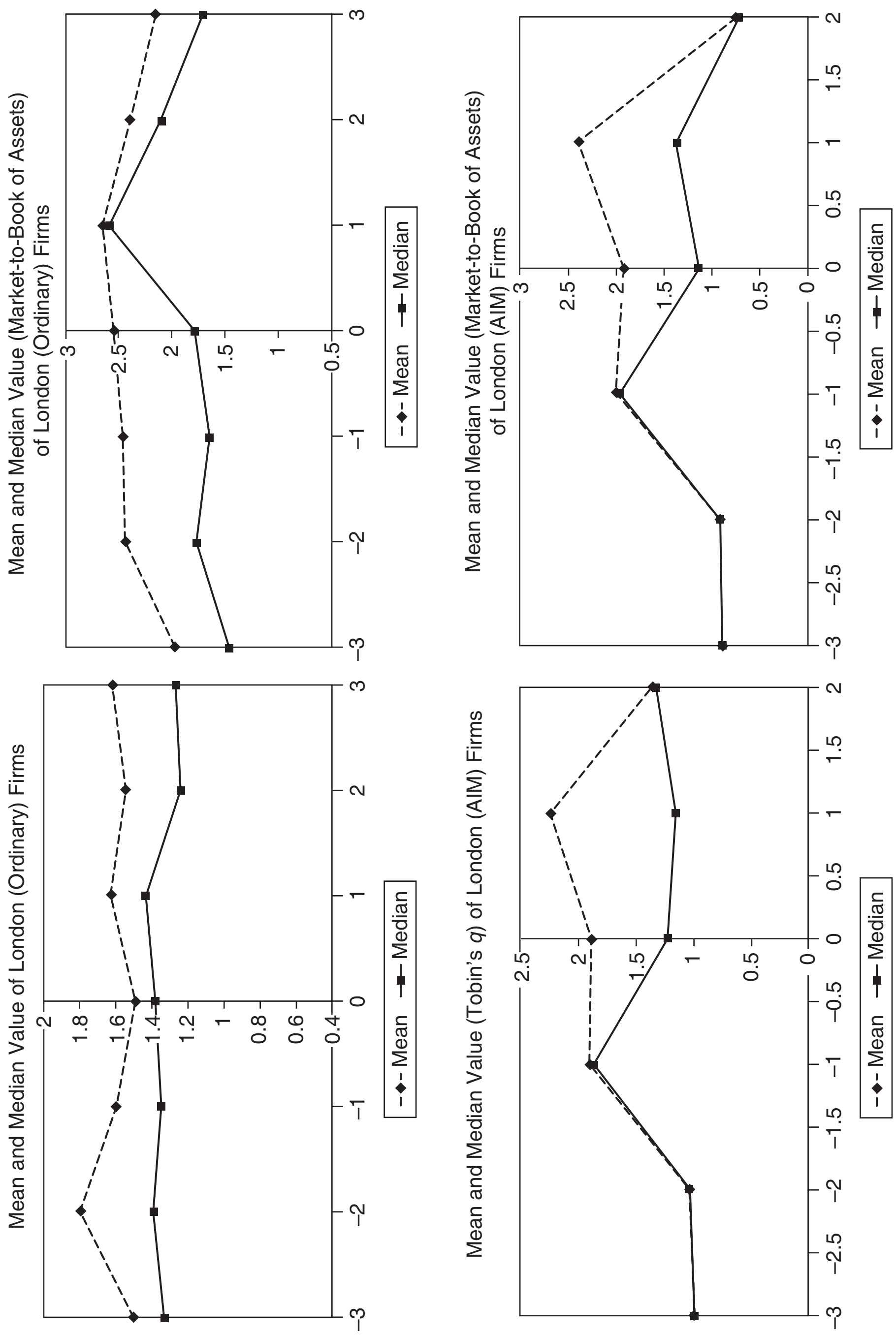
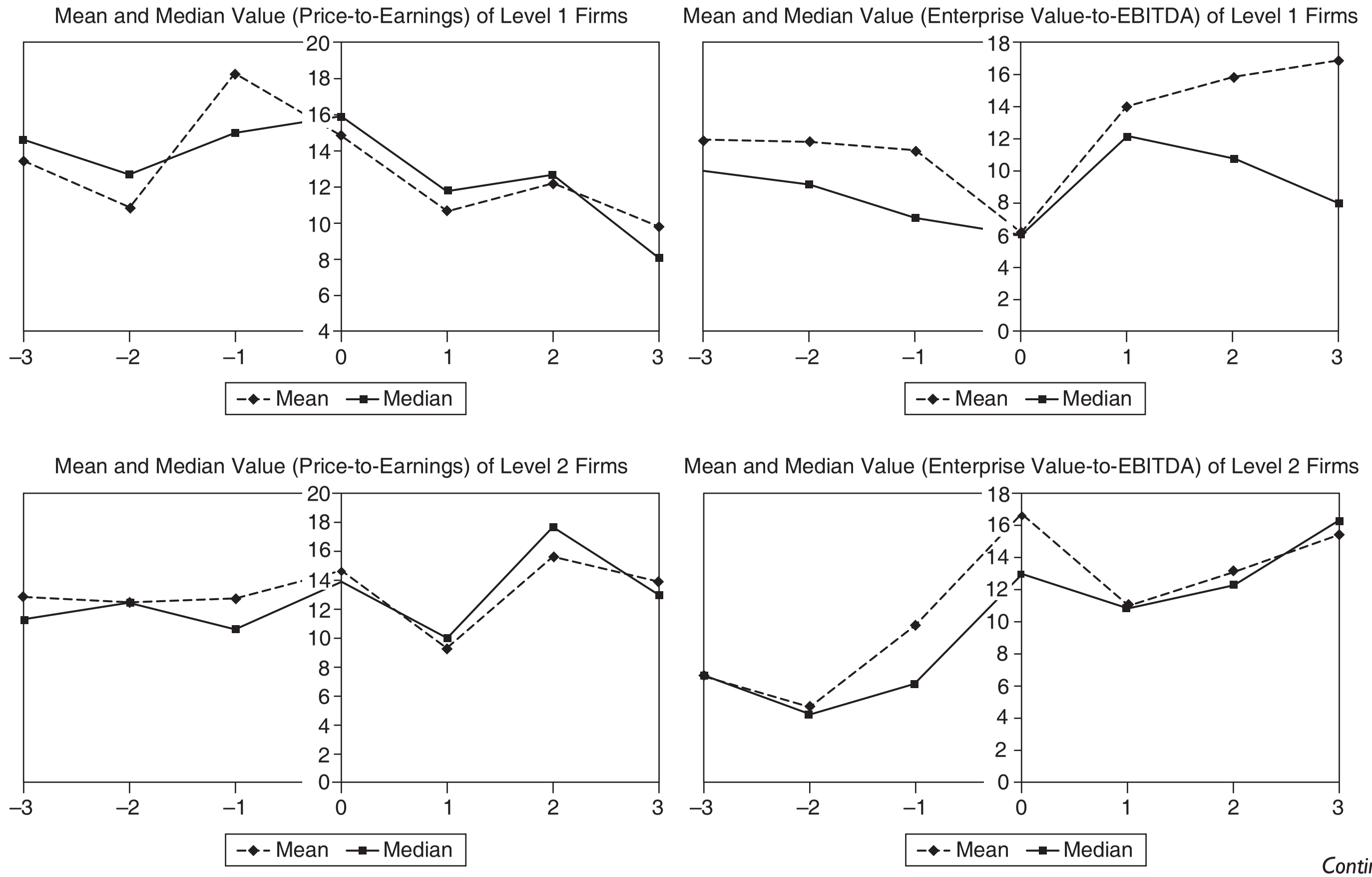
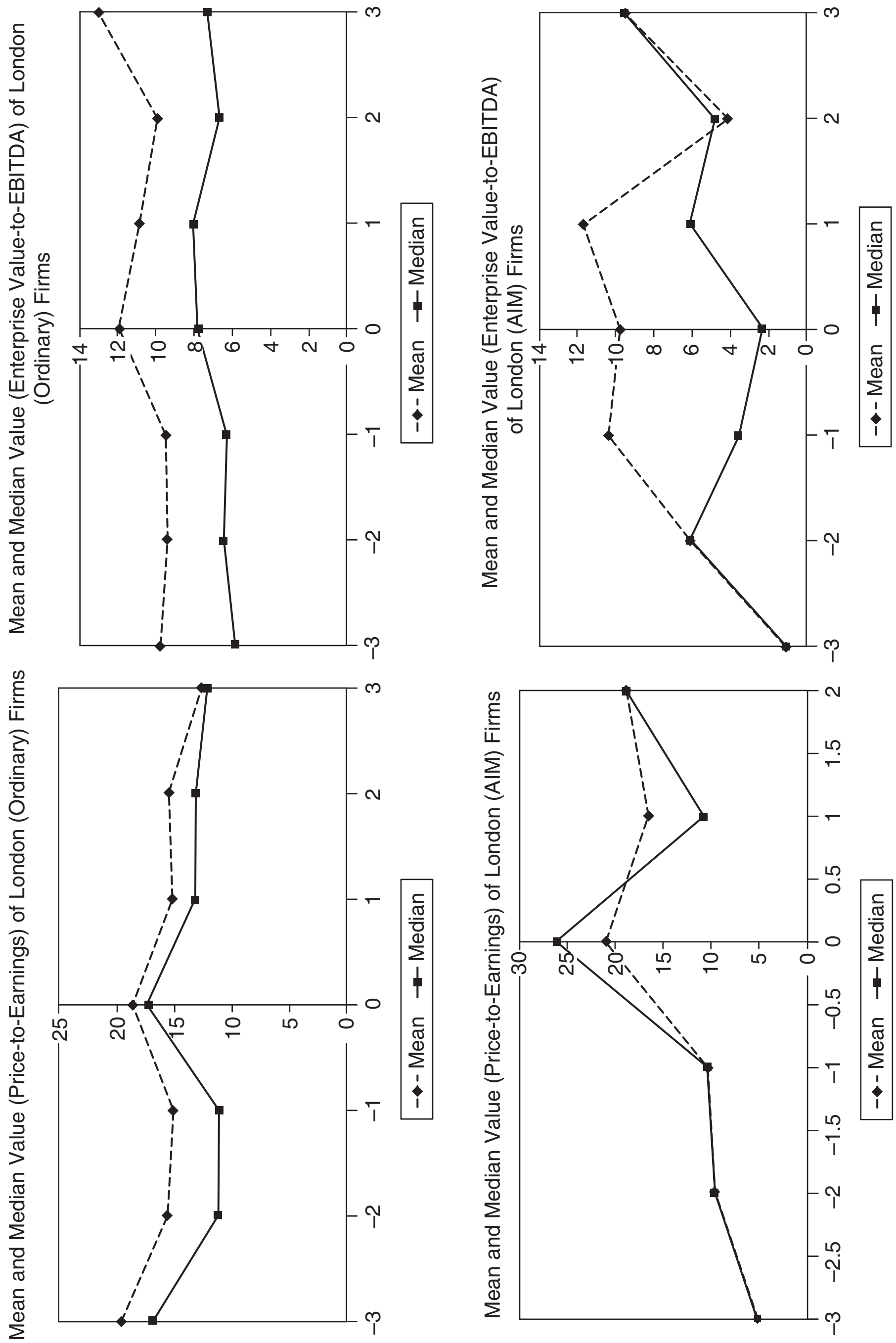


FIGURE 2: VALUE OF CROSS-LISTED FIRMS IN EVENT TIME (USING PRICE-TO-EARNINGS AND ENTERPRISE VALUE TO EBITDA)



Continued

FIGURE 2: CONTINUED



The last three rows of Table 3 summarise the value of cross-listed firms relative to non-cross-listed firms in the pre- and post-listing periods. On a mean- and median-adjusted basis, Level 2 and both sets of London-listed firms tend to worth more than non-cross-listed firms, on both an absolute basis (see Relative *q*) and also relative to the pre-listing period. In turn, the mean and median differences tend to be statistically significant (with the exception of the mean Level 2 firm). In contrast, Level 1 firms tend to be worth less, on an absolute (mean firm) and relative basis. However, we should be cautious in interpreting these figures. While the differences are statistically insignificant, the changes in value may well be driven by factors other than cross-listing. In the next section I control for these other factors. Level 1 firms tend to be worth less, although the average and median differences are statistically insignificant.

Regression Estimates

In this section I examine the relationship between cross-listing and firm value, conditional on firm and industry controls. Specifically, I estimate the following panel (pooled ordinary least squares) regression:

$$q_{it} = a + \beta_1 L1_{it} + \beta_2 L2_{it} + \beta_3 London(Ord)_{it} + \beta_4 London(AIM)_{it} + \beta_5 X_{it} + Year_t + \varepsilon_{it} \qquad (1)$$

Where q_{it} is Tobin's *q*, $L1_{it}, L2_{it}, London(Ord)_{it}, London(AIM)_{it}$ are standard 0/1 dummy variables that correspond to listing over-the-counter as a Level 1 issue, Level 2 exchange-traded depositary receipt, a direct 'ordinary' list, or an Alternative Investment Market (AIM) listing on the London Stock Exchange. Each dummy variable is 1 on the year of listing, and 1 thereafter. $Year_t$ are year-specific time-fixed effects and X_{it} are firm and industry control variables (size, profitability, leverage, and firm and industry growth) that influence firm value. These variables were defined in Section 3.

The coefficient estimates corresponding to Equation (1) are presented in Table 4. Below each coefficient estimate, I present t-statistics (absolute value) in square brackets which are calculated using standard errors clustered at the level of the firm. Clustered standard errors are, by construction, also robust to heteroscedasticity (see Petersen, 2009; Rogers, 1993). Finally, given the small sample size, I bootstrap the standard errors. Bootstrapping is based on building a sampling distribution for a statistic by resampling from the data at hand. Given the panel nature of my data, each replication is a bootstrap sample of firm clusters (instead of individual firm-year observations) (see Petersen (2009) and Cameron, Gelbach and Miller (2007) for a discussion of the relevant issues). The bootstrapped standard errors are generated using 200 replications. Efron and Tibshirani (1986) suggest that for bootstrapped standard errors, 50–200 replications are sufficient.

In column 1 of Table 4, I regress Tobin's *q* on the cross-listing dummies alone, with time (year) fixed effects included. The coefficient estimates suggest that cross-listing firms tend to be worth more than non-cross-listed firms. Level 1, Level 2, London (Ord.) and London (AIM) have on average a Tobin's *q* that is 0.086, 0.066, 0.360 and 0.867 higher than non-cross-listed firms, respectively.

TABLE 4: REGRESSION ESTIMATES

This table reports coefficient estimates from the following pooled ordinary least squares regression:

$$q_{it} = a + \beta_1 Level1_{it} + \beta_2 Level2_{it} + \beta_3 London(Ord)_{it} + \beta_4 London(AIM)_{it} + \beta_5 X_{it} + Year_t + \varepsilon_{it}$$

A full set of year-fixed effects are included but not reported. Firm value is measured using Tobin's *q*. Level 1 and Level 2 are dummy variables corresponding to a firm's listing in the US. London (Ord.) and London (AIM) are dummy variables corresponding to a firm's listing on the London Stock Exchange either as an ordinary list on the main market or on the Alternative Investment Market (AIM). Firm size is measured as the log of annual sales in real US dollars. Firm growth is measured as the (geometric) average real growth in sales over the prior two years. Global industry *q* is calculated as the average *q* of all global firms within each industry classification. Firm leverage is total debt to total assets, and profitability is defined as Earnings Before Interest and Taxation (EBIT) to Total Assets. I report t-statistics (absolute value) in square brackets. The t-statistics are calculated using bootstrapped standard errors (200 replications), whereby each replication is a bootstrap sample of firm clusters (given the panel nature of the data). # Obs. is the number of observations and R^2 is the R-Squared. Statistical significance is denoted by ***, ** and * for the 1, 5 and 10 per cent levels respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
Level 1	0.086	0.123	0.105	0.156	0.084	0.105
	[0.86]	[1.03]	[0.88]	[1.31]	[0.70]	[0.88]
Level 2	0.066	0.116	0.109	0.237***	0.184**	0.207**
	[0.87]	[1.45]	[1.38]	[2.63]	[2.04]	[2.25]
London (Ord.)	0.360***	0.367***	0.350***	0.388***	0.377***	0.378***
	[5.80]	[5.56]	[5.30]	[5.88]	[5.71]	[5.73]
London (AIM)	0.867***	0.794***	0.741***	0.577***	0.640***	0.642***
	[5.13]	[4.54]	[4.26]	[3.17]	[3.56]	[3.57]
Global *q*		0.349***	0.379***	0.322***	0.307***	0.292***
		[3.00]	[3.30]	[2.78]	[2.79]	[2.54]
Firm growth			1.00***	1.07***	1.09***	1.04***
			[3.37]	[3.61]	[3.76]	[3.54]
Firm size				–0.049***	–0.057***	–0.064***
				[2.95]	[3.35]	[3.76]
Firm leverage					0.632***	0.665***
					[3.51]	[3.65]
Firm profit						0.327
						[1.49]
Time dummies	Yes	Yes	Yes	Yes	Yes	Yes
Firm dummies	No	No	No	No	No	No
# Obs.	574	536	536	536	536	536
R^2	0.177	0.190	0.208	0.221	0.240	0.243

However, these 'valuation premia' are only statistically significant for both sets of London-listed Irish firms. In the remaining columns of Table 4 I sequentially augment the specification employed in column 1 with firm and industry controls. Column 6 contains the results where all firm and industry controls are included.

I find that while the inclusion of firm and industry controls reduces the coefficient estimate on the AIM dummy, they fail to reduce the statistical significance on both the London (Ord.) and London (AIM) dummy variables. In all six specifications, the coefficient estimates on the London (Ord.) and London (AIM) dummy variables remain large and statistically significant. I find that once I control for firm and industry controls, in line with the analysis presented in Table 2, Level 2 firms tend to be worth more than non-cross-listed firms. In contrast, Level 1 firms tend to be valued on a par with domestic firms. Finally, in all specifications the firm and industry controls are of the correct sign, and remain largely statistically significant. Firm value increases with firm and industry growth. Small, profitable and levered firms tend also to be worth more.

In Table 8, I calculate the magnitude of the 'valuation premia' between cross-listed and non-cross-listed firms using the coefficient estimates from Table 4. Relative to the overall average q of 1.24 for non-cross-listed firms, the coefficient estimates suggest that the 'valuation premia' for London (Ord.) and London (AIM) firms range from 28.23 to 31.29 per cent and from 51.66 to 69.92 per cent respectively. Level 2 firms enjoy an average valuation premium over non-cross-listed firms of 12.35 per cent.

The results from the pooled ordinary least squares regressions suggest that all cross-listed firms, bar Level 1 firms, enjoy substantial valuation premia over non-cross-listed firms. Furthermore, the valuation premia tend to be greatest for London-listed firms. However, these results do not establish a causal relationship between cross-listing and firm value. The positive coefficient on the cross-listing dummies may simple indicate that those firms that cross-list are those firms with already higher valuations, i.e. those firms that cross-list self-select, as opposed to being randomly assigned into cross-listing. In fact, the Relative q statistics outlined in Table 2 suggest that this is the case. Furthermore, the coefficient estimates could also be affected by (unobserved) heterogeneity that may not have been adequately captured in the pooled ordinary least squares regressions. To address these concerns, I focus on within-firm changes by re-estimating Equation (1), but now with firm-fixed effects included (to capture the unobserved heterogeneity). Consequently, I estimate the following two-way fixed effects model:

$$q_{it} = a + \beta_1 L1_{it} + \beta_2 L2_{it} + \beta_3 London(Ord)_{it} + \beta_4 London(AIM)_{it} + \beta_5 X_{it} + Firm_i + Year_t + \varepsilon_{it} \quad (2)$$

Where $Firm_i$ are firm-fixed effects and all other variables are as explained in Equation (1). In order to estimate the causal effect of listing using firm-fixed effects, I must assume that the unobservables are time-invariant (and, thus, the inclusion of firm-fixed effects adequately controls for unobserved attributes that may influence firm value) and, second, that the unobservables do not have a causal role in precipitating cross-listing (see Li and Prabhala, 2007 for a

TABLE 5: FIRM-FIXED-EFFECT ESTIMATES OF THE IMPACT OF CROSS-LISTING ON THE VALUE OF IRISH FIRMS

This table reports coefficient estimates from the following panel data regressions with firm-fixed effects:

$$q_{it} = a + \beta_1 Level1_{it} + \beta_2 Level2_{it} + \beta_3 London(Ord)_{it} + \beta_4 London(AIM)_{it} + \beta_5 X_{it} + Firm_i + Year_t + \varepsilon_{it}$$

A full set of year-fixed effects are included but not reported. Firm value is measured using Tobin's *q*. Level 1 and Level 2 are dummy variables corresponding to a firm's listing in the US. London (Ord.) and London (AIM) are dummy variables corresponding to a firm's listing on the London Stock Exchange either as an ordinary list on the main market or on the Alternative Investment Market (AIM). Firm size is measured as the log of annual sales in real US dollars. Firm growth is measured as the (geometric) average real growth in sales over the prior two years. Global industry *q* is calculated as the average *q* of all global firms within each industry classification. Firm leverage is total debt to total assets, and profitability is defined as Earnings Before Interest and Taxation (EBIT) to Total Assets. I report t-statistics (absolute value) in square brackets. The t-statistics are calculated using bootstrapped standard errors (200 replications), whereby each replication is a bootstrap sample of firm clusters (given the panel nature of the data). # Obs. is the number of observations and R^2 is the overall R-Squared. Statistical significance is denoted by ***, ** and * for the 1, 5 and 10 per cent levels respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
Level 1	-0.108	-0.044	-0.026	0.107	0.124	0.103
	[0.92]	[0.30]	[0.18]	[0.73]	[0.86]	[0.93]
Level 2	0.140	0.128	0.088	0.057	0.092	0.107
	[1.17]	[1.02]	[0.73]	[0.46]	[0.75]	[0.90]
London (Ord.)	0.003	-0.006	0.013	0.091	0.057	0.029
	[0.04]	[0.07]	[0.15]	[1.06]	[0.47]	[0.34]
London (AIM)	0.645***	0.657***	0.568***	0.375**	0.368**	0.279*
	[3.98]	[3.93]	[3.42]	[2.18]	[2.15]	[1.66]
Global *q*		0.130	0.165	0.299**	0.342***	0.254*
		[1.00]	[1.27]	[2.20]	[2.53]	[1.91]
Firm growth			0.922***	1.16***	1.07***	0.894***
			[3.70]	[4.57]	[4.23]	[3.58]
Firm size				–0.149***	–0.112***	–0.114***
				[3.63]	[2.67]	[2.85]
Firm leverage					–0.766***	–0.535**
					[3.36]	[2.35]
Firm profit						0.930***
						[4.72]
Time dummies	Yes	Yes	Yes	Yes	Yes	Yes
Firm dummies	Yes	Yes	Yes	Yes	Yes	Yes
# Obs.	574	536	536	536	536	536
R^2	0.109	0.118	0.151	0.129	0.097	0.102

discussion). Finally, in order to determine the statistical significance of the firm-fixed effect estimates, I bootstrap the standard errors, as before.

Table 5 presents the coefficient estimates of Equation (2) with t-statistics (absolute), adjusted for heteroscedasticity as in White (1980), presented under the coefficient estimates in square brackets. In column 1, I regress Tobin's *q* on the cross-listing dummies alone, with firm- and time-fixed effects included. In subsequent columns, controls variables are added in turn. Specification (5) contains the coefficient estimates with all controls included. The primary difference between Tables 4 and 5 is that once we control for unobserved heterogeneity, the coefficient estimates on the Level 2 and London (Ord.) dummies are much smaller, and lose their statistical significance. In contrast, the coefficient estimates on the London (AIM) dummy remains large, and maintains its statistical significance. The coefficient estimate on the Level 1 dummy ranges from negative to positive, but is statistically insignificant in all specifications. These results suggest that cross-listing on international exchanges only causes value for Irish firms that list on the Alternative Investment Market of the London Stock Exchange. In contrast, cross-listing does not contribute to the valuation premia enjoyed by Level 2 and London (Ord.) lists. In summary, only AIM lists enjoy a 'cross-listing premium'.

In the remaining rows of Table 8, I calculate the magnitude of the 'cross-listing premium' for all cross-listing Irish firms. Based on the coefficient estimates presented in Table 3, cross-listing abroad leads to an average 'within-firm' change in Tobin's *q* in the region of 0.03, 0.10, 0.03 and 0.48 for Level 1, Level 2, London (Ord.) and AIM traded firms respectively. Relative to an average Tobin's *q* of 1.37, 1.40, 1.66 and 2.33 respectively for these same firms, this implies that cross-listing abroad causes average 'within-firm' changes in value in the region of 1.90, 7.29, 1.88 and 21.61 per cent for Level 1, Level 2, London (Ord.) and AIM traded firms respectively. Of course, as outlined in Table 5, only AIM-traded firms enjoy a statistically significant cross-listing premium.

In Table 6, I replicate the analysis undertaken in Table 5, but here I use market-to-book of assets in place of Tobin's *q* as the valuation metric. All control variables, except for global industry *q*, are included, as before. In column 1, I regress market-to-book of assets on the cross-listing dummies alone, with firm- and time-fixed effects included. In the remaining columns, control variables are added in turn. Specification (5) contains the coefficient estimates with all controls included. The coefficient estimates for London (Ord.) and London (AIM) firms from Table 6 are in line with those presented in Table 5. Listing in London causes value for London (AIM) firms only. For these firms, trading on the AIM market in London causes an average 'within-firm' change in value of 27.35 per cent. In contrast to the results presented in Table 5, the coefficient estimates on the Level 1 and Level 2 dummies are positive, and statistically significant in some instances. The coefficient estimates imply an average cross-listing premium of 14.93 per cent for Level 1 firms and 19.65 per cent for Level 2 firms.

The coefficient estimates presented in Tables 5 and 6 for Irish firms are in stark contrast to those presented for the entire sample of cross-listed firms reported by Doidge et al. (2009, see Table 9, pp. 60–61). Doidge et al. (2009)

conclude that the average Level 1 cross-listed firm tends to be worth more than its counterpart non-cross-listed firm and cross-listing abroad is associated with statistically significant 'within-firm' changes in value for these firms. Interestingly, while the coefficient estimates for Irish firms (pooled ordinary least squares and firm-fixed effects) are in line with those presented by Doidge et al. (2009) for their entire sample of firms, using Tobin's *q*, they are statistically insignificant for Irish firms. Second, typically Level 2 and 3 firms enjoy the largest cross-listing premia. The pooled ordinary least squares and firm-fixed-effects coefficient estimates presented by Doidge et al. (2009) are the largest for Level 2 and 3 firms (0.25 and 0.06 respectively). In contrast, I find that AIM-traded Irish firms enjoy the largest cross-listing premia. Finally, while Irish firms trading on the main market of the London Stock Exchange do not experience a cross-listing premium, their experience does, nevertheless, compare favourable with the average LSE (ordinary list). Doidge et al. (2009) highlight a 'cross-listing discount' for the average LSE (ordinary) list. Thus, Irish firms listing on the main market of the London Stock Exchange tend to outperform the average LSE list. This may be a reflection of the fact that, unlike many other non-UK firms that list in London, Irish firms adhere

TABLE 6: FIRM-FIXED EFFECTS USING MARKET-TO-BOOK OF ASSETS

This table reports coefficient estimates from the following panel data regressions with firm-fixed effects:

$$mba_{it} = a + \beta_1 Level1_{it} + \beta_2 Level2_{it} + \beta_3 London(Ord)_{it} + \beta_4 London(AIM)_{it} + \beta_5 X_{it} + Firm_i + Year_t + \varepsilon_{it}$$

A full set of year-fixed effects and firm and/or industry controls are included but not reported. Firm value is measured using market-to-book of assets. All other variables included are as defined in Table 4. I report t-statistics (absolute value) in square brackets. The t-statistics are calculated using bootstrapped standard errors (200 replications), whereby each replication is a bootstrap sample of firm clusters (given the panel nature of the data). # Obs. is the number of observations and R^2 is the overall R-Squared. Statistical significance is denoted by ***, ** and * for the 1, 5 and 10 per cent levels respectively.

	(1)	(2)	(3)	(4)	(5)
Level 1	0.503*	0.514**	0.423	0.420	0.409
	[1.93]	[1.98]	[1.59]	[1.58]	[1.56]
Level 2	0.500*	0.428*	0.437*	0.433	0.432*
	[1.92]	[1.65]	[1.66]	[1.63]	[1.66]
London (Ord.)	0.115	0.128	0.057	0.059	0.010
	[0.65]	[0.73]	[0.32]	[0.33]	[0.05]
London (AIM)	0.588*	0.524	0.710*	0.711*	0.489
	[1.65]	[1.46]	[1.89]	[1.89]	[1.32]
Firm controls	Included	Included	Included	Included	Included
Time dummies	Yes	Yes	Yes	Yes	Yes
Firm dummies	Yes	Yes	Yes	Yes	Yes
# Obs.	571	571	571	571	571
R^2	0.181	0.189	0.206	0.210	0.222

to the UKLA Listing Rules with no accommodations. Thus, investors may value these firms more highly than firms that are subject to less stringent listing rules. Doidge et al. (2009) do not present any pooled ordinary least squares or firm-fixed-effects coefficient estimates for AIM-traded firms. However, Doidge et al. (2009) do examine the cross-listing premium in calendar time from 1990 to 2005. While they only present data for AIM firms for 2005, the coefficient estimate is 0.27 (compared to 0.16 for Level 2 and 3 firms), and, although statistically insignificant, it is consistent with the valuation premia that I document for AIM-traded Irish firms.

Finally, in Table 7, I present coefficient estimates from pooled ordinary least squares estimates, with unobserved heterogeneity (individual effects) specified as time averages of the regressors, an approach advocated by Mundlak (1978) (see Cameron and Trivedi (2005, p. 719) for a discussion of the issues). In effect, this specification is a variant of the firm-fixed-effects model presented in Equation (2). The motivation behind estimating this Chamberlain (1984) type model is that the firm-fixed estimates presented in Tables 5 and 6 depend crucially upon the assumption that strict exogeneity holds. Strict exogeneity implies that the error term is uncorrelated with the right-hand-side variables in all periods. However, this is unlikely to be the case given feedback effects from firm value to the cross-listing dummy variables. I formally test for this possibility, following Wooldridge (2002), by inserting the one-year forwarded cross-listing variables as independent variables and testing whether their coefficients are jointly equal to zero. While I find that the coefficient estimates are jointly equal to zero, I still proceed to estimate a model robust to feedback effects. This is because the time-series behaviour of Tobin's *q*, depicted in Figure 1, suggests that, at least for Level 1 and Level 2 lists, feedback effects are likely, i.e. the decision to cross-list is in part based on past values of Tobin's *q*.[14] To do so, I estimate a Chamberlain (1984) type model and specify the individual specific effects as Mundlak (1978) corrections: $\text{Firm}_i = \overline{X}_i \zeta + a_i$, where $\overline{X}_i = \frac{1}{T}\sum_{s=1}^{T} X_{it}$, and then proceed to estimate the following:

$$\text{value}_{it} = a + \beta_1 \text{Level1}_{it} + \beta_2 \text{Level2/3}_{it} + \beta_3 \text{London(Ord)}_{it} + \beta_4 \text{London(AIM)}_{it} + \beta_5 X_{it} + \overline{X}_i \partial + \varepsilon_{it} \quad (3)$$

Equation (3) is estimated using pooled ordinary least squares. Pooled estimation circumvents the problems associated with violations of the strict exogeneity assumption because estimation requires, inter alia, the less restrictive assumption of contemporaneous exogeneity.

In summary, my results suggest the following: cross-listed Irish firms (with the exception of Level 1 firms) tend to be worth more than non-cross-listed Irish firms. These 'valuation premia' range from 5.32 to 69.92 per cent, and are largest for AIM-traded Irish firms. Furthermore, in a series of firm-fixed-effects regressions, I find that cross-listing abroad contributes to this premium. On average, listing abroad leads to 'within-firm' changes in value in the region of 1.90, 7.29, 1.88 and 21.61 per cent for Level 1, Level 2, London (Ord.) and AIM traded firms respectively, and 14.93, 19.65, 2.76 and 27.35 per cent using market-to-book of assets. In general, using market-to-book of assets, with the

TABLE 7: CONTROLLING FOR POSSIBLE FEEDBACK EFFECTS USING MUNDLAK'S (1978) CORRECTION TERMS

This table reports coefficient estimates from the following pooled ordinary least squares regressions (with Mundlak's (1978) correction terms):

$$q_{it} \text{ or } mba_{it} = a + \beta_1 Level1_{it} + \beta_2 Level2_{it} + \beta_3 London(Ord)_{it} + \beta_4 London(AIM)_{it} + \beta_5 X_{it} + \overline{X_i}\partial + \varepsilon_{it}$$

Firm value is measured using Tobin's *q*, market-to-book of assets (MBA). Level 1 and Level 2 are dummy variables corresponding to a firm's listing in the US. London (Ord.) and London (AIM) are dummy variables corresponding to a firm's listing on the London Stock Exchange either as an ordinary list on the main market or on the Alternative Investment Market (AIM). Firm size is measured as the log of annual sales in real US dollars. Firm growth is measured as the (geometric) average real growth in sales over the prior two years. Global industry *q* is calculated as the average *q* of all global firms within each industry classification. Firm leverage is total debt to total assets, and profitability is defined as Earnings Before Interest and Taxation (EBIT) to Total Assets. I report t-statistics (absolute value) in square brackets. The t-statistics are calculated using bootstrapped standard errors (200 replications), whereby each replication is a bootstrap sample of firm clusters (given the panel nature of the data). # Obs. is the number of observations and R^2 is the R-Squared. Pr > F(Mundlak) tests the joint significance of the included (unreported) Mundlak (1978) time-averaged correction terms. Statistical significance is denoted by ***, ** and * for the 1, 5 and 10 per cent levels respectively.

	Tobin's *q*		MBA	
	(1)	*(2)*	*(3)*	*(4)*
Level 1	0.086	0.069	1.09***	0.640***
	[0.82]	[0.49]	[4.89]	[2.90]
Level 2	0.066	0.142	0.377**	0.429*
	[0.85]	[1.19]	[2.27]	[1.94]
London (Ord.)	0.360***	0.012	0.799***	0.641***
	[5.71]	[0.15]	[5.96]	[4.97]
London (AIM)	0.867***	0.299*	0.125	0.920***
	[5.10]	[1.77]	[0.34]	[2.63]
Global *q*		0.205	–	–
		[1.54]		
Firm growth		0.853***		0.680
		[3.38]		[1.17]
Firm size		–0.084**		-0.029
		[2.10]		[0.70]
Firm leverage		–0.552*		2.45***
		[1.84]		[5.98]
Firm profit		0.950***		1.25***
		[4.75]		[2.84]
Time dummies	No	No	No	No
Firm dummies	No	No	No	No
Industry dummies	No	No	No	Yes
# Obs.	574	536	571	571
Pr > F(Mundlak)	0.000	0.000	0.000	0.000
R^2	0.137	0.221	0.167	0.365

TABLE 8: ESTIMATES OF VALUATION AND CROSS-LISTING PREMIA BASED ON TABLES 4, 5 AND 6

This table reports estimates of the valuation and cross-listing premia for cross-listed Irish firms. 'Valuation premia' are calculated using coefficient estimates from Table 4. I estimate the 'cross-listing premium' using coefficient estimates from firm-fixed-effects regressions. Table 5 contains the estimates for the mean (and median) firm using Tobin's *q*. Table 6 contains the results using market-to-book of assets. 'Valuation premia' are calculated as follows: $\left(\frac{\text{value of (average) ncl firm + coefficient estimate (Table 4)}}{\text{value of (average) ncl firm}}\right) * 100$. The 'cross-listing premia' are calculated as $\left(\frac{\text{coefficient estimate (Table 5 or 6)}}{\text{value of (average or median) cl firm}}\right) * 100$ (from Tables 5 and 6). Figures in bold represent statistically significant premia at conventional levels.

Table 4: Pooled Ordinary Least Squares (Using Tobin's q)

	Mean	(1)	(2)	(3)	(4)	(5)	(6)
Level 1	1.37	6.94%	9.92%	8.47%	12.58%	6.77%	8.47%
Level 2	1.40	5.32%	9.35%	8.79%	**19.11%**	**14.84%**	**16.69%**
London (Ord.)	1.66	**29.03%**	**29.60%**	**28.23%**	**31.29%**	**30.40%**	**30.48%**
London (AIM)	2.23	**69.92%**	**64.03%**	**59.76%**	**46.53%**	**51.61%**	**51.77%**

Table 5: Firm-Fixed Effects (Using Tobin's q)

Mean firm	**Mean**	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
Level 1	1.37	(7.88%)	(3.21%)	(1.90%)	7.81%	9.05%	7.52%
Level 2	1.40	10.00%	9.14%	6.29%	4.07%	6.57%	7.64%
London (Ord.)	1.66	0.18%	(0.36%)	0.78%	5.48%	3.43%	1.75%
London (AIM)	2.23	**28.92%**	**29.46%**	**25.47%**	**16.82%**	**16.50%**	**12.51%**
Median firm	***Median***	***(1)***	***(2)***	***(3)***	***(4)***	***(5)***	***(6)***
Level 1	1.25	(8.64%)	(3.52%)	(2.08%)	8.56%	9.92%	8.24%
Level 2	1.18	11.86%	10.85%	7.46%	4.83%	7.80%	9.07%
London (Ord.)	1.47	0.20%	(0.41%)	0.88%	6.19%	3.88%	1.97%
London (AIM)	1.30	**49.62%**	**50.54%**	**43.69%**	**28.85%**	**28.31%**	**21.46%**

Table 6: Firm-Fixed Effects (Using Market-to-Book of Assets)

Mean firm	**Mean**	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**
Level 1	3.04	**16.55%**	**16.91%**	13.91%	13.82%	13.45%
Level 2	2.27	**22.03%**	**18.85%**	**19.25%**	19.07%	**19.03%**
London (Ord.)	2.67	4.31%	4.79%	2.13%	2.21%	0.37%
London (AIM)	2.21	**26.61%**	23.71%	**32.13%**	**32.17%**	22.13%
Median firm	**Median**	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**
Level 1	2.80	**17.96%**	**18.36%**	15.11%	15.00%	14.61%
Level 2	2.29	**21.83%**	**18.69%**	**19.08%**	18.91%	**18.86%**
London (Ord.)	2.51	4.58%	5.10%	2.27%	2.35%	0.40%
London (AIM)	1.29	**45.58%**	40.62%	**55.04%**	**55.12%**	37.91%

exception of ordinary lists in London, all other cross-listed Irish firms enjoy economic and statistically significant cross-listing premia. AIM-traded firms experience the greatest gains from listing abroad. This is surprising since these firms are subject to the least onerous disclosure and regulatory requirements. In contrast, Level 2 firms, which are subjected to the most stringent disclosure and regulatory requirements, enjoy smaller valuation gains from listing abroad. Furthermore, Irish firms that trade as ordinary lists on the London Stock Exchange, and which are required to provide more comprehensive disclosures than AIM-traded firms, do not experience any valuations gains from listing abroad. Finally, Level 1 firms enjoy a cross-listing premium, but, in line with the results presented by others (see Doidge et al., 2004, 2009), this premium tends to be less than that experienced by Level 2 firms. These results suggest that the valuations gains from listing may not necessarily increase in host market investor protection, both within and across host markets as predicted by the legal bonding hypothesis.

Ultimately, due to data considerations, I am unable to delve further into these results and examine why London (AIM) traded firms enjoy the largest cross-listing premia. Thus, at present I can only offer some possible explanations. First, the small cross-listing premia that I document for Level 2 exchange-traded depositary receipts may be caused by the fact that this listing did not constitute the firm's initial listing abroad; all of these firms listed in London prior to listing in the US. The findings of Sarkissian and Schill (2009) suggest that this is a plausible possibility. Second, all of the exchange-traded firms in my sample are non-capital-raising Level 2 ADRs, as opposed to capital-raising Level 3 depositary receipts. Typically, capital-raising Level 3 firms enjoy larger cross-listing premia. Finally, Bris, Cantale and Nishiotis (2007) show that the economic benefits (as opposed to the statistical significance) associated with bonding to a stricter governance regime is small, and smaller than the benefits derived from listing on markets that were previously segmented. However, given that one would expect that Ireland is more integrated with the UK than with the US, I would still have expected that the greatest gains to listing abroad should have accrued to Irish Level 2 lists.

Furthermore, I am unable to explain why Irish firms that trade on the AIM in London enjoy the largest cross-listing premia. For now, I am only able to offer some possible explanations. First, while the governance requirements of AIM firms is minimal (and thus should lead to a small cross-listing premium as predicted by the legal bonding hypothesis and the model outlined in Section 3), the typical AIM firm is small (and young), and agency costs are typically low in small firms. For these firms, the separation of ownership from control (leading to agency costs) is typically minimal, since those who often control these firms are typically founding members who retain sizable ownership stakes. As a result, the minimal governance requirements may well be sufficiently onerous to ensure that investors hold these firms. In fact, AIM-traded firms have been very successful in acquiring capital in London (see Arcot, Black and Owen, 2007; Rousseau, 2007), which only serves to lend further credence to this argument. Furthermore, we know from the theoretical model outlined in Doidge et al. (2004) that the cross-listing premium is increasing with firms' growth opportunities. An AIM listing provides a platform for firms to fund these growth opportunities. Second, the costs associated with listing on the AIM market (and subsequent capital raisings) are typically smaller than comparative costs on other exchanges. In fact, many firms have cited this as a reason for choosing the AIM market. This is important, since many firms have in recent times cited the excessive costs of (initial) listing (and subsequent ongoing compliance) as a major reason for delisting from US exchanges.[15] Hope et al. (2007) theorize that the costs of listing ensure that the cross-listing premia experienced by exchange-traded emerging market firms in the US are less than those experienced by counterpart developed market firms. This line of reasoning then suggests that the cross-listing premia experienced by AIM-listed firms may in part be driven by the (low) level of costs associated with such a listing.

CONCLUDING REMARKS

Given the relatively small size of the Irish Stock Exchange, it is perhaps not surprising that Irish firms have tended to list their shares abroad, in order to access deep and liquid capital markets. While the absolute number of lists is small, the number of Irish firms eligible to list abroad that actually does so is large. In this paper, I examine whether doing so is value enhancing.

The paper is largely motivated by an empirical irregularity outlined in Doidge et al. (2004). They outline a theoretical model, which predicts that exchange-traded depositary receipts (Levels 2 and 3) should be worth more than domestic firms pre-listing, and this 'valuation premium' should increase after listing in the US, resulting in a 'cross-listing premium'. However, in 1997, Irish Level 2 and 3 firms are worth less than non-cross-listed firms. In this paper, I examine this issue further.

Using a panel of Irish firms that trade in the UK or the US over the period from 1986 to 2007, I find in a series of pooled least squares and firm-fixed-effect regressions that Irish cross-listed firms tend to be worth more, and cross-listing contributes to this premium. Specifically, I find that Irish firms are worth more than non-cross-listed firms in the region of 5.32 to 69.92 per cent, and this valuation premium is largest for AIM-traded firms. Furthermore, I find in a series of firm-fixed-effects regressions that cross-listing abroad causes an average 'within-firm' change in value in the region of 8.17 per cent. Surprisingly, given that AIM-traded firms are subject to the least onerous disclosure requirements, these firms enjoy the largest valuation gains (average of 21.61 per cent) from listing abroad. In contrast, while Level 2 firms are subject to the most stringent and demanding disclosure requirements, they experience an average 'within-firm' change in value in the region of 7.29 per cent (using market-to-book of assets it is a statistically significant 19.65 per cent), which is less than that experienced by AIM-traded firms and the average Level 2 or 3 list in the US. In general, Level 1 firms experience valuation gains from listing abroad, but, consistent with Doidge et al. (2004, 2009), they are less than those experienced by Level 2 and 3 lists. Finally, listing on the main market of the London Stock Exchange is not value enhancing. Nevertheless, the experience of Irish firms compares favourably with the average foreign firm that lists in London. Doidge et al. (2009) uncover a 'cross-listing discount' for these firms. These results also suggest that the cross-listing premium does not necessarily increase in host market investor protection. While I find that Level 2 firms enjoy greater valuation gains from listing in the US relative to Level 1 firms, Irish AIM-traded firms do better than ordinary lists on the London Stock Exchange. Furthermore, since AIM-traded firms enjoy greater valuation gains than Level 2 lists in the US, at least for Irish firms, this suggests that the cross-listing premium does not increase with the level of investor protection across international equity markets.

Ultimately, I am unable to delve further into the causes of these results due to data restrictions. Nevertheless, I offer some possible explanations. First, it is likely that the small cross-listing premia experienced by Level 2 lists are likely to be caused by the fact that these firms listed in London prior to listing in the US. Sarkissian and Schill (2009) show that a firm's initial international cross-listing provides the greatest valuation gains. In the case of AIM-traded firms, the cross-listing premia are likely to be caused by a number of factors, namely, first that the governance requirements, albeit minimal, may well be sufficiently onerous for investors to hold these firms, since agency costs are likely to be low in these firms. In fact, the ability of these firms to raise capital on the AIM lends further credence to this argument. Second, the costs of initial and continued listing on the AIM are small. Recent evidence suggests that the cross-listing premium is not only a function of the benefits derived from listing, but also the costs involved.

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NOTES

[1] A relatively new literature examines the reasons why particular international exchanges become more attractive to 'international firms' than other competing international exchanges. For a recent treatment see Sarkissian and Schill (2008) and Fernandes and Giannetti (2008). A related literature examines how the listing (location) preferences of firms differ across countries (see Pagano, Roell and Zechner, 2002; Sarkissian and Schill, 2004).

2 Doidge et al. (2004) do not report any results for Irish firms that trade either over-the-counter as Level 1 'pink sheet' issues or as Rule 144a private placements.

3 Although included in many multi-country studies, the study of Irish cross-listed firms has been largely neglected in academic studies. To the best of my knowledge, Cotter (2004) remains the only study that devotes a sizable proportion of his work to the study of Irish ADRs. Gallagher and Kiely (2005) examine the impact of a dual listing on the volume—volatility relationship for 14 Irish firms trading in Dublin and London. Their sample of firms includes a number of Irish firms that trade in the US as ADRs, but the impact of this 'third-listing' is not addressed in their study. Buckland and Mulligan (1996) show that Irish firms that list in London are, relative to Irish firms that list solely on the Irish Stock Exchange, significantly larger and have greater growth opportunities.

4 Subsequent work has shown that the cross-listing premium is increasing in both.

5 Doidge et al. (2004) show that the cross-listing premium is given by: $q = z + \frac{1+k}{k(1-k)}[v(p)C - v(p_{Host})(C+z)]$. Differentiating with respect to the host level of investor protection yields: $\frac{\partial \phi}{\partial p_{Host}} = -\frac{1+k}{k(1-k)} \frac{\partial v(p_{Host})}{\partial p_{Host}}(C+z) > 0$ as $-\frac{\partial v(p_{Host})}{\partial p_{Host}} > 0$.

Thus, all else being equal, the higher the 'host' level of investor protection, the higher the cross-listing premium.

6 Using market-to-book of assets the average valuation gains range from 2.76 per cent for ordinary lists on the London Stock Exchange to a high of 27.35 per cent for AIM-traded firms. The corresponding figures for Level 1 and Level 2 firms are 14.93 and 19.65 per cent respectively.

7 However, one might argue that given that many of these Irish firms choose a simultaneous ISE/LSE listing (under the terms of the ISE/LSE International Stock Exchange agreement), a cross-listing in the US may well have represented these firms' initial cross-listing.

8 One might argue that the inclusion of banking firms may only serve to bias my results against finding positive valuation effects from cross-listing. However, recent work from Abdallah, Abdallah and Zhu (2009)) found that the market reaction experienced by banking firms upon cross-listing in the US appears to be consistent with the reaction experienced by the average non-financial cross-listed firm (see Miller, 1999). In this regard, banking firms appear to behave no differently than non-financial firms upon cross-listing in the US. I would like to thank an anonymous referee for advising me to expand on this issue.

9 Firms are designated into one of thirteen industries based on the following classifications using 4-digit SIC codes: Agriculture and Food (0100–0999 and 2000–2111); Mining and Construction (1000–1999, excluding 1300–1399); Textiles and Printing/Publishing (2200–2799); Chemicals (2800–2824 and 2840–2899); Pharmaceuticals (2830–2836); Extractive (2900–2999 and 1300–1399); Durable Manufacturers (3000–3999, excluding 3570–3579); Transportation (4000–4899); Utilities (4900–4999); Retail (5000–5999); Services (7000–8999, excluding 7370–7379); Computers (7370–7379, 3570–3579 and 3670–3679); Public Administration (9000+).

10 In her paper, Salva (2003) examines the valuation effects of cross-listing in the UK using standard event study analysis. To make comparisons between my paper and hers, I compute and graph cumulative abnormal returns (CARs) using the abnormal returns that she

reports in Table 3 (Salva, 2003, p. 474) for ordinary lists. The results suggest that ordinary lists experience a run-up in value in the days prior to listing, and fall off thereafter. In each of the ten days post-listing, the CARs are lower than those on the list date.

11 Using market-to-book of assets, the average ordinary list experiences an immediate increase in value once they cross-list, but value tends to fall below the list year value subsequently.

12 The results, using both price-to-earnings (PE) and enterprise value to EBITDA (see Figure 2), suggest that cross-listing in the UK and the US is associated with a pre-listing run-up in value, followed by a subsequent fall-off once the firm lists.

13 Doidge et al. (2009) do not present the time-series behaviour of Tobin's *q* in event time graphically (or in a table). However, the coefficient estimates from their work (Table 1, Panel B) suggests that, like Gozzi et al. (2008) (and Mitton and O'Connor (2008) for investable firms), cross-listed firms experience a run-up in value prior cross-listing, followed by a fall-off subsequent to listing.

14 Using both price-to-earnings (PE) and enterprise value to EBITDA suggests that this is the case for all cross-listing firms (see Figure 2).

15 For example, Skyepharma, a UK firm, delisted from the NASDAQ in 2007 due to the 'expense and burden associated with maintaining compliance with SEC and Nasdaq rules' (*Healthcare Finance, Tax & Law Weekly*, 23 May 2007).

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