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Institutional Investors, Corporate Governance and the Performance of the Corporate Sector

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INSTITUTIONAL INVESTORS, CORPORATE GOVERNANCE AND THE PERFORMANCE OF THE CORPORATE SECTOR

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Abstract: Proportions of equity held by institutional investors are rising across all OECD countries. Paradigms of corporate governance involving a key role for institutions are market control via equity (the takeover sanction), market control via debt (LBOs) and direct control via equity (corporate governance activism). Even in countries where institutions are currently unimportant to corporate governance (where relationship banking or direct control via debt prevails) there are tendencies to switch towards these "Anglo Saxon" approaches, inter alia due to pension reform and EMU. Existing evidence at a micro level for favourable effects of the three Anglo-Saxon mechanisms on corporate performance is mixed, but on balance positive. We contend that these micro studies face a difficulty that they cannot capture effects of governance initiatives going wider than "target firms". A better measure of institutions' overall effect is analysis at a macro level. Accordingly, we present results for the empirical relationship between institutional share holding and corporate sector performance at an economy wide level. These are consistent with marked effects, which often differ between "Anglo Saxon" and "relationship banking" countries. For example, institutions appear to restrain investment and boost dividends in the former.

Keywords: Corporate governance, institutional investors

JEL classification: G23, G34

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Introduction

Given the divorce of ownership and control in corporations, principal-agent problems arise, as shareholders cannot perfectly control managers acting on their behalf. Managers have superior information about the firm and its prospects, and at most a partial link of their compensation to the firms' profitability. This gives them incentives to divert funds in various ways away from those who sink equity capital in the firm. Lower profitability and poor investment allocation may be the result of failure to address these "corporate governance" problems. Accordingly, improvements in corporate governance which circumvent such problems may be expected to have significant effects on corporate performance at the micro and possibly even the macro level.

Institutional investors, because of their greater bargaining power over the firm relative to individual investors, are well placed to minimise these problems. Across all OECD countries, the role of institutions is growing as their share of corporate equity increases. Traditionally there have been dramatic differences between financial systems in a number of aspects of governance, notably the role of takeovers, the importance of institutional investors as shareholders and the degree of activism of these investors relative to banks. An important issue at present is whether a degree of convergence is perceptible, partly related to institutional growth.

In this context, the article examines the relation between growth of institutions, equity finance, corporate governance and performance. First, we note the broad trends in corporate finance that underlie the growing role of institutional investors. Four basic models of corporate governance are then outlined. It is suggested that those mechanisms prevailing in Anglo Saxon countries and with an important role for institutions have a wider relevance, since a growing shift towards these modes is perceptible also in Continental Europe and Japan. With this potential for convergence as background, we examine aspects of the empirical work on the "Anglo Saxon paradigms" of takeovers, LBOs and direct pressure by shareholders on management. These could have a wider relevance if convergence takes place. The bulk of such empirical work on corporate governance has used micro data in the US. We contend that the overall effect of institutionalisation on corporate performance is better assessed by using panel estimation techniques on macro data. We maintain that such analyses may capture important economy-wide effects of corporate governance mechanisms that may be obscured by micro studies, given that the latter rely on measures of relative returns or efficiency of target firms[2].

1 Institutional investors, equity holdings and the growth of securities markets

[2] See for example Firth (1976) who shows how earnings announcements spill over across the relevant sector as a whole.

Patterns of equity holding by sector in the G-7 countries are shown in Table 1. These show the varying importance of institutional investors. In the UK and US, domestic institutional investors hold 30-40% of equities, and in Germany, Japan and Canada institutional investors also hold around 20%. Only in France and Italy are holdings by the domestic institutional investor sector a trivial share of equities. However, a complete picture should also take into account the foreign holdings, which are likely to be mainly institutional (albeit also by foreign corporations). Foreign sector holdings are very high for UK equities (at 35-40%), with the next largest share of foreigners being in France (20%). In Germany, Italy and Canada foreign holdings are 15-20%, and below 10% in the US and Canada. Banks hold over 10% of shares in Germany, Japan and France, reflecting their strong influence on corporate governance. Households account for 20% or less of equity holdings in most of the countries analysed, with the main exception being the US, Canada and Italy. Corporate cross holdings are low in the UK and US but much higher elsewhere. Most attention tends to be devoted to such cross-holdings in Germany and Japan in the context of the "bank dominated financial system", discussed below, but the largest intersectoral holdings are actually in France (35%) and Canada (25%).

What have been the historical trends? Charts 1-8 show long-term domestic institutional and foreign holdings as a percentage of the total. (Mutual funds are omitted owing to lack of data for most countries.) These are the key series in our later econometrics. It is evident that these generally have tended to increase over time, albeit remaining lower in Continental Europe and Japan (CEJ for short) than in the Anglo Saxon countries. Looking first at the CEJ, the low level of domestic institutions is a marked feature, albeit with a rise over time in Germany and Japan. Trends in foreign holdings are not monotonic, with the data showing some decumulation at the end of the 1970s in Germany and Italy, but a rise in all 4 countries since then. Uptrends in all series are also apparent in the Anglo Saxon countries. Generally, domestic institutions dominate foreign holdings, although the UK in 2000 shows an exception. Institutions in the UK (including the foreign sector) own 80% of shares, which is far higher than elsewhere.

Background features underlying the issue of corporate governance by institutional investors and these rising sectoral holdings are changes in financing patterns which have led to a rise in the importance of securities market finance for enterprises, and therein, a growth in influence of institutions. A view of developments in financial structure over time is shown in Tables 2-5 for the G-7[3] countries. The tables show data for end-1998, drawn from National Flow of Funds Balance Sheets, and comparative data for 1970.

[3] UK data exclude offshore bank loans and deposits (i.e. the eurocurrency market)

Table 2 shows that the volume[4] of financial claims relative to GDP has grown sharply in all of the G-7, albeit varying in terms of levels. This has coincided in most cases with an increase in financial intermediation - the proportion of claims held indirectly in banks or institutional investors as opposed to being held directly. In other words, the growth of financial markets has not led to a fall in intermediation, indeed quite the contrary. However, the locus is changing - of the intermediated claims, a growing proportion has been in the form of institutional investment (including life insurance, mutual funds and pension funds). It is noteworthy that this tendency is apparent across all countries shown and not just the so-called Anglo-Saxon ones, although differences in levels are still marked.

These changes have coincided with in most cases a sharper rise in securities (i.e. bonds and equities) than in deposits and loans, implying that bank assets and liabilities have declined relative to the total (Table 3). Meanwhile, households have tended to shift the composition of their balance sheets to institutions and away from deposits as well as directly held equities and bonds (Table 4), although again levels still differ. Patterns for companies are less clear, but there would appear to be a tendency for them to reduce their dependence on loans and increase their reliance on equities, as shown in Table 5 (it being borne in mind that the balance sheet composition reflects capital gains as well as new issuance). The leverage of equity holders in corporate governance is hence potentially enhanced. On the other hand, in levels terms, the table still shows the expected difference between Anglo Saxon and other countries in terms of the importance of bank loans to companies, it being below 20% in the former and above it - at times well above - in the latter. Finally, use of corporate bonds is particularly low in all the EU countries shown – including the UK[5].

2 Broad themes in corporate governance

In the context of the above information, which shows a growing predominance of equity finance and institutional holdings thereof, we now go on to discuss corporate governance in more detail. As noted in the introduction, there is a divorce of ownership and control in the modern corporation, and shareholders cannot perfectly control managers acting on their behalf. Underlying factors are asymmetric information, inability to write contracts covering all contingencies, the discretionary nature of dividend payments and sheer lack of skills and resources to second-guess managers. Hence, principal-agent problems arise. Managers have superior information about the firm and its prospects and at best a partial link of their compensation to the firms' profitability.[6] Consequently, they may

[4] The size indicator shows the total value of all financial assets of the conventional economic sectors in the System of National Accounts (household, corporate, banks, non-bank financial institutions, government, foreign).

[5] Note that some simple econometric work relating institutional growth to changes in financial structure is presented in Davis and Steil (2001).

[6] Performance-related pay, the use of share options, and similar devices may help to align managers' and

divert funds in their own interests and to the disadvantage of shareholders. Forms of diversion of funds may include expropriation[7] or diversion of cash flow to unprofitable projects. Correspondingly, dividends and profitability may come under downward pressure, while productivity growth is likely to be slow, especially if discipline from product market competition is also absent.

Evidence for agency costs includes the frequent observation that share prices of bidder firms fall when acquisitions are announced (Roll 1986), resistance of managers to takeovers that threaten their positions (Walkling and Long 1984), and the premium offered to shares with voting rights (Zingales 1995). As Schleifer and Vishny (1997) noted, shareholders are much more vulnerable than other stakeholders in the firm, such as workers and creditors. Workers can withdraw labour, and creditors can refuse debt finance and apply pressure on the managers by those means. Whereas it may be argued that managers' desire to maintain reputation in the market will help to protect shareholders (Kreps 1990), it may not be sufficient.

Principal-agent problems in equity finance imply a need for shareholders to exert control over management while also remaining sufficiently distinct from managers to let equity holders buy and sell shares freely without breaking insider trading rules. If difficulties of corporate governance are not resolved, equity finance will be tend to be unduly costly[8] and often subject to quantitative restrictions.[9]

A key to all successful forms of corporate governance is mechanisms for legal protection of shareholders. These include the right to vote on important corporate matters, notably mergers, as well as elections of boards of directors. There may also be a legally enforceable duty of loyalty by managers to shareholders (see Schleifer and Vishny 1997). Boards of directors, in particular non-executive directors, act as shareholders' representatives in monitoring management and ensuring that the firm is run in their interests. Shareholder influence is ensured by their right to vote on choice of directors (as well as other elements of policy proposed by management). On the other hand, if boards are weakly supervised by shareholders, they may act in managers' interests rather than those of shareholders (Jensen 1993), or they will be passive in all but extreme circumstances (Kaplan 1994).

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shareholders' interests. But such contracts may themselves worsen the governance problem by leading to heightened incentives for self-dealing, with managers negotiating such contracts when they know that performance may improve.

[7]Beyond theft, transfer pricing, and asset sales, expropriation may take forms such as perquisites, high salaries, diversion of funds to pet projects, and general entrenchment even in cases in which managers are no longer competent or qualified to run the firm.

[8] Indeed, in most of the world outside the Anglo-Saxon countries, Germany, and Japan, absence of minority shareholder protection means that external equity finance is relatively uncommon and most firms are family owned and financed (La Porta et al. 1999).

[9]Investor overoptimism may play a periodic role in the provision of external finance. See, for example, evidence on the overvaluation of junk bonds used to finance U.S. takeovers in the 1980s in Kaplan and Stein (1993) and of new equity issues by Ritter (1991). But this sentiment tends to be highly cyclical.

Hence effectiveness of corporate governance typically also requires the presence of large investors, be they banks, other companies, or institutional investors. They will have the leverage to oblige managers to distribute profits to providers of external finance. They are needed because individual investors may find it difficult to enforce their rights, even if these are legally enshrined. Underlying these difficulties are information asymmetries vis-à-vis managers, the difficulty of forming coalitions to act in a concerted manner against management, and free rider problems. Large investors may find it easier than small investors to enforce their rights in court.[10]

There is also a downside to large investors, as they may override the interests of minority shareholders (La Porta et al. 1999). Consistent with this downside, Morck et al. (1988) found that profitability is higher for firms with shareholders that have up to 5% stakes. Beyond that, profitability falls. This pattern may indicate that larger, block-holding investors seek to generate private benefits of control that are not shared by minority shareholders. Institutional shareholders are often limited, either by regulation or by a desire to maintain liquidity, to holding a maximum 5% of a firm's equity, so their holdings appear likely to be at the optimal level to generate profitability.

3 Four Paradigms of Corporate Governance

There are well-known contrasts in the behaviour of financial institutions and markets in the major OECD countries, notably as they relate to the financing and governance of companies. The general division is between the Anglo-Saxon systems of the United Kingdom, United States, Canada, and Australia on the one hand and the systems that have prevailed historically in Continental Europe and Japan on the other. We would characterize the traditional distinction between the two systems in terms of the finance and control of corporations, distinguishing between direct control via debt and market control via equity (see Davis 1993b, 1995a).

Direct control via debt implies relationship banking along the lines of the German or Japanese model. This typically involves companies having exclusive financing relationships with a small number of creditors and equity holders. There is widespread cross-shareholding among companies.[11] Banks are significant shareholders in their own right and in Germany are represented on supervisory boards both as equity holders and as creditors.

In these countries, banks exert corporate governance most decisively via their control rights as

[10]Note that this argument suggests that households will be justified in being more willing to provide equity finance via institutions than they would directly.
[11]However, bi-directional cross-holdings are typically means of cementing alliances or collusion rather than exerting control.

creditors. They may influence the firm by varying the maturity of debt as well as taking control when firms default or violate debt contracts.[12] They may also provide rescue finance to firms in financial difficulty, recouping the expense by charging higher spreads when the firm recovers. Nonetheless, banks in these countries have also been able to exert control through the voting rights conferred on them by custody of bearer shares of individual investors who have surrendered their proxies. The influence of other (institutional) shareholders is often limited by voting restrictions, countervailing influence of corporate shareholders, and lack of detailed financial information, as well as the right of other stakeholders (such as employees, suppliers, and creditors) to representation on boards. In practice, equity holders are often discriminated against in such systems, to the advantage of the creditors, for example in terms of dividends. Such discrimination may make minority investors unwilling to invest, leaving equity markets themselves underdeveloped.[13] However, as we note below, this pattern is changing, partly owing to pressure by institutions from the Anglo-Saxon countries.

As regards *market control via equity*, the principal advantage of hostile takeover activity, which is a distinguishing mark of Anglo-Saxon systems, is that it can partly resolve the conflict of interest between management and shareholders: The firms that deviate most extensively from shareholders' objectives—and that consequently tend to have lower market values as shareholders dispose of their holdings—have a greater likelihood of being acquired. Indeed, there is evidence that takeovers act to address governance problems (Jensen 1993). The threat of takeover, as much as its manifestation, acts as a constraint on managerial behaviour ensuring dividends etc. are at a level to meet shareholders' needs. Institutional shareholders, both directly and via non-executive directors, can have an important role to play in this context, both in complementing takeover pressure as a monitoring constraint on management behaviour and in evaluating takeover proposals when they arise.

Note that besides becoming vulnerable to takeover, a firm with a low share price will find the cost of equity capital very high, which may restrain expansion. This is particularly the case if the credit rating of debt finance is also affected by the high debt/equity ratio that a low share price entails.

The willingness of banks—and institutional investors, via junk bonds—to finance highly leveraged buyouts (LBOs) and takeovers in the 1980s in the United States and the United Kingdom brought to the fore *market control via debt* (Jensen 1986). A key source of conflict between managers and shareholders stems from firms' policies in dividing profits between dividends and retained earnings. The suspicion is that managers may waste retained earnings or "free cash flow" on unprofitable projects. Debt issue can ease tensions, since by increasing interest payments, the free cash flow at

[12]Hoshi et al. (1993) show how profitable Japanese firms sought to avoid the costs of bank links when access to public debt issuance was liberalized.

[13]Note that there is also evidence that banks may be inadequate as monitors, not seeking to discipline managers as long as the firm is far from default (Harris and Raviv 1990).

managers' disposal is reduced. If free cash flow is pre-empted by interest payments, managers must seek external financing via either debt issue or equity issue for each new project undertaken. This forces them to obtain an adequate rate of return on such projects. Besides this benefit, the equity stakes that managers usually take on in LBOs align their incentives with those of other equity holders.

A disadvantage of increased gearing is that potential conflicts between shareholders and debt holders become more intense.[14] Jensen and Meckling (1976) show that shareholders in highly leveraged firms have an incentive to engage in projects that are too risky and so increase the possibility of bankruptcy. Given this risk, monitoring of managers by creditors may become so intense as to preclude investment altogether. Indeed, it is commonly argued that LBOs are a transient form of corporate organization that may be helpful in unwinding earlier excesses in terms of diversification.

There are a number of shortcomings to market control via equity and debt as practiced in the Anglo-Saxon countries. As Schleifer and Vishny (1997) noted:

- takeovers are so costly that only major performance failures are likely to be addressed;
- they may increase agency costs when bidding managers overpay for acquisitions that bring them private benefits of control;
- and they require a liquid capital market (e.g., for junk bond issuance) to provide finance.

These problems came increasingly to the fore in the United States as the boom of the late 1980s turned to recession, leveraged firms started to default, and the junk bond market collapsed in 1989.[15] Dissatisfaction with the takeover mechanism was increased by abuse of takeover defences by managers of weak companies and/or payoffs of raiders, regardless of shareholders' interests. Managerial compensation and performance under the protection of such devices was acknowledged to be unrelated to profitability. The EU is currently grappling with appropriate takeover regulations (ESFRC 2002).

As a consequence of these concerns, institutions in the United States began to seek new means to exert corporate control. This discontent brought to the fore a corporate governance movement based on *direct control via equity*.[16] The dominance of institutions as shareholders gives ample scope for

[14]Perhaps more important, high leverage is likely to have various deleterious consequences. By raising the bankruptcy rate, it increases the incidence of deadweight bankruptcy costs arising from legal costs, diversion of managerial energies, and breakup of unique bundles of assets, for example. And at a macro level, increased corporate fragility is likely to magnify the multiplier in the case of recession (Davis 1995b).

[15]The junk bond market has proven highly cyclical, with a collapse of issuance occurring in 1989–1991 and again in 1998 (see Davis 2000).

[16]Note that the argument presented here from an institutional investor's point of view generalizes to the extent to which any large shareholder, be it an individual, bank, or company, may exert direct influence on a firm and thereby overcome corporate governance problems. Schleifer and Vishny (1997) note a number of studies

leverage: They own 50% of the top fifty U.S. companies, and the top twenty U.S. pension funds own 8% of the stock of the ten largest companies. Such influence may be exerted via the right of shareholders to select boards of directors, as we noted above. But this right may be supplemented by direct links from institutional investors to management[17] either formally at annual meetings or informally at other times. This is precisely what has been observed in recent years. It can be argued that the development of stock options has also facilitated this trend by increasing the incentives of managers to perform in line with institutions' expectations, even in the absence of takeovers and leveraged buyouts. A further important motivation for direct control via equity has been the development of indexing strategies. Indexation by its nature obliges institutional investors to hold shares in large companies that form the index. It thus encourages them, following their fiduciary duty as well as in the interests of returns, to improve management of underperforming firms, (see Monks 1997).[18] Even active investors that hold large stakes in a company must bear in mind the potentially sizable cost of disposing of their shareholdings, thus again encouraging activism. In effect, they are driven to seek direct control owing to illiquidity (see Coffee 1991).

Coalition building is essential for effective institutional control to be exerted; as noted, institutions typically do not seek to hold large stakes in firms, while influence is obtained only when a significant proportion of shareholders act together.[19] With growing institutionalisation, it becomes much easier and cheaper to reach a small number of well-informed key investors who will command a majority of votes. The U.S. shareholder activist movement was encouraged in the early 1990s by:

- a rule from the Securities and Exchange Commission SEC[20] that liberalized the coalition-building restrictions. It enabled investors to collude more readily; now any number of shareholders could communicate orally without restriction, as long as they were not seeking to cast votes for others;
- a further SEC rule aided the movement by improving information available to shareholders. It enforced comprehensive disclosure of executive pay practices (salary, bonuses, and other perks for the top five officers over a three-year period) and policy regarding the relationship of executive pay to performance of the company as a whole, and also;
- a 1988 ruling by the U.S. Department of Labour (the "Avon letter") stated that decisions on voting by pension funds were fiduciary acts of plan asset management under ERISA, which must be

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showing effective exercise of governance in Germany, Japan, and the United States.

[17]Note that in countries such as Italy, direct control via equity is exerted in pyramidal groups of companies, in which those (larger firms) higher up hold shares in those (smaller) lower down (OECD 1995).

[18]This is an important observation, since it is often suggested in countries such as the United Kingdom that the longer-term relationships, close monitoring of company performance, and large shareholdings needed for alternatives to takeover to operate will not be present in the case of indexation.

[19]If collaboration is ruled out, institutions are likely to be in a prisoners' dilemma situation with respect to corporate governance, with each finding that acting in their own interests (e.g., selling the shares in an underperforming company) leads to a worse outcome than could be realized by acting collectively (e.g., by requiring improvements to management structure and performance).

[20]The SEC is the regulatory body for U.S. securities markets.

either made directly by trustees or delegated wholly to external managers;

- under the lead plaintiff provision of the U.S. Private Securities Litigation Act of 1995, large shareholders can seek to be named controlling parties on class-action shareholder lawsuits against company management.

Since these developments, U.S. pension funds have consistently voted on resolutions that they might previously have ignored. Public pension funds[21] such as the California Public Employees Retirement Scheme (CALPERS) and the New York Employees Pension Fund (NYEPF) have been particularly active. They have sought, for example:

- to challenge excessive executive compensation and takeover protections,
- to seek to split the roles of chairman and chief executive,
- to remove underperforming chief executives,[22]
- to ensure independent directors are elected to boards,[23] and
- to ensure that new directors be appointed by non-executives.

These ends are reached by filing proxy resolutions and directing comments and demands to managers, either privately or via the press. CALPERS in 1997 also drew up corporate governance standards relating in particular to the role of the independent directors and graded the 300 largest holdings on this basis. Broadly similar tendencies toward shareholder activism by pension funds is also apparent in the United Kingdom and Canada, often aided by U.S. involvement (Davis (1995a), Simon (1993)). Besides pension funds, value-based asset managers such as Phillips and Drew have become active on their own behalf in the United Kingdom, taking large stakes in underperforming firms with a view to improving management or provoking takeovers (Martinson 1998).

4 Institutional Investors and Bank-Based Systems of Corporate Finance

Even in bank-dominated countries such as Germany and Japan, U.S. pension funds have introduced shareholder activism.[24] U.S. funds' leverage is apparent from the size of their international holdings ($410 billion in 1999) and concentration ($265.5 billion in the twenty-five largest funds). CALPERS,

[21] Private pension fund trustees and mutual fund managers have been more restrained. In the case of mutual funds, Roe (1992) suggests that restraint in corporate governance activities may reflect regulations that limit activism by restricting large holdings of firms' equity and regulating or prohibiting activities with affiliates.

[22] Examples in the early 1990s include those of IBM, Westinghouse, Kodak, Amex, and General Motors.

[23] Celebrated cases include the CALPERS agreement to back Texaco management in a takeover bid if the management agreed to support independent directors and pressure by CALPERS and the NYEPF on General Motors to accept a resolution for more than half the directors to be independent.

[24] Monks (1997) comments that greater activism of even private U.S. funds abroad may show a lower fear of commercial reprisal.

which in 1998 had $2 billion in Japanese stocks and $4 billion in French stocks, has issued guidelines for corporate governance[25] addressed to all firms in the national market.

Other factors are facilitating institutional activism. Many firms in Continental Europe and, to a lesser extent, Japan are already seeking access to relatively low-cost international equity finance, not least given that domestic investors are tending to invest abroad. They are accordingly being obliged to meet the needs of Anglo-Saxon pension funds for market-value-based accounting,[26] information disclosure and higher dividend payments (see Schulz 1993).

Domestically, German firms are issuing record levels of equity, and flotations are also widespread. A larger volume of equity issuance increases the potential leverage of institutional investors. Germany saw its first hostile takeover, of Mannesmann by Vodafone, in 2000. In Japan, firms and banks are decumulating their cross-shareholdings, partly under pressure from their own pension liabilities, thus, as in Germany, weakening the influence of block shareholders. In Japan, there has also been a successful takeover of the domestic telecommunications firm ICD by Cable and Wireless of the United Kingdom, despite a competing offer by Japanese telecommunications company NTT.

Universal banks in Europe are switching away from the traditional lending that underpinned direct control via debt to investment banking activities and decumulation of shareholdings. These shifts partly link to pressures for better performance from banks' own institutional shareholders. They also reflect increased competition for lending; as Petersen and Rajan (1994) argued, exclusive credit relationships, which are a feature of traditional corporate financing the Germany and Japan[27], may be vulnerable to increased banking competition. This is because competition gives rise to a risk of poaching of borrowers by other lenders and reduces spreads. Then it is no longer profitable for banks to rescue firms that are in financial distress, since they cannot charge higher spreads in good times to pay for this insurance. A special feature in Japan was the weakening of banks owing to the real estate crisis of the 1990s, which reduced their ability to rescue firms in difficulty. Nonfinancial companies in Germany and Japan are also seeking to reduce dependence on relationship banks, to avoid the risk

[25] As noted in Financial Times (1998), CALPERS stated that "the Japanese market will only become attractive to investors if it adopts corporate governance standards that are more representative of shareholders' interests," while France "needs to begin meeting market expectations and requirements" and must develop "a greater focus on the role of shareholders when defining the corporations interests."

[26] Based on the U.S. Generally Accepted Accounting Principles.

[27] The potential for convergence of German and Japanese corporate governance with systems in Anglo-Saxon countries should not be exaggerated (Berglöf 1996), not least because of the large proportion of corporate firms that are private. Even for listed firms, there can be strong worker resistance to corporate governance and "shareholder value," which can be exerted via rights to representation of stakeholders on boards. Company secrecy is to some degree protected by law, thus maintaining banks' comparative advantage over markets as a source of finance. Company statutes in some countries would need to be reformed if stakeholders were no longer to have a say in management – reform is actually underway in Japan at present. Large blocks of shareholdings by banks, families, or other firms will disperse at most only gradually. The example of the Netherlands, where pension funds do not have a strong voice in corporate governance, shows that pension fund growth alone is not

of exploitation[28] (see Edwards and Fischer 1994, Hoshi et al. 1993). The growth of securities markets enables them to substitute bond for bank finance, at a cost in terms of greater vulnerability to financial distress, which may reduce investment (Hoshi et al. 1991, Elston 1993).

Important fiscal and regulatory changes are taking place in Europe and Japan that are improving the scope for corporate governance activity by international institutional investors. The German government announced in December 1999 that companies would be able to decumulate shareholdings without incurring capital gains tax. This promises to reduce cross-shareholdings,[29] thus reducing the influence of block shareholders, which has tended historically to favour incumbent management. French law has been amended to protect minority shareholders in takeovers, owing largely to pressure from institutional investors. Reform has taken place of insider information restrictions (in countries such as Germany), limits on dual classes of share (an important issue in countries such as Switzerland), and equal treatment of creditors in bankruptcy (to protect corporate bond holdings). Japanese corporate law is being reformed to favour equity holders rather than creditors. The EC is considering how to liberalise takeover regulations across the Union.

In Europe EMU is compounding pressures for change to corporate governance:

- institutional investors, which are no longer confined by portfolio regulations to national markets (Davis 2002), are seeking to diversify much more widely across the Union, and thus asset managers' performance is more readily compared, resulting in increased competitive pressure to offer high returns. In this context, investors and asset managers wish to ensure that corporate management performs in line with shareholder value, be it via development of hostile takeovers or direct shareholder pressure.[30];
- companies are seeking to issue more equity, both to finance restructuring and to increase the robustness of their balance sheets in a context of weaker bank relationships. Desire to issue equity implies a need to satisfy the expectations of institutional investors regarding dividends, information disclosure, minority protection, and profitability;
- further hostile takeovers are taking place;
- a euro corporate bond market (Bishop 1999) has helped to underpin a shift in modes of corporate governance towards market control via debt, by facilitating leveraged buyouts and takeovers as a means to discipline management. For example, Olivetti was able to issue 9.4 billion euros in bonds to finance its majority control of Telecom Italia.

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sufficient to ensure radical change in this area. (Bolt and Peeters 1998, Hoogduin and Huisman 1998).

[28]See also Hellwig (1991) for a discussion of risks of exploitation in the context of an exclusive financing relationship.

[29]Cross-shareholdings are mutual holdings of each other's shares by two usually nonfinancial firms to cement corporate relationships. They have not usually been a channel for corporate governance activity.

[30]Among the most interesting outworkings of a shift in corporate governance will be in the governance of banks per se, which Dermine (1996) sees shifting from market-share-based to value-based strategies in the EMU

- companies, under pressure to maximize profits, are divesting their cross-holdings (due to low returns), thus eliminating a proportion of currently passive shareholders. Banks equally are seeking to further reduce equity holdings, partly owing to capital adequacy considerations;
- book-reserve-based pensions are giving way to Anglo-Saxon-style externally funded pensions. Daimler-Benz has shifted $4 billion of pension liabilities from balance sheet book reserves to an external equity-based trust, partly because of the adverse effects of book reserves on credit ratings (Burt 1999).
- reduced willingness of banks to undertake rescues, which we discussed above in a German context, has intensified following EMU. This reflects both increased interbank competition and the enhanced ability of firms to avoid the costs of banking relationships by issuing bonds[31] in the rapidly growing euro corporate bond markets.

Foreign shareholders continue to play a major role in transforming corporate governance in Europe and Japan. Notably in Europe, the dependence of companies on foreign equity holders in the absence of well-developed domestic institutional sectors (see Table 1) is making takeover bids easier to undertake.[32] Pressure for change may be sustained in the longer term as domestic institutions develop more strongly, when governments reform social security pension systems (Davis 1993). EMU will provide a considerable stimulus for such reform.

To sum up at this point, the growing dominance of equity holdings by institutional investors, both domestic and international, is casting a sharp focus on their activities as owners and monitors of firms. Anglo-Saxon countries are witnessing an increase in direct influence of institutions to complement reliance on the takeover mechanism to discipline managers. Europe and Japan remain more firmly in the bank-relationship-based governance paradigm. On the other hand, such differences should not be exaggerated, and some convergence is discernible to a modified form of the Anglo-Saxon paradigm in which institutions are the primary actors in corporate governance generally. In Europe, EMU will provide a major spur to such convergence.

5 Empirical evidence; activism, takeovers and short termism

The suggestion made above that even the CEJ countries are tending to shift towards Anglo Saxon modes of corporate governance mean that empirical analyses of the outworkings of that system have a wide importance, going beyond the Anglo Saxon countries themselves. Accordingly, this section

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context under pressure to maintain returns to shareholders.

[31] Firms are proving willing to use euro-denominated bonds for the main source of their regular debt financing and not only to finance takeovers.

[32] In France, the three-cornered merger battle between Société Generale, Paribas, and BNP showed the growing influence of foreign institutional holders relative to the government.

provides a selective summary of extant empirical work on institutional investors and corporate governance that has taken place in the Anglo Saxon countries, with a focus on the effect on company performance:

In the context of market control via equity, and focusing on the period 1986–1990, Clyde (1997) found that institutional concentration among shareholders was positively correlated with the frequency of takeovers. Further issues which arise are of the utility of takeovers and the possible short-termism that the threat of takeover can induce. `Most work has been done on takeovers. It may be divided between that focusing on share price responses to mergers and estimates of the impact on profitability and efficiency measured directly. Most of the former studies are based on event studies, measuring the response of share prices to the merger relative to a market-based benchmark. Jensen and Ruback (1983), looking at US activity, concluded that the overall gains are positive, target firm shareholders benefit and bidder shareholders do not lose. Jarrel et al (1988) found that later in the 1980s, premia to targets fell and bidders faced a slight loss but the net effect was still positive. Firth (1980) looking at the UK, saw a definite negative effect on the bidder, which more than cancelled the gain of the target. with a negative net response (part of the explanation may be that information leaked prior to the bid). On the economics side, Scherer (1988) found that acquired firms under perform by 11% on a basis of cash flow to sales, suggesting the evidence for economic efficiency gains was weak.

The short-termist hypothesis maintains that equity markets dominated by institutional investors tend to undervalue firms with good earnings prospects in the long term but low current profitability. This in turn is held to discourage long-term investment or research and development (R&D) as opposed to distribution of dividends, because firms that undertake long-term strategies may be undervalued and/or taken over. Underlying the hypothesis is the willingness of institutional investors to sell shares in takeover battles, in combination with regular performance evaluation of asset managers by trustees, which is said to make managers impatient for returns.

Whereas such a phenomenon could reflect irrational undervaluation of long-term investment projects, this is not necessarily the case. Schleifer and Vishny (1990) show that given information asymmetries, risk-averse managers could prefer short-term investment projects in a situation in which arbitrageurs have limited funds and hence mispricing of long-term projects by the market is only gradually removed. In support of the short-termist hypothesis is research by Miles (1993) on the UK, who undertook tests of whether discount rates implicit in market valuations applied to cash flows that accrue in the long term are too high both in absolute terms and relative to the rates applied to cash flows in the near term. The result seems to confirm the existence of such effects in the United Kingdom, with long-term discount rates being too high. An earlier study by Nickell and Wadhwani

(1987) came to similar conclusions. Evidence of mean reversion in stock prices in the United States is seen in the same light by Poterba and Summers (1992).[33]

Against the short-termist hypothesis, Marsh (1990) notes that in the absence of information relevant to valuations, excessive turnover will hurt performance of asset managers, and reaction to relevant information on firms' long-term prospects, which itself generates turnover, is a key function of markets. High stock market ratings of drug companies, with large R&D expenditures and long product lead times, would seem to tell against the hypothesis. More recently, the willingness of institutional investors to hold shares in Internet companies, despite their being expected to make losses for some years, is further contrary evidence. Indeed, markets seem to favour capital gains over dividends (Levis 1989), and some research suggests that announcement of capital expenditure or R&D boosts share prices (McConnell and Muscarella 1985).

The data for holding periods of equity by institutional investors do not indicate excessively short holding periods. U.K. pension funds, for example, had a turnover rate for domestic equities of around 40% in 1998, implying an average holding period of around 2.5 years[34].

On balance, current evidence does not appear to favour the short-termism hypothesis, but two caveats should be mentioned: First, the recent enthusiasm for Internet and IT firms that are expected to make profits only in the long term was apparently a bull market phenomenon rather than a structural change in approach by investors. Second, even if short termism does not exist, effects may ensue if managers behave as if it does, which Marsh (1990) admits may be the case in countries such as the United Kingdom. This raises an important wider point, namely that corporate governance and institutional investors can influence the whole corporate sector, e.g. in terms of dividends, investment and productivity, and not just targeted firms in takeovers, LBOs or governance initiatives.

In the context of market control via debt, the question arises as to whether institutions have actively encouraged increased leverage, with potential impact on performance. Research on the influence of institutional investors on debt levels is inconclusive. Firth (1995) shows that the presence of institutional shareholders tends to have a positive influence on the debt/assets ratio, suggesting they encourage firms to lever up. But Grier and Zychowicz (1994) find a negative effect. They suggest that direct discipline by institutional investors (see the discussion below of direct control via equity) acts as a substitute for debt. One possible reason for the difference is that Firth's data are from the peak of the popularity of leverage (1987–1989), while Grier and Zychowicz cover a longer period (1984–

[33]See also Schleifer and Vishny (1990).

[34] However, these numbers may not be an accurate indication for the overall portfolio; trading of the core portfolio may be low, or it may even be indexed, while those securities that are actively traded may turn over more rapidly than these estimates would suggest.

1988) including years when pressure for leverage was less intense.

In the context of direct control via equity, the effectiveness of shareholder activism is a question of lively debate in the United States; the bulk of empirical work seems to justify a degree of scepticism. On the positive side, Wahal (1996), in a sample of forty-three cases, found that efforts by institutions to promote organizational change via negotiation with management (as opposed to proxy proposals) are associated with gains in share prices. Strickland et al. (1996) report that firms that were targeted for pressure by the United Shareholders Association[35] experienced positive abnormal stock returns, although corporate governance proposals per se had no effect.

Del Guercio and Hawkins (1999) analysed shareholder proposals of large and active funds over 1987–1993. They sought to take into account the fact that the tactics adopted by different institutional investors may vary because of the constraints on their investment strategies. For example, an index fund might seek via shareholder proposals to boost the overall performance of the whole market (for example, by improving overall governance standards) rather than solely seeking to improve performance of those firms in which they invest. Externally managed funds are more likely to seek publicity for their governance aims than those that are internally managed, for which activism and trading can be profitably coordinated. Del Guercio and Hawkins (1999) found that companies receiving shareholder proposals experienced a higher frequency of governance events such as turnover of top managers, shareholder lawsuits, asset sales, and restructuring. CALPERS initiatives had much more leverage than those for other funds. Contrary to popular belief, the results suggested that funds are value maximizing in their corporate governance activities and are not politically motivated.

On the negative side, Del Guercio and Hawkins found no evidence that activism had a significant effect on stock returns over the three years following the proposals. In earlier work, Wahal (1994) had surveyed activism by nine public pension funds over the 1987–1993 period and also concluded that there was no evidence of improvement in the long-term stock price performance of targeted firms, which rather continued to decline for three years after targeting. Gillan and Starks (1995) found some positive returns in the short term but no statistically significant positive returns over the long term, leading them to question the overall effectiveness of shareholder activism. M. P. Smith (1996), looking at the firms that had been targeted by CALPERS, found that activism again led to no statistically significant improvement in performance of the companies concerned. On the other hand, activism had led to changes in that 72% of targets had adopted proposed governance structure resolutions or made changes sufficient to warrant a settlement. Moreover, there was a statistically significant increase in shareholder wealth; CALPERS gained an estimated $19 million over 1989-

[35]Note that this is actually a coalition of small investors rather than an institutional investor per se.

1993 at a cost to itself of $3.5 million. Karpoff et al. (1996) found that shareholder initiatives were well targeted on firms with atypically poor prior performance but had little effect on operating returns, company share, values, and top management turnover; the only exception was a significant improvement in returns on assets for the targets relative to a control group.

Monks (1997) explains the ineffectiveness of corporate governance activity in raising returns by reference to the political nature of public pension funds. While they are well placed to raise fairness issues such as excessive managerial remuneration, the incentive structure of trustees is not such as to encourage the long-term pressure on management that is needed to obtain positive excess returns in the long term. More effective institutional pressure may be exerted by so-called relationship investors such as Warren Buffett and the LENS fund. The effectiveness of such funds is underpinned by the background of their managers in business, commitment, and unwillingness to be distracted. But as Monks (1997) noted, partnerships between relationship investors and public funds have at times been profitable.

Evidence from outside the United States on the effectiveness of corporate governance initiatives is sparse, but Faccio and Lasfer (2000) show that the monitoring role of U.K. pension funds is concentrated among mature and low-performing firms and that in the long run, the firms in which pension funds have large stakes markedly improve their stock returns.

As regards empirical evidence of a decline in *direct control via debt*, Gorton and Schmid (1996), attribute a disappearance of the favourable effects of German bank equity holding on firm performance between 1974 and 1985 to disintermediation, reductions in equity holdings by banks, and greater interbank competition. All of these were thought to weaken banks' oversight over management.[36]

A general comment on these results is that they are generally dependent on a distinctive effect being detectable on the firms subject to specific corporate governance action, relative to the market as a whole. In fact, if one takes the case for the disciplinary effects of corporate governance seriously, there should be effects on all firms, which in some cases might actually obscure the specific effects sought in these studies. Indeed, some studies such as Firth (1976) have shown a strong spillover effect, in this case from earnings announcements to the market as a whole, which could be reproduced for corporate governance events. We now go on to address this issue by presenting results on macro data.

[36]Block holding was still found to have a favourable influence on companies' performance.

6 Estimation of the effects of institutionalisation on financial markets and the corporate sector

The above survey has indicated that growth of institutional investors may have major effects on the performance of the corporate sector. Examples include the following:

- The distribution of profits in the form of dividends should be stimulated, rather than their being ploughed back into potentially unremunerative investments.
- Capital accumulation itself may accordingly be lower in the presence of institutional shareholders than would otherwise be the case, other things being equal.
- On the other hand if the efficient use of capital and labour is ensured by governance systems driven by institutional investment, one would anticipate that productivity growth might be improved.
- Pressure by institutional shareholders is expected for example to improve overall profitability via increased efficiency. This may be apparent in indicators such as share prices or the return on equity.

In this section we undertake an empirical investigation of these hypotheses at a macro level for the G-7+ countries plus Australia (G-7+ for short), as well as on the subgroups of the Anglo Saxon and CEJ countries. We estimate the effects of high and rising levels of institutional ownership, be it domestic or foreign, on aspects of corporate performance. These variables, being in the form of proportions, are independent of the level of share prices and purely indicate the changing nature of ownership of the outstanding volume of securities.

The exercise of course contrasts strongly with the firm level studies outlined in Section 5. However, we would contend that the results are complementary, if the view is taken that the effects of takeovers, institutional activism etc are not just apparent in the performance of targeted firms but also in the wider economy. This may plausibly be the case of managers of “unaffected” firms nonetheless change their behaviour in response to the threat of such action. There remain grounds for caution, for example we only have eight countries (and four Anglo Saxon ones); deregulation of product markets could also lead to effects on productivity (although it is less likely to affect dividend distribution or investment); and our “conventional independent variables” cannot perfectly capture the normal developments in the dependent variables in question.

The overall specifications are set in an error-correction format, with normal macroeconomic variables to determine the variable in question, and with the share of foreign and domestic life and pension funds in total equity as additional regressors. As noted, mutual funds are omitted from our general

results owing to lack of consistent data; we add results including mutual funds as a variant for Canada, the UK and US only at the end of this section.

By this means, we seek to capture the influence of new purchases from other holders and the long run level of institutional holdings, respectively. There is clearly a potential issue of reverse causality, meaning the results need careful interpretation. In other words, there is a need to ensure that we are not merely capturing the investment-response of institutions to aspects of performance already apparent in the outturns. This may in particular affect the difference term; since the level variable is taken with a lag it should be less vulnerable to such misinterpretation.

The estimates were made using a cross-section weighted GLS balanced panel, with fixed effects for each country and cross section weights. The cross-section weights allow for the common disturbances that affect the panel, such as world economic growth, growth in world trade, share prices and global bond yields. We considered this more appropriate than the alternative seemingly unrelated regressions (SUR) given there is a clear relation between equations. The fixed effects should deal with the inevitable heterogeneity between countries in the panel, in terms of levels of the variables concerned. The standard errors are White heteroskedasticity consistent.

Table 6 shows panel unit root tests (undertaken according to the method of Im et al (1997), to average out the individual ADF statistics). The results indicate that the variables are all 1(1) in levels, other than the real return on equity and real share price volatility. This result includes the shares of institutional investors. Whereas these could obviously not be trended in the long run, it was to be expected from Charts 1-8 that they would be seen as trended over this period. One surprising result is that net investment, defined as the first difference of the capital stock, is stationary. In practice, our dependent variable in the investment equation is the first difference of net investment. Meanwhile the real long-term interest rate is non-stationary, probably due to the impact of inflation on real rates in the 1970s. These overall results support our error correction framework, which permits separate discussion of short and long run effects of shares of equity on the variable in question.

We started with a test regression on GDP growth itself (not reported in detail). As it would appear unlikely that institutional shares of equity impact on growth, this enabled us to assess whether there were spurious effects linked to investment patterns, and hence that we are merely picking up a form of reverse causality from the real economy to the institutional share. The equation was specified in terms of the first difference of the log of real GDP, on a lagged level and difference of the same variable and the four institutional-share term. In none of the regressions – for the G-7+, CEJ and the Anglo Saxon countries – was any of the institutional share terms even remotely significant. This result offers some

comfort that elsewhere one is capturing genuine interaction between the variables (of course the specification in the form of lags should also help avoid this problem).

One point emphasised above is that institutional investors may seek higher dividend distribution, especially in the case that there is considered to be “free cash flow” and a lack of profitable investment opportunities. Table 7 accordingly shows estimates for growth of real dividends. In this case we include the lagged real dividend flow and lagged GDP as error correction terms as well as the growth of GDP (current and lagged) in order to allow for normal cyclical and trend patterns in dividends. The results for the G-7+ bring out the dynamics and long run relationship between GDP and real dividends. The current difference of GDP has a coefficient of well over one, suggesting that the cyclical “beta” of dividends is high (they rise more than GDP in booms and fall more in recessions). The lagged levels terms do not suggest long run homogeneity with GDP. As regards the institutional investment terms, the share of foreign institutions has a significant coefficient both in the difference and the level terms. This suggests that pressure from foreign institutions for higher real dividend distributions may have played an active role across the G-7+. Meanwhile the difference of domestic institutions term is negative.

Looking at the results for the Anglo Saxon and CEJ, the dynamic effects of GDP growth are consistent across the panel, as is the significance of the lagged dividend (partial adjustment) term. However, lagged GDP is only significant in CEJ, where long run homogeneity with real dividends does seem to hold. The results for institutional shares are quite different. In the Anglo Saxon countries, the significant positive effect comes from the lagged level of the domestic institutions and foreign institutions ratios. This implies that institutional pressure is effective in raising real dividends. In the CEJ countries, only the lagged domestic share is positive, suggesting foreign institutions do not exert strong influence, perhaps due to the barriers to activism and discrimination against minorities highlighted in Section 2.

The next issue concerns capital accumulation. Do institutions exercise restraint on investment, given the risk that it may become unprofitable? Accumulation is defined here in terms of the difference of the log of the real capital stock (i.e. the growth of capital). The dependent variable in Table 8 is the first difference of this variable. We have lagged accumulation, the lagged capital stock and lagged GDP, as well as current and lagged differences of real GDP as real economy variables. This gives a standard Jorgensen flexible accelerator model (Ashworth and Davis 2001). We experimented with a lagged real interest rate but it was in all cases insignificant. The conventional terms bear usual signs and magnitudes, although it is interesting to note that the accelerator terms (GDP growth) are much stronger is the CEJ than the Anglo Saxon countries. This could link to the point that in a relationship banking system, investment is freer to respond to growth with readily available debt finance. Lagged

accumulation is negative, as is conventional in an error correction equation where the dependent variable is a first difference.

In terms of the share of institutional holdings, the G-7+ result for the domestic sector was negative, while the foreign share was positive. The difference terms were not significant. On the face of it, the domestic sector is related with lower investment, and the foreign sector with higher. It is the former which exerts more restraint. This result carries through to the CEJ countries where the difference of the share of foreign institutions is also positive. However, in the Anglo Saxon ones, all the institutional share terms are negative. The implication is that institutional investors exert a strong and consistent negative influence on accumulation in those countries.

A point that could be made about this estimate is that the dependent variable differs from the more usual gross domestic fixed capital formation. For our purposes, we consider the current approach to be superior, as we wish to investigate whether institutions are in a sense encouraging or restraining capital accumulation and capital intensity in the economy and its production processes. However, as a cross check we also estimated a more conventional investment function, which is reported in Table 15 below.

The third estimate is for Total Factor Productivity (Table 9). Do institutions help to generate higher productivity via corporate governance pressure on firms to maximise profits, efficiency and competitiveness? In this case we simply estimate a distributed lag with GDP together with a partial adjustment term. Note that TFP growth is estimated as $100(\Delta \ln Y - \alpha \Delta \ln L - (1-\alpha)\Delta \ln K)$, where Y is real GDP, L is employment and K the real capital stock. α is set to 2/3, which is approximately labour's income share. The level is the accumulation of this variable. The terms in growth of GDP are significant, suggesting that there is a cyclical pattern to this variable. Lagged TFP is also significant. For institutional shares, in this case, there are again no significant difference terms. The levels terms show a positive effect from domestic institutions, and a negative effect from foreign ones. This suggests that TFP may be stimulated by domestic institutions' activity and corporate governance pressure, while foreign investors' holdings link to lower TFP growth. For Anglo Saxon countries, this result again holds, albeit with the coefficient on domestic institutions being only significant at the 90% level. In CEJ, both institutions' share is significant with domestic positive and foreign negative. In CEJ, the difference terms in the institutional share also come through with the same signs as for the levels.

Besides these real-economy performance related variables, we also estimated the impact of institutional ownership on real share prices and returns on equity directly (Tables 10 and 11). Here there is clearly a risk that the difference terms will reflect investment timing and cyclical factors

(stimulating institutions to buy from other shareholders) rather than changes in underlying fundamentals. Nevertheless, since equity returns and prices reflect expected profitability, it remains interesting to trace the relationship.

The equation for real share price changes includes the growth and level of GDP to capture cyclical and trend variables relating to profits. We also include the lagged equity price and the real long-term interest rate (as a discount rate proxy) and volatility (for the risk premium). For the G-7+, there is a strong cyclical effect, while the lagged terms also are significant. Volatility is shown to have a negative effect on share prices (the level of the real long rate is not significant). The effect of equity shares is that a rise in the domestic institutional investor share is associated with a fall in share prices. We suggest that this may reflect market timing, with institutions buying (and small investors selling) when share prices are weak. This is consistent with rational contrarian investment and risk neutrality, and tells against the idea that institutions are on average prone to herding and positive feedback trading.

For the CEJ, we have similar patterns for the fundamental variables and the difference of domestic holdings. Neither volatility nor the real long rate have significant effects on share prices. In the Anglo Saxon countries, volatility and the real long rate are both correctly signed and significant. We again have only the growth of domestic institutional holdings with a negative sign.

Results for the real return on equity are broadly similar, (albeit less well determined according to the R-bar-2) unsurprisingly since the share price rise is the major component of the return on equity. In this case the G-7+ result has negative signs on the rise in domestic holdings – as for the equity prices – and the lagged foreign share. This result is repeated in the CEJ, suggesting institutions increase their share when the ROE is low, as would a contrarian investor, while high foreign holdings are associated with low returns on equity. In the Anglo Saxon countries, domestic institutions' share is positive.

Table 12 summarises the results outlined above, while in Tables 13 and 14 we provide estimates of the effects of mutual fund shares as well as foreign and long term institutions, for the countries where data are available, namely Canada, the UK and the US. The results provide strong support for differential effects of types of institution. In the dividends equation, it is again the level of long term institutional holdings that entails higher dividends, while a rise in the share of mutual funds cuts the growth rate of real dividends in the short term. Mutual fund investors may be more interested in short term capital gains than are life and pension funds. In the equation for investment growth, it is again the level of domestic long term institutions that stands out in restraining it, while other sectors give no significant results. Concerning TFP growth, both long term institutions and mutual fund shares have a positive influence, with the latter being greater. This may link to the greater incidence of takeovers

when institutions are dominant in capital markets, which either raises productivity of target firms directly or more generally raises overall productivity by "keeping managers on their toes". As regards equity prices, there is a positive short run relation to foreign holdings and negative to long term institutions. In the long term, both mutual fund shares and foreign shares are shown to boost equity prices (given the other determinants in the equation) while life and pension holdings depress them. There are no significant results for returns on equity.

Table 15 reports results of a conventional investment function, where the dependent variable is the difference of the log of gross fixed investment. Hence, we include depreciation as well as new net investment. The results are broadly similar to those reported in Table 7; notably, there remains a much larger accelerator in CEJ. The G-7 estimate features a significant lagged real interest rate, although it is not significant in the sub groups. We find that institutional growth in the Anglo-Saxon countries again has a negative effect on investment (expressed in growth of life and pension holdings and the level of the foreign holding). When mutual funds are included for the Canada, the UK and US their level also plays a restraining role. In Continental Europe and Japan, the level of life and pension holdings has a positive effect.

We would argue that this work is consistent with a disciplining role of institutions in the Anglo Saxon countries, particularly life insurers and pension funds. They exert restraint of investment, and lead to a boost to dividends and to TFP. The trend for corporate use of equity to rise, for equity shares of institutions to increase, and for traditional corporate governance structures to break down in CEJ, suggests these results could hold there in the future. Further work could include estimation after 1980 (to assess the effect of the turbulent 1970s on the results), use of patents, takeovers, R and D and profit mark-up as possible dependent variables.

Conclusions

The growing dominance of equity holdings by institutional investors, both domestic and international, is casting a sharp focus on their activities and owners and monitors of firms. The theory and empirical work on corporate governance suggests that their typical stakes of up to 5% are precisely those needed to encourage an improvement in company performance. The Anglo-Saxon countries are showing an increase in direct influence of institutions in place of the previous reliance on the takeover mechanism to discipline managers. Whereas the systems in Continental Europe and Japan remain more firmly in the bank-relationship based governance paradigm, such differences should not be exaggerated, and some convergence is discernible on a modified form of the Anglo Saxon paradigm where institutions are the primary actors in corporate governance generally. In Europe, EMU will provide a major spur to such convergence.

By improving corporate governance, institutions could boost not only the share price and performance of the companies they invest in, but also elements of corporate sector performance detectable at a macroeconomic level. Indeed, if such macro effects are important, they may explain the mixed results of the effect of takeovers and other activism at a micro level; if performance is improved across the board, because managers of "unaffected" firms nonetheless change their behaviour in response to the thereat of such action, differential effects on target firms will be obscured. More specifically, our empirical results link the development of institutional investors to important indicators of corporate sector performance, suggesting inter alia increased dividend distribution, less fixed investment and higher productivity growth. Results suggest that life insurers and pension funds are most influential. The fact that we include conventional determinants of the variables in question underpins our results. although we also note some grounds for caution, such as a relatively small sample, meaning further work is warranted.

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Table 1: Corporate equity holders by sector end-2000 (percent of total)

	UK	US	Germany	Japan	Canada	France	Italy
Households	20	35	17	18	41	21	35
Companies	4	14	31	24	25	35	28
Public sector	0	1	3	2	3	3	6
Foreign	37	9	16	18	6	20	14
Financial	39	41	33	38	25	21	17
Of which:							
Banks	2	2	12	12	3	12	8
Life/pension	27	23	8	17	12	4	4
Mutual funds	9	16	13	3	8	5	6

Source: National balance-sheet data."Financial auxiliaries" used for mutual funds in Germany. Share of banks, life/pension and mutual funds may not add tol financial sector given holdings by other financial institutions.

Table 2: Aspects of financial structure 1998 (1970)

	Size indicator (total financial assets/GDP)	**Financial intermediation ratio**	**Of which: Bank intermediation**	**Of which: Institutional intermediation**
Germany	6.6 (2.9)	47% (44%)	74 (84)	23 (10)
France	9.2 (4.4)	41% (34%)	66 (94)	29 (5)
Italy	5.6 (3.4)	35% (36%)	92 (98)	10 (6)
United Kingdom	10.2 (4.7)	58% (32%)	46 (58)	40 (28)
Canada	7.3 (4.7)	40% (29%)	42 (45)	36 (23)
Japan	8.9 (3.8)	45% (39%)	32 (45)	19 (10)
United States	8.6 (4.1)	44% (33%)	21 (58)	46 (31)

Source: National balance-sheet data

Table 3: Financial instruments as a percent of GDP, 1998 (1970)

	Equities	**Bonds**	**Deposits**	**Loans**
Germany	87 (28)	114 (23)	147 (89)	178 (97)
France	275 (92)	85 (15)	202 (105)	205 (210)
Italy	137 (37)	130 (45)	98 (95)	107 (119)
United Kingdom	235 (83)	99 (37)	158 (47)	175 (66)
Canada	200 (94)	115 (77)	97 (74))	112 (79)
Japan	59 (27)	119 (26)	219 (97)	206 (113)
United States	181 (85)	148 (68)	56 (65)	113 (80)

Source: National balance-sheet data

Table 4: Household sector assets 1998 (1970)

	Equities	**Bonds**	**Deposits**	**Institutional investment**
Germany	9 (10)	13 (8)	40 (59)	32 (15)
France	30 (27)	2 (6)	29 (49)	31 (6)
Italy	30 (11)	18 (19)	23 (45)	10 (8)
United Kingdom	15 (24)	1 (7)	21 (34)	55 (23)
Canada	30 (27)	4 (14)	30 (31)	34 (22)
Japan	4 (12)	2 (6)	60 (55)	28 (14)
United States	23 (36)	6 (13)	13 (28)	50 (22)

Source: National balance-sheet data

Table 5: Corporate sector liabilities, 1998 (1970)

	Equities	**Bonds**	**Loans**
Germany	36 (27)	2 (3)	44 (47)
France	63 (41)	5 (3)	19 (54)
Italy	54 (32)	1 (8)	37 (60)
United Kingdom	72 (49)	7 (7)	21 (15)
Canada	51 (46)	17 (12)	17 (15)
Japan	21 (16)	7 (2)	45 (48)
United States	64 (55)	12 (14)	9 (15)

Source: National balance-sheet data

Table 6: Panel unit root tests

Based on Im et al (1997), averaging individual ADFs
** indicates stationarity at 5%, * at 10%

	G7+	Anglo-Saxon	CEJ
DLRDIV	-3.5625**	-4.1**	-3.025**
LRDIV	-1.9625	-2	-1.925
DLGDP	-3.725**	-3.725**	-3.725**
LGDP	-0.975	-0.175	-1.775
DEQLPS	-3.675**	-3.425**	-3.925**
EQLPS	-1.525	-1.7	-1.35
DEQFRS	-3.45**	-4.05**	-2.85*
EQFRS	-1.225	-1.05	-1.4
DLTFP	-3.775**	-3.45**	-4.1**
LTFP	-1.0625	-0.225	-1.9
DLREQP	-3.55**	-3.525**	-3.575**
LREQP	-2.125	-2.25	-2
ROE	-4.425**	-4.725**	-4.125**
RLR	-1.95	-1.825	-2.075
VOL	-3.375**	-3.675**	-3.075**
DDLKS	-5.375**	-5.3**	-5.45**
DLKS	-3.75**	-3.725**	-3.775**
LKS	-2.275	-2.35	-2.2
DEQMFS		-2.87*	
EQMFS		-0.53	
LI	-0.475	-0.225	-0.725
DLI	-3.775**	-4.0**	-3.55**

Key: G-7+ indicates results for Australia, Canada, France, Germany, Italy, Japan, UK and US; Anglo-Saxon indicates results for Australia, Canada, UK and US; CEJ (Continental Europe and Japan) indicates results for France, Germany, Italy and Japan; LRDIV, log of real dividends, LGDP, log of real gross domestic product , EQLPS, share of equity held by life and pension funds; EQFRS, share of equity held by foreign shareholders; LTFP log of total factor productivity, LREQP, log of real equity price, ROE real return on equity, RLR real long term interest rate (long rate less current CPI inflation); VOL, standard deviation of real equity price (equity index deflated by CPI), LKS, log of real capital stock, EQMFS share of equity held by mutual funds, LI log of real fixed investment. “D” indicates first difference operator.

Table 7: Results of panel estimation for log-difference of real dividends

GLS, Fixed effects, cross-section weights, White heteroskedasticity consistent standard errors in parentheses, ** indicates significance at 5% level and * at 10%.

	G-7+	Anglo-Saxon	CEJ
DEQLPS	-0.132 (0.075)*	-0.046 (0.124)	1.04 (0.71)
DEQFRS	0.457 (0.229)**	0.032 (0.43)	0.06 (0.43)
EQLPS(-1)	0.038 (0.04)	0.173 (0.064)**	0.606 (0.34)*
EQFRS(-1)	0.43 (0.093)**	0.359 (0.144)**	0.035 (0.41)
DLGDP	1.55 (0.098)**	1.55 (0.11)**	2.21 (0.54)**
DLGDP(-1)	0.72 (0.095)**	0.616 (0.108)**	1.96 (0.56)**
LRDIV(-1)	-0.199 (0.028)**	-0.163 (0.036)**	-0.27 (0.058)**
LGDP(-1)	0.062 (0.019)**	-0.021 (0.023)	0.197 (0.047)**
R-bar-2	0.414	0.49	0.37
SE	0.127	0.082)	0.154
Observations	216	112	108

Key: G-7+ indicates results for Australia, Canada, France, Germany, Italy, Japan, UK and US; Anglo-Saxon indicates results for Australia, Canada, UK and US; CEJ (Continental Europe and Japan) indicates results for France, Germany, Italy and Japan; LRDIV, log of real dividends, LGDP, log of real gross domestic product , EQLPS, share of equity held by life and pension funds; EQFRS, share of equity held by foreign shareholders; LTFP log of total factor productivity, LREQP, log of real equity price, ROE real return on equity, RLR real long term interest rate (long rate less current CPI inflation); VOL, standard deviation of real equity price (equity index deflated by CPI), LKS, log of real capital stock, EQMFS share of equity held by mutual funds, LI log of real fixed investment. “D” indicates first difference operator.

Table 8: Results of panel estimation for capital accumulation (twice-differenced log real capital stock)

GLS, Fixed effects, cross-section weights, White heteroskedasticity consistent standard errors in parentheses, ** indicates significance at 5% level and * at 10%.

	G-7+	Anglo-Saxon	CEJ
DEQLPS	0.157 (0.237)	-0.118 (0.0028)**	0.217 (0.3)
DEQFRS	0.183 (0.292)	-0.029 (0.0069)**	0.539 (0.27)**
EQLPS(-1)	-0.271 (0.129)**	-0.06 (0.004)**	-1.19 (0.23)**
EQFRS(-1)	0.697 (0.2)**	-0.077 (0.011)**	1.11 (0.21)**
DLGDP	6.49 (0.27)**	0.097 (0.008)**	6.63 (0.23)**
DLGDP(-1)	0.614 (0.57)	0.054 (0.0009)**	-0.42 (0.82)
LKS(-1)	-0.275 (0.022)**	-0.092 (0.018)**	-0.29 (0.028)**
DLKS (-1)	-0.736 (0.066)**	-0.683 (0.074)**	-0.747 (0.1)**
LGDP (-1)	0.064 (0.024)**	0.082 (0.015)**	0.019 (0.026)
R-bar-2	0.744	0.477	0.812
SE	0.217	0.211	0.272
Observations	216	112	108

Key: G-7+ indicates results for Australia, Canada, France, Germany, Italy, Japan, UK and US; Anglo-Saxon indicates results for Australia, Canada, UK and US; CEJ (Continental Europe and Japan) indicates results for France, Germany, Italy and Japan; LRDIV, log of real dividends, LGDP, log of real gross domestic product , EQLPS, share of equity held by life and pension funds; EQFRS, share of equity held by foreign shareholders; LTFP log of total factor productivity, LREQP, log of real equity price, ROE real return on equity, RLR real long term interest rate (long rate less current CPI inflation); VOL, standard deviation of real equity price (equity index deflated by CPI), LKS, log of real capital stock, EQMFS share of equity held by mutual funds, LI log of real fixed investment. “D” indicates first difference operator.

Table 9: Results of panel estimation for log-difference of total factor productivity

GLS, Fixed effects, cross-section weights, White heteroskedasticity consistent standard errors in parentheses, ** indicates significance at 5% level and * at 10%.

	G-7+	Anglo-Saxon	CEJ
DEQLPS	0.003 (0.017)	-0.037 (0.02)*	0.119 (0.048)**
DEQFRS	-0.04 (0.027)	0.043 (0.08)	-0.062 (0.027)**
EQLPS(-1)	0.034 (0.007)**	0.025 (0.0086)**	0.153 (0.042)**
EQFRS(-1)	-0.054 (0.014)**	-0.045 (0.017)**	-0.044 (0.027)*
DGDP	0.61 (0.027)**	0.537 (0.034)**	0.697 (0.043)**
DGDP(-1)	-0.17 (0.022)**	-0.153 (0.037)**	-0.184 (0.024)**
LTFP(-1)	-0.071 (0.0085)**	-0.132 (0.04)**	-0.0396 (0.012)**
LGDP(-1)	0.025 (0.0049)**	0.049 (0.013)**	0.009 (0.008)
R-bar-2	0.802	0.7	0.892
SE	0.009	0.009	0.0096
Observations	216	112	108

Key: G-7+ indicates results for Australia, Canada, France, Germany, Italy, Japan, UK and US; Anglo-Saxon indicates results for Australia, Canada, UK and US; CEJ (Continental Europe and Japan) indicates results for France, Germany, Italy and Japan; LRDIV, log of real dividends, LGDP, log of real gross domestic product , EQLPS, share of equity held by life and pension funds; EQFRS, share of equity held by foreign shareholders; LTFP log of total factor productivity, LREQP, log of real equity price, ROE real return on equity, RLR real long term interest rate (long rate less current CPI inflation); VOL, standard deviation of real equity price (equity index deflated by CPI), LKS, log of real capital stock, EQMFS share of equity held by mutual funds, LI log of real fixed investment. “D” indicates first difference operator.

Table 10: Results of panel estimation for log-difference of real equity prices

GLS, Fixed effects, cross-section weights, White heteroskedasticity consistent standard errors in parentheses, ** indicates significance at 5% level and * at 10%.

	G-7+	Anglo-Saxon	CEJ
DEQLPS	-4.1 (0.53)**	-3.19 (0.74)**	-8.53 (1.9)**
DEQFRS	0.76 (0.5)	0.58 (0.69)	0.82 (1.21)
EQLPS(-1)	-0.286 (0.31)	-0.3 (0.4)	-1.66 (1.19)
EQFRS(-1)	-0.388 (0.354)	-0.24 (0.43)	-0.6 (0.63)
DGDP	2.077 (0.58)**	2.17 (0.9)**	2.45 (.14)
DGDP(-1)	-1.77 (0.49)**	-1.74 (0.7)**	-2.05 (1.4)
LGDP(-1)	0.09 (0.09)	0.18 (0.12)	0.11 (0.16)
LREQP(-1)	-0.15 (0.032)**	-0.16 (0.05)**	-0.122(0.07)*
RLR	-0.0067 (0.005)	-0.012 (0.006)**	0.0057 (0.01)
RLR(-1)	0.017 (0.005)**	0.016 (0.0076)**	0.011 (0.008)
VOL	-0944 (0.3)**	-1.49 (0.36)**	0.138 (0.57)
VOL(-1)	0.348 (0.17)**	0.5 (0.23)**	0.214 (0.44)
R-bar-2	0.5	0.58	0.42
SE	0.2	0.15	0.24
Observations	216	112	108

Key: G-7+ indicates results for Australia, Canada, France, Germany, Italy, Japan, UK and US; Anglo-Saxon indicates results for Australia, Canada, UK and US; CEJ (Continental Europe and Japan) indicates results for France, Germany, Italy and Japan; LRDIV, log of real dividends, LGDP, log of real gross domestic product , EQLPS, share of equity held by life and pension funds; EQFRS, share of equity held by foreign shareholders; LTFP log of total factor productivity, LREQP, log of real equity price, ROE real return on equity, RLR real long term interest rate (long rate less current CPI inflation); VOL, standard deviation of real equity price (equity index deflated by CPI), LKS, log of real capital stock, EQMFS share of equity held by mutual funds, LI log of real fixed investment. “D” indicates first difference operator.

Table 11: Results of panel estimation for return on equity

GLS, Fixed effects, cross-section weights, White heteroskedasticity consistent standard errors in parentheses, ** indicates significance at 5% level and * at 10%.

	G-7+	Anglo-Saxon	CEJ
DEQLPS	-262.2 (96.9)**	-98.7 (83.4)	-905 (214)**
DEQFRS	2.2 (104)	79.1 (119.5)	2.8 (127.7)
EQLPS(-1)	45.3 (35.3)	54.1 (32.4)*	-102 (114)
EQFRS(-1)	-82.0 (37.2)**	-47.4 (32.1)	-144 (63)**
DGDP	73.2 (72.7)	129.7 (102.1)	123.9 (134)
DGDP(-1)	-220.4 (74.4)**	-240.9 (97.8)**	-217 (135)
ROE(-1)	-0.054 (0.074)	-0.1 (0.11)	-0.053 (0.079)
LGDP(-1)	2.82 (10.6)	17.9 (10.1)	-11.3 (16.3)
RLR	-1.21 (0.97)	-2.8 (1.0)**	1.05 (1.05)
RLR(-1)	1.41 (0.77)*	1.4 (0.9)	1.2 (0.76)
VOL	-90 (38.5)**	-181.8 (34.5)	69.7 (62.9)
VOL(-1)	74.5 (38.5)	148 (49.4)**	-16.7 (47.5)
R-bar-2	0.17	0.4	0.32
SE	24.8	19.7	27.4
Observations	216	112	108

Key: G-7+ indicates results for Australia, Canada, France, Germany, Italy, Japan, UK and US; Anglo-Saxon indicates results for Australia, Canada, UK and US; CEJ (Continental Europe and Japan) indicates results for France, Germany, Italy and Japan; LRDIV, log of real dividends, LGDP, log of real gross domestic product , EQLPS, share of equity held by life and pension funds; EQFRS, share of equity held by foreign shareholders; LTFP log of total factor productivity, LREQP, log of real equity price, ROE real return on equity, RLR real long term interest rate (long rate less current CPI inflation); VOL, standard deviation of real equity price (equity index deflated by CPI), LKS, log of real capital stock, EQMFS share of equity held by mutual funds, LI log of real fixed investment. “D” indicates first difference operator.

Table 12: Summary of results for institutional shares of equity

Equation	Difference of log real dividends	Difference of log TFP	Twice differenced log of capital	Difference of log real equity prices	Real return on equity
G-7+					
DEQLPS	Negative			Negative	Negative
DEQFRS	Positive				
EQLPS(-1)		Positive	Negative		
EQFRS(-1)	Positive	Negative	Positive		Negative
Anglo Saxon					
DEQLPS		Negative	Negative	Negative	
DEQFRS			Negative		
EQLPS(-1)	Positive	Positive	Negative		Positive
EQFRS(-1)	Positive	Negative	Negative		
CEJ					
DEQLPS		Positive		Negative	Negative
DEQFRS		Negative	Positive		
EQLPS(-1)	Positive	Positive	Negative		
EQFRS(-1)		Negative	Positive		Negative

Key: G-7+ indicates results for Australia, Canada, France, Germany, Italy, Japan, UK and US; Anglo-Saxon indicates results for Australia, Canada, UK and US; CEJ (Continental Europe and Japan) indicates results for France, Germany, Italy and Japan; LRDIV, log of real dividends, LGDP, log of real gross domestic product , EQLPS, share of equity held by life and pension funds; EQFRS, share of equity held by foreign shareholders; LTFP log of total factor productivity, LREQP, log of real equity price, ROE real return on equity, RLR real long term interest rate (long rate less current CPI inflation); VOL, standard deviation of real equity price (equity index deflated by CPI), LKS, log of real capital stock, EQMFS share of equity held by mutual funds, LI log of real fixed investment. “D” indicates first difference operator.

Table 13: Results of panel estimation for US, UK and Canada including mutual funds

GLS, Fixed effects, cross-section weights, White heteroskedasticity consistent standard errors in parentheses, ** indicates significance at 5% level and * at 10%.

Equation	DLRDIV	DLTFP	DDLKS
DEQLPS	0.07 (0.17)	-0.005 (0.03)	0.177 (0.58)
DEQMFS	-0.93 (0.28)**	-0.085 (0.09)	2.08 (1.6)
DEQFRS	0.16 (0.44)	0.056 (0.1)	-0.68 (1.6)
EQLPS(-1)	0.22 (0.103)**	0.031 (0.012)**	-0.7 (0.38)*
EQMFS(-1)	-0.033 (0.15)	0.075 (0.02)**	0.1 (0.68)
EQFRS(-1)	0.23 (0.22)	-0.036 (0.025)	0.47 (0.65)
DGDP	1.61 (0.17)**	0.49 (0.04)	7.4 (0.9)**
DGDP(-1)	0.52 (0.16)**	-0.135 (0.04)**	3.7 (0.9)**
LGDP(-1)	-0.0008 (0.06)	0.027 (0.017)	0.26 (0.17)
LRDIV(-1)	-0.12 (0.05)**		
LTFP(-1)		-0.095 (0.05)*	
LKS(-1)			-0.84 (0.09)**
DLKS (-1)			-0.32 (0.07)**
R-bar-2	0.53	0.76	0.83
SE	0.05	0.007	0.15
Observations	84	84	84

Key: G-7+ indicates results for Australia, Canada, France, Germany, Italy, Japan, UK and US; Anglo-Saxon indicates results for Australia, Canada, UK and US; CEJ (Continental Europe and Japan) indicates results for France, Germany, Italy and Japan; LRDIV, log of real dividends, LGDP, log of real gross domestic product , EQLPS, share of equity held by life and pension funds; EQFRS, share of equity held by foreign shareholders; LTFP log of total factor productivity, LREQP, log of real equity price, ROE real return on equity, RLR real long term interest rate (long rate less current CPI inflation); VOL, standard deviation of real equity price (equity index deflated by CPI), LKS, log of real capital stock, EQMFS share of equity held by mutual funds, LI log of real fixed investment. “D” indicates first difference operator.

Table 14: Results of panel estimation for US, UK and Canada including mutual funds

GLS, Fixed effects, cross-section weights, White heteroskedasticity consistent standard errors in parentheses, ** indicates significance at 5% level and * at 10%.

	DLREQP	ROE
DEQLPS	-1.9 (0.8)**	-58 (97)
DEQMFS	-0.6 (2.0)	131 (289)
DEQFRS	2.2 (1.3)*	50 (158)
EQLPS(-1)	-1.7 (0.5)**	50 (36)
EQMFS(-1)	5.4 (0.9)**	109 (75)
EQFRS(-1)	2.2 (0.6)**	-12 (40)
DGDP	-0.6 (1.0)	-15 (119)
DGDP(-1)	-0.9 (0.8)	-196 (112)*
LGDP(-1)	-0.72 (0.23)**	-6.1 (15.4)
RLR	-0.007 (0.008)	-2.4 (1.2)*
RLR(-1)	0.02 (0.008)**	2.09 (1.1)*
VOL	-2.5 (0.5)**	-205 (45)**
VOL(-1)	-0.1 (0.5)	173 (75)**
LREQP(-1)	-0.46 (0.08)**	
ROE (-1)		-0.036 (0.13)
R-bar-2	0.64	0.44
SE	0.13	15.9
Observations	84	84

Key: G-7+ indicates results for Australia, Canada, France, Germany, Italy, Japan, UK and US; Anglo-Saxon indicates results for Australia, Canada, UK and US; CEJ (Continental Europe and Japan) indicates results for France, Germany, Italy and Japan; LRDIV, log of real dividends, LGDP, log of real gross domestic product , EQLPS, share of equity held by life and pension funds; EQFRS, share of equity held by foreign shareholders; LTFP log of total factor productivity, LREQP, log of real equity price, ROE real return on equity, RLR real long term interest rate (long rate less current CPI inflation); VOL, standard deviation of real equity price (equity index deflated by CPI), LKS, log of real capital stock, EQMFS share of equity held by mutual funds, LI log of real fixed investment. “D” indicates first difference operator.

Table 15: Results of panel estimation for log-difference of real fixed investment

GLS, Fixed effects, cross-section weights, White heteroskedasticity consistent standard errors in parentheses, ** indicates significance at 5% level and * at 10%.

	G-7+	Anglo-Saxon	CEJ	UK, US, Canada
DEQLPS	-0.21 (0.21)	-0.23 (0.1)**	-0.088 (0.3)	-0.14 (0.08)*
DEQFRS	00076 (0.11)	0.019 (0.23)	0.09 (0.075)	0.25 (0.26)
DEQMFS				-0.16 (0.19)
EQLPS(-1)	0.006 (0.08)	0.008 (0.046)	0.37 (0.17)**	0.04 (0.056)
EQFRS(-1)	0.016 (0.072)	-0.135 (0.08)**	0.06 (0.082)	-0.24 (0.14)*
EQMFS(-1)				-0.43 (0.12)**
DLGDP	1.19 (0.17)**	0.05 (0.12)	1.78 (0.19)**	0.2 (0.14)
DLGDP(-1)	0.17 (0.15)	-0.66 (0.21)**	0.48 (0.16)**	-1.1 (0.2)**
LKS(-1)	0.023 (0.007)**	0.09 (0.013)**	0.01 (0.006)*	0.12(0.016)**
LI (-1)	-0.22 (0.032)**	-0.43 (0.053)**	-0.18(0.03)**	-0.5 (0.048)**
LGDP (-1)	0.3 (0.043)**	0.54 (0.08)**	0.22 (0.04)**	0.7 (0.074)**
RLR(-1)	-0.003 (0.001)**	-0.0018 (0.0011)	0.00018 (0.0017)	0.0001 (0.001)
R-bar-2	0.32	0.63	0.59	0.71
SE	0.046	0.052	0.04	0.045
Observations	216	112	108	84

Key: G-7+ indicates results for Australia, Canada, France, Germany, Italy, Japan, UK and US; Anglo-Saxon indicates results for Australia, Canada, UK and US; CEJ (Continental Europe and Japan) indicates results for France, Germany, Italy and Japan; LRDIV, log of real dividends, LGDP, log of real gross domestic product , EQLPS, share of equity held by life and pension funds; EQFRS, share of equity held by foreign shareholders; LTFP log of total factor productivity, LREQP, log of real equity price, ROE real return on equity, RLR real long term interest rate (long rate less current CPI inflation); VOL, standard deviation of real equity price (equity index deflated by CPI), LKS, log of real capital stock, EQMFS share of equity held by mutual funds, LI log of real fixed investment. “D” indicates first difference operator.

Chart 1: Institutional equity holdings in Germany

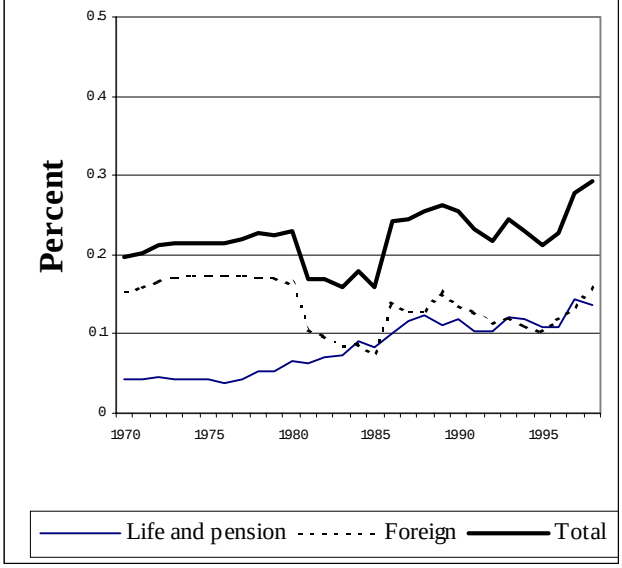


Chart 2: Institutional equity holdings in France

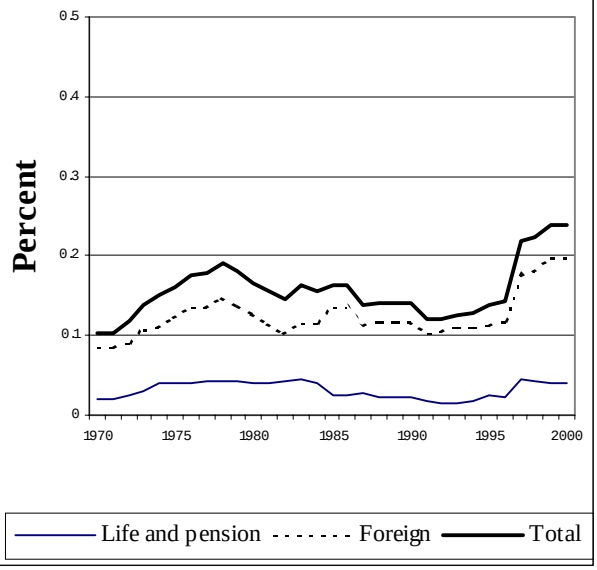


Chart 3: Institutional equity holdings in Italy

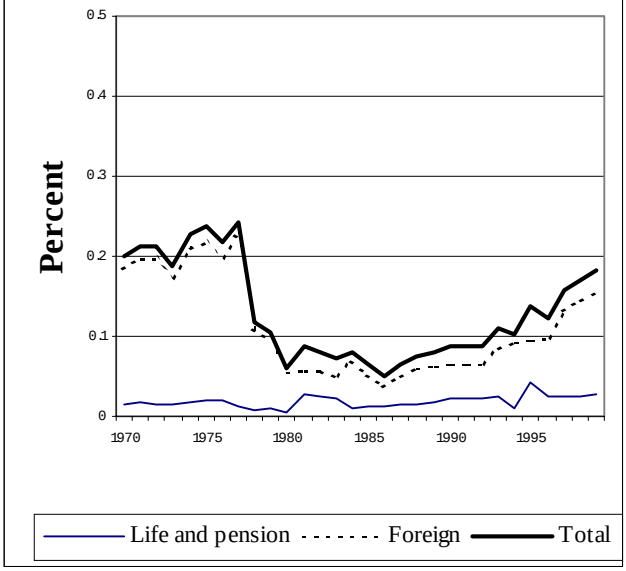


Chart 4: Institutional equity holdings in Japan

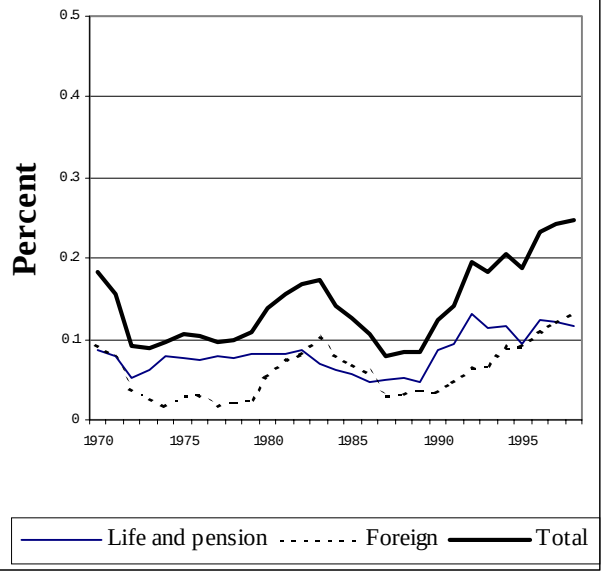
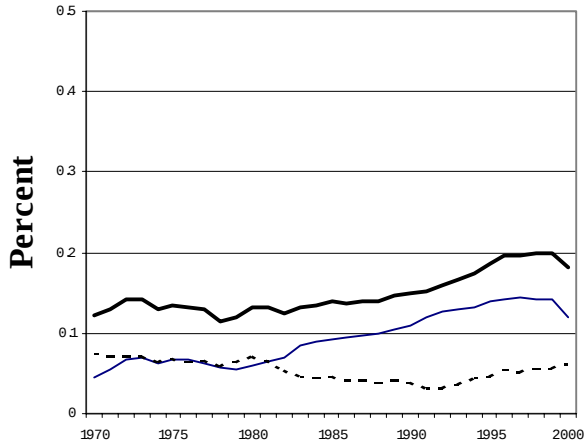
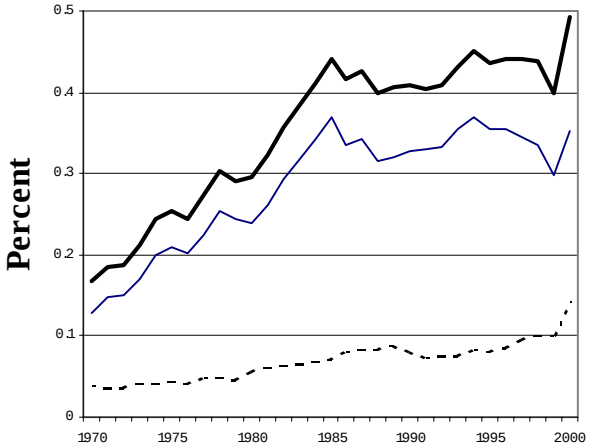


Chart 5: Institutional equity holdings in Canada



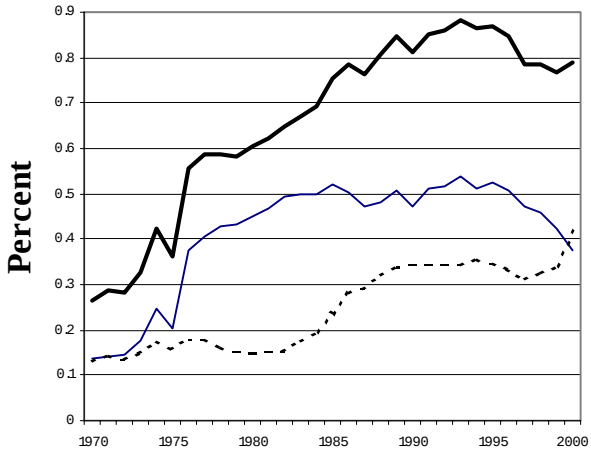
Life and pension ------- Foreign ——— Total

Chart 6: Institutional equity holdings in the United States



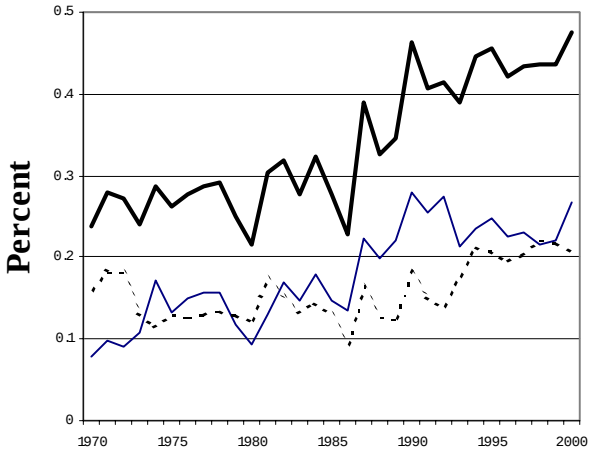
Life and pension ------- Foreign ——— Total

Chart 7: Institutional equity holdings in the United Kingdom



Life and pension ------- Foreign ——— Total

Chart 8: Institutional equity holdings in Australia



Life and pension ------- Foreign ——— Total