UK Investment and the Capital Market

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Abstract

This paper compares levels of investment in the UK with those in other developed countries, and considers whether differences in investment levels can be attributed to different structures of capital markets. As a share of GDP, investment has been lower in the UK than in most developed countries, with the exception of the USA, and this has consistently been the case over many years. The difference is partly but not wholly attributable to low levels of investment in housing and in the public sector. Important capital market differences certainly exist, notably concerning the role of the stock market, share ownership patterns, hostile takeover activity, and dividend payout ratios. One stylised fact is that investment by UK firms appears to be unusually sensitive to fluctuations in cash flow. Whether this reflects the impact of financing constraints, that could result in under-investment, or whether it reflects weaker control by shareholders over managers' investment decisions, that could result in over-investment, is less clearly established.

Introduction

Is UK investment too low? Answering this question would require knowledge of a benchmark 'efficient' level of investment, which is extremely difficult to pin down. The more common approach adopted in this paper is to look for clues by comparing investment levels in the UK with those in other developed countries: to the extent that UK investment is lower than that found in similar economies, we either require some explanation for why efficient levels of investment would be lower in the UK, or the balance of probabilities tilts in the direction of under-investment. Section 1 of the paper considers the evidence on comparative levels of investment and capital stocks.

Could relatively low levels of investment be related to distinctive features of UK capital markets? Sections 2 and 3 discuss some of these features, and the evidence for their impact on investment. Section 4 concludes.

1. Investment Levels

Most comparable data sources indicate that the UK has consistently invested a lower share of GDP in fixed capital formation than have other developed countries. Some typical figures based on OECD data are reported in Table 1, reproduced from Bond and Jenkinson (2000). Total gross fixed capital formation, which includes both housing investment and public sector investment, accounts for a smaller proportion of GDP in the UK than in Japan, Germany, France, Italy or the USA. This is the case whether we look at the whole period from 1960 onwards, or focus on the more recent period from 1980 onwards. Figure 1 presents similar data for a wider range of countries over the period 1950-98, reproduced from Caselli, Pagano and Schivardi (2000).

This gap becomes smaller if we exclude housing investment from the comparison, or focus more narrowly on investment in machinery and equipment.[1] Between 1980 and 1997, the UK invested a similar proportion of GDP in machinery and equipment as the USA, although the Anglo-Saxon countries still had lower investment levels than continental Europe or Japan.

Not surprisingly, these persistent differences in investment are reflected in estimates of capital stock levels. According to the Penn World Tables, which compute capital stock series for different countries using standard service life assumptions and investment price series, both capital-output and capital-labour ratios were lower in the early 1990s in the UK than in Germany, Japan or the USA (see Table 2). A narrower measure of equipment per worker was also lowest in the UK, although this gap was again smaller, consistent with the OECD figures for equipment investment.

Has this picture changed substantially since 1997?[2] Focusing on developments in the UK, it seems unlikely that the UK will have moved far up the investment league table. Most measures of investment have increased as a share of GDP, which is the usual pattern in periods of above-trend growth. Measured in current prices, investment/GDP ratios remain well below those seen in the late 1980s (Figure 2). Measured in constant prices, investment/GDP ratios have reached similar levels to those of the late 1980s (Figure 3). The difference is accounted for by a decline in the relative price of investment goods, which implies that the quantity of investment goods actually purchased in 1989 would have cost rather less (and hence amount to a smaller share of GDP) if it could have been purchased at 1999 relative prices. This difference is not inconsiderable, as can be seen by comparing Figures 2 and 3. However since this trend in relative prices is likely to be common across the developed countries, it will have little impact on the cross-country comparisons. Focusing on the current price investment series, there seems little reason to suspect any big change in the UK's relative position. Indeed the main development in recent years has been the increase in gross investment as a share of GDP in the USA compared to most European countries (see Figure 1, and Caselli, Pagano and Schivardi (2000) for further discussion).

One measure of investment on which the UK's relative position appears to be higher is obtained by considering 'business sector' investment as a share of total GDP, which can be done using the OECD's Business Sector Database.[3] The 'business sector' includes both private sector and public sector corporations, and is intended to reduce the problem of comparability of private sector investment levels between countries with small and large state enterprise sectors. Taken at face value, these comparisons of business sector investment would appear to indicate that the UK's relatively low total investment/GDP ratio can be attributed to a very low share of general government (i.e. excluding public corporations) investment in GDP. However it is not clear that the distinction between

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1 Investment by private sector corporations accounts for around 85% of total investment in equipment and machinery in the UK.
2 As well as marking the change of government in the UK, 1997 also happens to be the most recent year for which this investment data is available in OECD Historical Statistics.
3 See, for example, DTI (1996).

investment by public corporations and investment by general government is sufficiently consistent across countries for these comparisons to be reliable. This would be less of a problem if business sector investment was compared to a measure of business sector output, but is compounded when business sector investment is presented as a share of total GDP.[4]

2. Capital Markets

One potential explanation for relatively low levels of investment spending by UK firms focuses on differences between capital markets in the UK and elsewhere. As a result of these differences, UK firms may either face a higher cost of funds to finance their investment spending, or may be more likely to encounter quantitative constraints on their ability to finance investment.

Considering the 'capital markets' broadly to include the set of relationships between savers supplying funds to be invested, and firms desiring finance for their investment expenditures, there are some distinctive characteristics of the UK financial system that may be relevant in this context. Compared to continental Europe, a higher proportion of UK firms have their shares listed and actively traded on the stock market. A higher proportion of their shares is likely to be owned by financial institutions, in particular pension funds, insurance companies and unit/investment trusts. A smaller proportion of their shares is likely to be owned directly by individuals, or controlled by family blocks. Related to this, ownership tends to be much less concentrated in the UK, since financial institutions themselves tend to own highly diversified portfolios of shares in many different companies, rather than controlling stakes in particular firms.[5]

Possibly related to these different ownership patterns, we see very different levels of takeover activity, particularly hostile takeover activity, in the UK compared to continental Europe;[6] and we see quite different dividend payout behaviour. Dividends paid to shareholders tend to be higher as a share of profits, and dividend levels tend to be more rigid, certainly compared to similar firms in Germany.[7] UK firms facing a temporary downturn in profits are less likely to fund ongoing investment expenditures by cutting back on dividend payments. Both of these features are consistent with the idea that direct monitoring of firm managers is likely to be weaker in the UK, as a consequence of dispersed share ownership, with dividend payments (ceteris paribus, subjecting the firm's managers to more frequent scrutiny from external capital markets) and disciplinary takeovers playing substitute roles in ensuring that managers' actions do not deviate too far from those that would maximise shareholder value.

One area where international differences are less striking concerns the actual sources of finance for corporate investment. In all developed countries, the lion's share of investment spending is financed internally, from retained earnings (see Table 3, reproduced from Corbett and Jenkinson (1997)). This is consistent with the idea that internal sources of funds are either cheaper than external sources of finance, or are preferred to external funds by managers for other reasons. Until quite recently, Japan was something of an exception to this pattern, with unusually high shares of investment finance coming from banks and new share issues. More recently, Japanese financing patterns appear to have converged towards developed country norms.[8] It is true that the highest shares of internal finance are observed in the UK and the USA, but it is not clear whether this is a cause or a consequence of lower levels of investment spending.

3. Cash Flow Sensitivity

To the extent that the distinctive features of the UK financial system contribute to a greater degree of asymmetric information between firms and suppliers of outside finance, it may be the case that the cost premium for external funds is higher in the UK than elsewhere. If external funds are relatively expensive, the availability of internal finance is likely to play a more significant role in the determination of investment expenditures. Consistent with this idea, one robust stylised fact that has emerged from comparative research on investment behaviour is that company investment appears to be considerably more sensitive to fluctuations in cash flow in the UK than in continental European countries, with the USA somewhere between these extremes.[9]

One interpretation of this finding is that 'financing constraints' or 'capital market imperfections' have a greater impact on firms' investment in the UK than elsewhere.[10] Within UK high-tech industries, Bond, Harhoff and Van Reenen (1999) find that this investment-cash flow sensitivity is concentrated among firms that are not engaging in formal R&D, a pattern which they suggest is consistent with these firms being subject to financing constraints.[11] One appeal of this hypothesis is that it provides a potential explanation for comparatively low levels of investment. However, the evidence must, as yet, be regarded as inconclusive.[12]

A different interpretation of this investment-cash flow sensitivity is that it reflects comparatively weak control over managers' investment decisions by UK shareholders. According to Jensen's (1986) 'free cash flow' hypothesis, managers with control over internally generated finance over and above that required to fund investment projects with positive net present values may be tempted to spend the excess on negative net present value investments that expand their sphere of influence, rather than return the cash to their shareholders. This may also account for the observed sensitivity of company investment to fluctuations in cash flow, and if control over managerial behaviour tends to be weaker in the UK than in other financial systems, this could account for the greater investment-cash flow sensitivity found in the UK. Bettoni (2000) presents some evidence which is consistent with this interpretation: UK firms with low levels of share ownership by financial institutions, and UK firms with relatively concentrated ownership – particularly those where an individual owns a significant block – display much less sensitivity of investment to cash flow than do other firms. In other words, those UK firms whose ownership structure looks more like that typically found in Germany also exhibit investment behaviour more like that found in Germany.[13]

4 Since a high share of business investment in GDP could reflect either a high share of business sector output devoted to investment, or a wide definition of business sector activities.
5 See, for example, Edwards and Fischer (1994) and Franks and Mayer (1995).
6 See, for example, Franks and Mayer (1990) and Jenkinson and Mayer (1994).
7 See, for example, Correia De Silva (1996).
8 See Corbett and Jenkinson (1997) for further discussion.
9 See, for example, Bond, Elston, Mairesse and Mulkay (1997), Hall, Mairesse, Branstetter and Crepon (1998), Bond, Harhoff and Van Reenen (1999) and Bettoni (2000).
10 Although as Kaplan and Zingales (1997) have pointed out, a greater sensitivity of investment to cash flow is not an inevitable consequence of a greater cost premium for external finance.
11 The idea here being that firms engaging in formal R&D are either those firms with 'deep pockets' who expect to be able to finance long-term R&D commitments comfortably from internal sources, or those firms facing a relatively low cost premium for external funds. In either case the R&D performers are less likely to be financially constrained, compared to similar firms not committed to R&D.
12 One concern is whether the sensitivity of investment to current cash flow disappears altogether when informative controls for expected future profitability are included in the investment equation. Using data on listed US companies, Bond and Cummins (2000) find that any sensitivity of investment to cash flow is eliminated by controlling for securities analysts' forecasts of the firm's future earnings. Whilst both Bond, Harhoff and Van Reenen (1999) and Bettoni (2000) provide indirect evidence suggesting that this is unlikely to be the case in the UK, more direct research on this question is needed.
13 Also consistent with a managerial over-investment interpretation, Bond, Meghir and Windmeijer (1998) find that an increase in the risk of being taken over tends to reduce investment spending by UK companies, as well as increasing their productivity.

4. Conclusions

Whilst the available research evidence suggests that the distinctive features of UK capital markets are likely to be an important factor in accounting for UK company investment behaviour, it is less clear that they provide a simple explanation for relatively low investment levels. Indeed the 'free cash flow' interpretation of the observed investment-cash flow sensitivity would suggest that, if anything, the inefficiency may be in the direction of over-investment by UK managers subject to comparatively weak control over their investment decisions.

This suggests that the principal causes of comparatively low investment spending may lie elsewhere. Some candidates include low expected returns on investment, possibly associated with deficiencies in education and training leading to shortages of skilled labour, or comparatively low levels of spending on R&D – the idea being that both skilled labour and R&D may be complementary with capital in production; or high levels of macroeconomic and/or exchange rate uncertainty, making firms more reluctant to undertake investment for a given level of expected returns – which in turn may reflect either the role of 'real options' or control over investment decisions by risk averse managers. Further research on these topics is likely to be fruitful in understanding the causes of relatively low investment levels in the UK.

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Table 1. Investment as a Share of GDP (%)

	Japan	Italy	Germany	France	USA	UK
1980-97						
Gross fixedcapital formation (GFCF)	29.4	19.9	20.8	19.9	17.8	16.9
GFCF excluding residential construction	23.8	14.3	14.6	14.5	13.6	13.4
GFCF: machinery and equipment	10.9	9.5	8.5	8.6	7.9	7.9
1960-97						
Gross fixed capital formation (GFCF)	30.9	22.3	22.2	21.9	18.3	17.8
GFCF excluding residential construction	24.8	15.6	15.6	15.3	13.7	14.1
GFCF: machinery and equipment	10.9	9.6	8.6	8.8	7.5	8.3

Notes: For Germany, before 1991 the data refer to West Germany. For Japan, data on gross investment in machinery and equipment only start in 1974.

Source: Bond and Jenkinson (2000). Based on OECD Historical Statistics, 1960-97 (1999 edition), Tables 6.8-6.11.

Table 2. Capital Stock Comparisons, 1992

	Japan	Germany	USA	UK
Capital-output ratio	2.7	3.5	2.0	1.8
Capital stock per worker	41,216	50,116	35,993	22,509
Equipment per worker	12,634	14,183	12,634	10,669

Notes: Figures for Germany refer to 1990. Capital stock is defined as non-residential capital stock. All data are expressed in constant 1985 international prices.

Source: Bond and Jenkinson (2000). Based on Penn World Tables, version 5.6.

Table 3. The Financing of Investment: Flow-of-Funds Estimates (%)

	Japan	Germany	USA	UK
Internal finance	69.9	78.9	96.1	93.3
Bank finance	26.7	11.9	11.1	14.6
Equipment per worker	4.0	–1.0	15.4	4.2
New equity	3.5	0.1	–7.6	–4.6
Data sample	1970-94	1970-94	1970-94	1970-94

Notes: Internal finance comprises retained earnings and depreciation. The figures do not add up to 100 per cent as various categories of finance are not reported (such as trade credit and capital transfers). The figures represent weighted averages where the weights for each country are the level of real fixed investment in each year in that country.

Source: Corbett and Jenkinson (1997).

Figure 1: Ratio of gross fixed investment to GDP (1)

(percentage values)

Source: Caselli, Pagano and Schivardi (2000). Based on Penn World Tables, version 5.6 and EU Commission (1998a, 1998b).
(1) At constant prices. (2) Up to 1991, western regions.

Figure 2: GFCF/GDP current prices

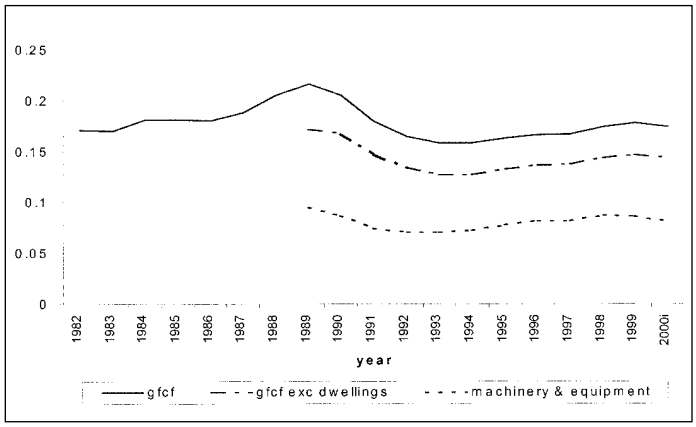
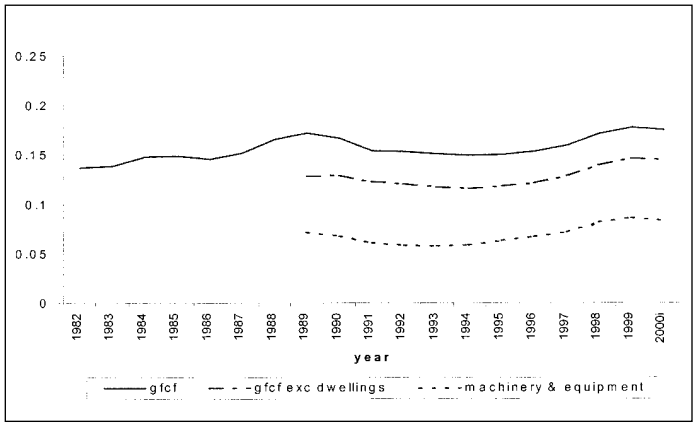


Figure 3: GFCF/GDP 1999 prices



Note: Figures for 2000 refer to first quarter.
Source: United Kingdom National Accounts.

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