

What is driving business investment in London?

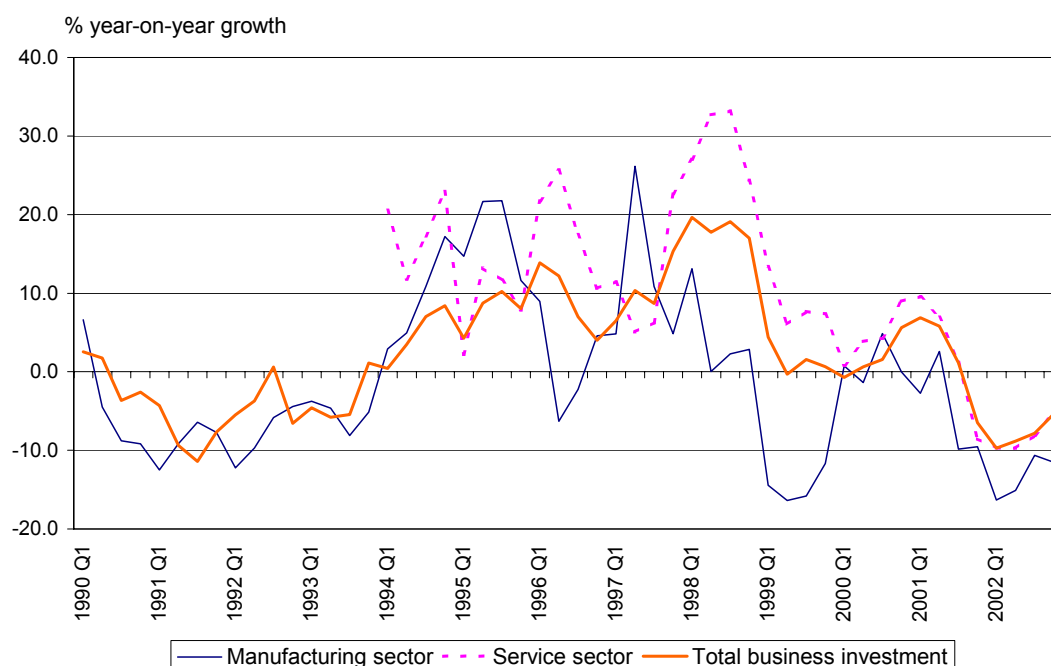
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Several empirical studies have explored the main drivers of investment growth in the UK. However little has been done to understand the underlying factors of investment growth in London. Probably this is because no figures for investment growth in London are available. This note explores business investment growth in London, using British Chamber of Commerce survey data, which shows a relatively good fit against actual investment growth at the UK level. Statistical analysis was carried out from the second quarter of 1991 to the fourth quarter of 2002. Results indicate that the main factors explaining investment growth in London's manufacturing sector are profit expectations, the volume of home sales and past year expenditure on plant and machinery. Similar factors as in the manufacturing sector explain investment growth in London's services sector, with the exception of profitability expectations.

1. Introduction

Consumer spending has been the engine of economic growth in the UK in the past two years. In contrast investment, especially business investment, has contributed less to output growth. Annual investment has fallen sharply since the second quarter of 2001, and remained negative in the fourth quarter of 2002. Manufacturing investment growth, while still negative, has edged up recently. Investment in services has been declining, but less than in the manufacturing sector.

Chart 1. Private business investment in the UK
manufacturing and services, constant prices



Source: ONS

Is London experiencing a similar deterioration in investment? Have the manufacturing and service sectors been affected in a similar way?

Dissaggregated data can help to answer these questions, but unfortunately there are no regular official figures recorded for business investment by sector and across UK regions. However, indicators of investment in London are available from economic surveys on a quarterly basis. In January 2003, the British Chamber of Commerce (BCC) produced their quarterly economic survey results and in early February 2003 the Confederation of British Industry (CBI) and Regional Trends released new results.

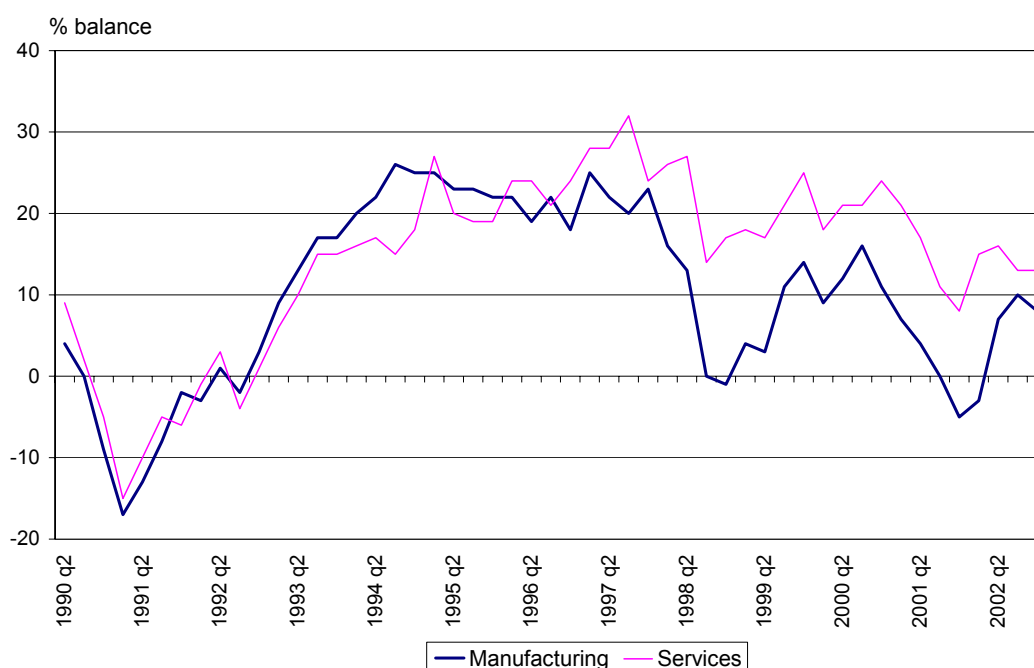
2. Data

This analysis uses the BCC survey as it interviews 6,364 companies (with over 300 respondents in London), while the CBI interviews only 904 companies (with 193 companies together in the South east and London). Furthermore, almost 60 per cent of companies in the BCC survey are from the services sector and 40 per cent are manufacturers. The CBI survey only includes companies from the manufacturing sector.

Another main difference is that the BCC survey asks companies whether their investment intentions have increased or decreased over the past three months, while the CBI survey asks companies to report on their investment plans for the next 12 months. As a result, these surveys might show contrasting results at times.

Chart 2 presents the percentage balance of investment plans in plant and machinery for the manufacturing and services sectors. The percentage balance is determined by subtracting the percentage of companies reporting decreases in investment plans from the percentage of companies reporting increases.

Chart 2. UK investment plans – plant and machinery
manufacturing and services, percentage balance



Source: BCC

At a national level, investment intentions in the manufacturing and service sectors were relatively stable in the last quarter of 2002 compared with the previous quarter. Since the second half of 2002, the balance of investment plans has become positive in the manufacturing sector, indicating signs of recovery in investment since the sharp decline in 2001 and also first half of 2002. The balance in service investment has remained positive since 1993. UK investment plans in plant and machinery in the service sector fared better in the last quarter of 2002.

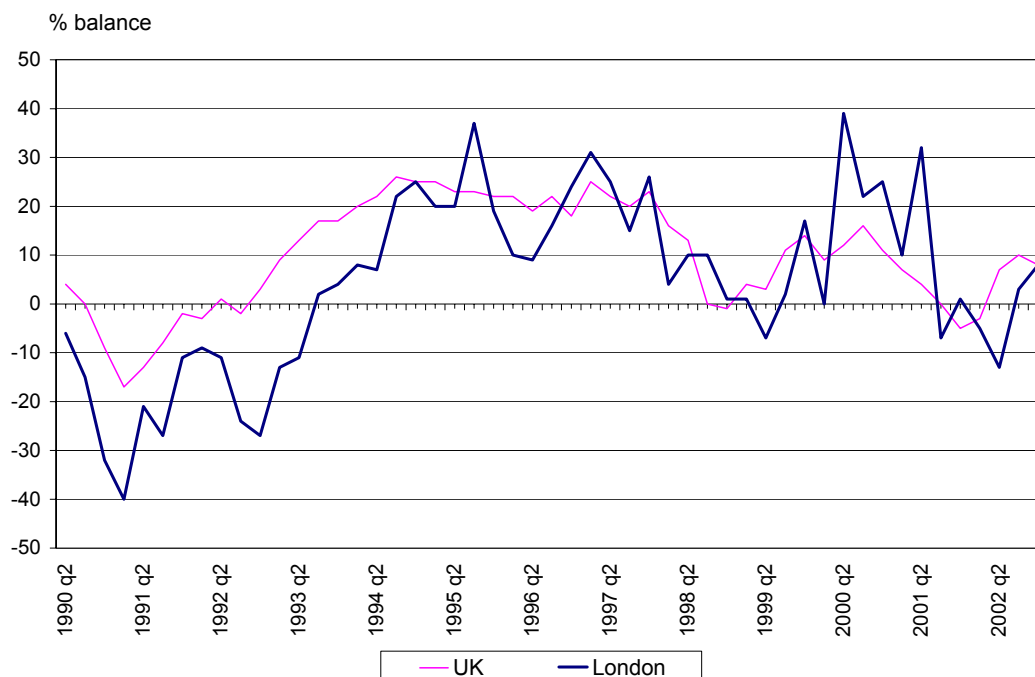
3. Sectoral analysis in London and the UK

Manufacturing investment intentions in London has generally been more volatile than in the UK, with more pronounced upswings and investment intentions falling more sharply in London during the last recession during the early 1990s.

Since the slowdown in the London's economy in the second quarter of 2001, manufacturers in London have been more cautious about investing in plant and machinery compared to the rest of the UK. However, investment intentions in London have been recovering since the second half of 2002. Currently, manufacturers in London and UK have similar plans for investment growth.

Chart 3. Manufacturing sector investment plans

London and the UK, percentage balance



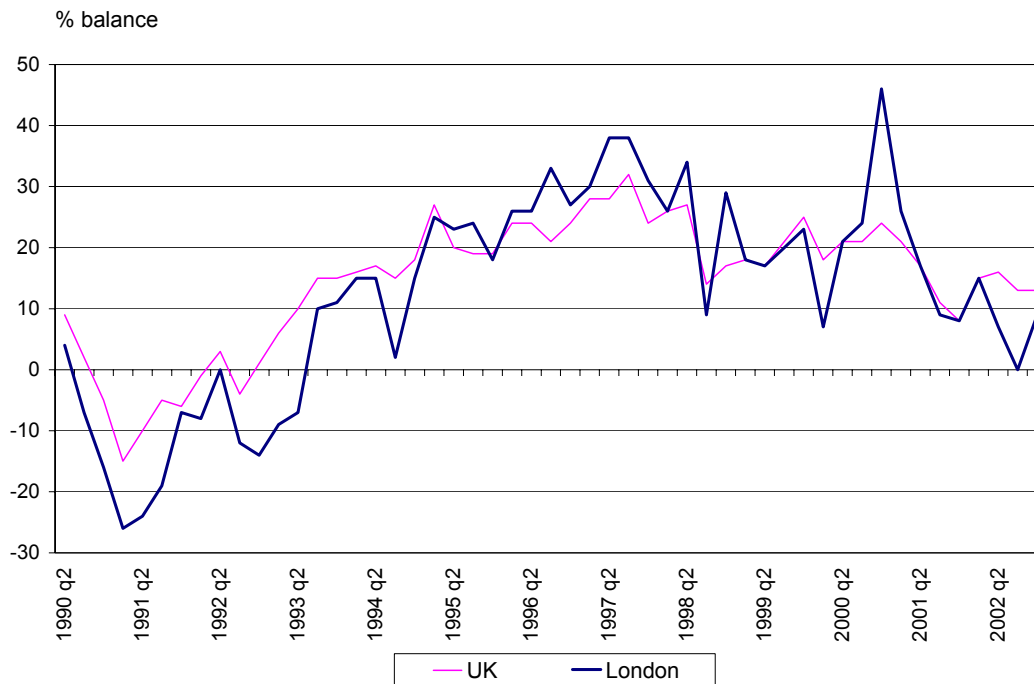
Source: BCC and LCC

Similarly, investment intentions in the service sector appear to fluctuate more in London than in the UK as a whole. Investment intentions in the service sector deteriorated between the second half of 2001, and the third quarter of last year and have been on an upward trend since then.

The downturn in London's economy had a more significant impact on the investment plans of manufacturers than companies in the service sector. It is important to note that business services now contribute three times as much as manufacturing to London's output. The role of the service sector in driving London's economic growth has increased even further since 1996 (London's Economy Today, issue 4). The rapid growth experienced by firms in the service sector has translated into higher investment plans than in the manufacturing sector.

Chart 4. Service sector investment plans

London and the UK, percentage balance

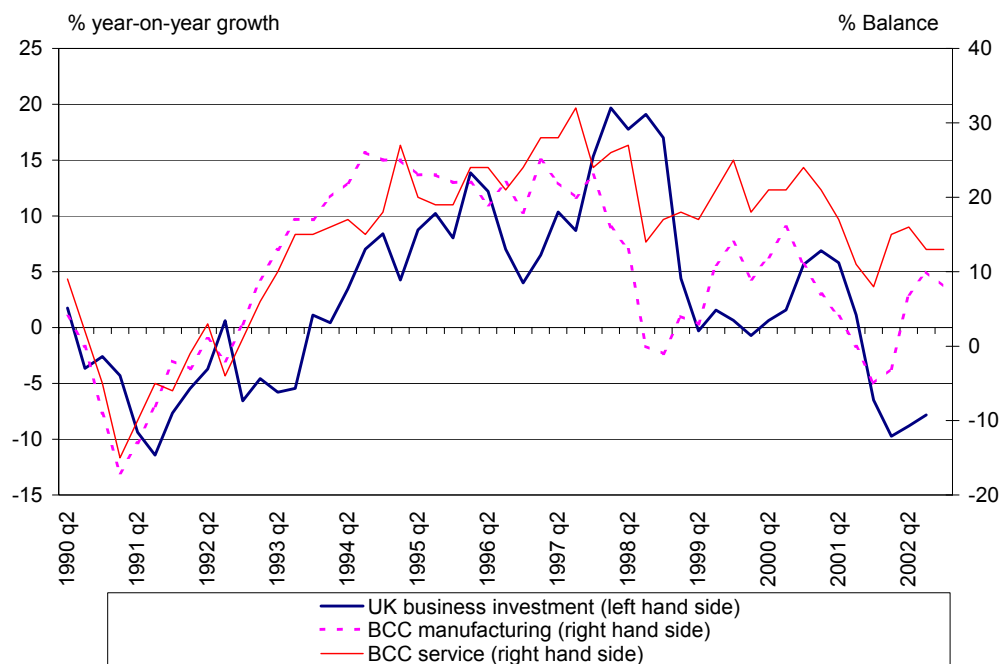


Source: BCC and LCC

4. Comparison of UK business investment and business investment intentions data

Chart 5 depicts official ONS figures of UK business investment and indicators of investment intentions from the BCC economic survey. Investment intentions for the manufacturing and service sectors are published with a quarter ahead than the ONS figures. Investment intentions appeared to track business investment growth quite well during the 1990s and in the period of 2000 to 2002.

Chart 5. UK business investment and business intentions



Source: ONS and BCC

5. Previous studies

There are various empirical studies devoted to explaining business investment in the US. According to Fazzari et al (1988), three broad empirical approaches have been used to explain investment demand. The first approach considers the value of the company's assets as a main determinant of investment. The second refers to the sales accelerator investment demand models. These models predict that fluctuations in sales or output motivate changes in capital spending (Abel and Blanchard 1986). In the last approach, measures of output and the cost of capital (cost of raising funds) determine investment demand. Fazzari et al. (1988) argue that it is typical to find significant effects of sales and profits or cash flow on business investment.

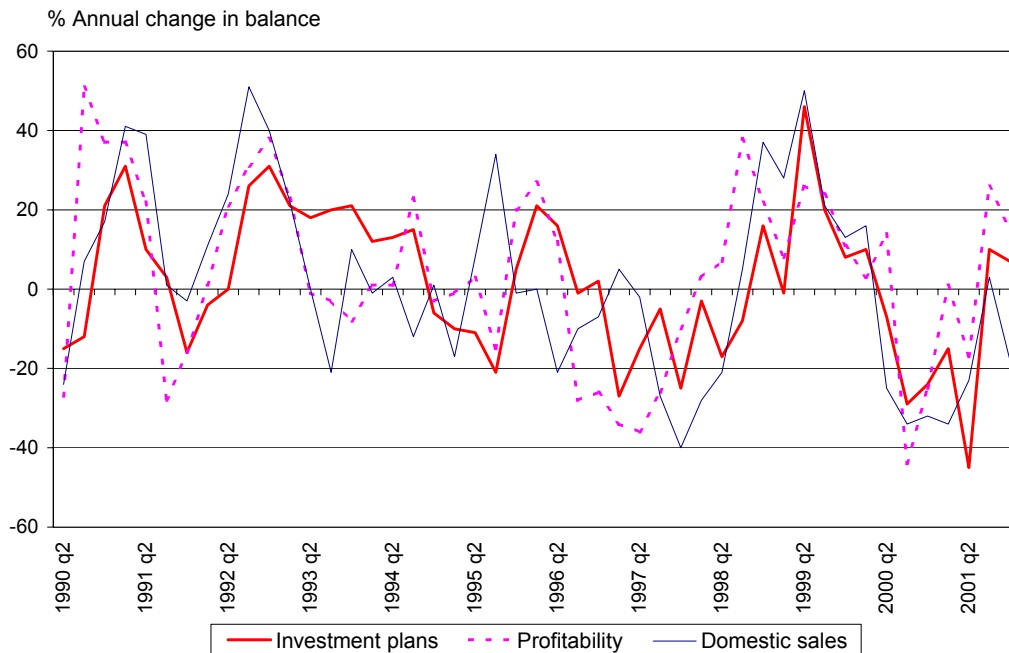
Samuel (1996) found that the single most important determinant of business investment is cash flow, using panel data at company level. Most recently, Mac Gorain et al (2002) examined the relationship between profits expectations and companies' physical investment in the UK. However, little has been done to understand investment growth in London, except for work on forecasting economic performance. Most of these forecasting models are based on large-scale, complex macro-econometric models relying on estimates of investment in London.

This analysis explores the main determinants of changes in investment intentions in London's manufacturing and services sectors between the second quarter of 1991 and the fourth quarter of 2002. Based on sales accelerator models, companies are more likely to invest when they face a sustainable demand for domestic products and have positive future prospects. Equally, it is expected that companies operating at full capacity will have more incentives to invest more in machinery and plant for future growth.

6. Econometric analysis

Chart 6 depicts the annual percent point change in the investment intentions balance for plant and machinery amongst London manufacturers. Chart 6 shows also the annual differences in the balance of profitability and domestic sales. Changes in the percentage balance of manufacturing investment appear to move in the same direction as the changes in home sales and profitability expectations, particularly from 1998.

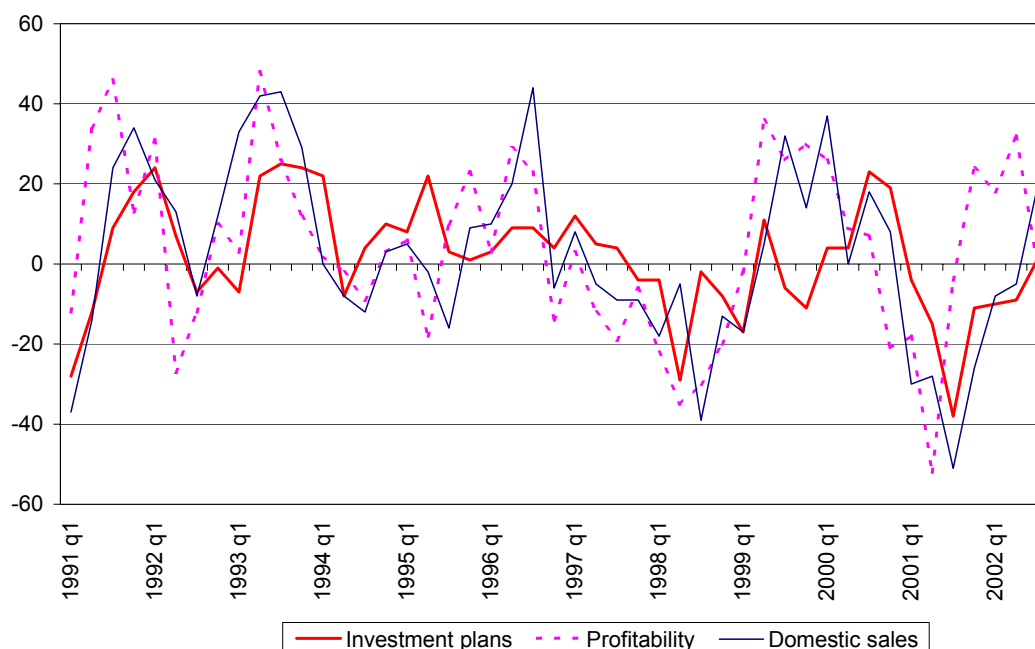
Chart 6. Manufacturing investment in London



Source: BCC and LCC

The same variables are displayed in Chart 7 for the services sector. Although profitability appears to explain changes in investment from 1990 to 2001, this relationship is not so close from the second half of 2001.

Chart 7. Service investment in London



Source: BCC and LCC

Statistical analysis was conducted to determine the impact of these variables on investment growth. Correlation coefficients of the annual change in balance of investment plans between other variables are calculated for a period of 11 years. Table 1 shows the annual change in balance of investment for the manufacturing and services sector with other variables.

Table 1. Investment in London
Correlations – second quarter 1991 to fourth quarter 2002

Variables	Manufacturing sector	Services sector
Profitability	0.60	0.29
Home sales	0.59	0.64
Export sales	0.41	0.45
Capacity utilisation	0.34	N/A

* All variables represent the annual difference in the percentage balance. Data for capacity utilisation in the services sector is only available since 1995.

The annual change in the balance of investment is highly positively correlated with profitability expectations and volume of home sales. Volume of exports sales and capacity utilisation are positively correlated with investment growth, but not as much as the other variables. For the service sector, the annual change in domestic sales and annual change in export sales are more highly correlated with the annual change in investment intentions than in the manufacturing sector. But the annual change in

the balance of profitability expectations is not highly correlated with annual investment growth in this sector.

An econometric model was estimated, regressing the annual change in the balance of investment plans on the annual change in the balance of volume of home sales, annual change in the balance in volume of export sales, annual change in the balance of profitability expectations and annual change in the percentage of firms reporting being below full capacity. The results of the regression analysis for the manufacturing and service sectors are presented in Table 2. These two models satisfy standard assumptions of the linear regression model.

Other results indicate that changes in investment intentions in London in the manufacturing sector are mainly attributed to changes in profitability expectations, changes in the volume of domestic sales and changes in investment plans in the previous year.

Fifty-two per cent of the variation in investment growth in plant and machinery are explained by these factors. Future profits prospects have the highest impact for manufacturers on investment plans. Moreover, when manufacturers increase their expenditure in plant and machinery this has a positive effect on future investment plans, with investment sustained in the subsequent year. Surprisingly, the volume of export sales and capacity of utilisation do not appear to explain movements in investment.

Table 2. Annual change in investment in London

Regression analysis[†] – third quarter 1991 to fourth quarter 2002

Variables	Manufacturing sector	Services sector
Constant	-0.58 (-0.29)	0.59 (0.37)
Home sales t	0.21 (2.08) *	0.24 (2.32) *
Export sales t	-0.01 (-0.10)	0.06 (0.51)
Profitability expectations t	0.33 (3.14) *	0.03 (0.31)
Capacity Utilisation t	0.09 (0.45)	-
Investment intentions t-1	0.31 (2.43) *	0.35 (2.80) *
R2 adjusted	52%	43%
Number of observations	46	46
Serial correlation test ^a	$\chi^2_4 = 7.54$	$\chi^2_4 = 12.33$
Normality test	$\chi^2_2 = 1.07$	$\chi^2_2 = 0.69$
Heteroscedasticity test	$\chi^2_1 = 0.40$	$\chi^2_1 = 2.37$

[†] All variables represent the annual difference in the percentage balance. The numbers in parentheses are the t-ratios. A t-statistic higher than two indicates that the coefficient is statistically significantly different from zero.

* Indicates that the coefficients are statistically significantly different from zero at 5 per cent significance level.

^a The critical value for χ^2_4 is 14.9 at the 5 per cent significance level.

Investment growth in the services sector is driven by similar factors as in the manufacturing sector, except that profitability expectations do not appear to affect business investment growth. Also, only 43 per cent of variations in investment growth are explained by changes in home sales and last year's investment plans in plant and machinery.

Finally, given that survey data can be erratic sometimes, this analysis should be treated with caution. As long as confidence about profitability and domestic sales demand remain firm, investment growth in London is expected to continue recovering.

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