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Corporate Net Lending: A
Review of Recent Trends

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Abstract

Corporate net lending: a review of recent trends

Since 2001, OECD corporate net lending has risen sharply. This paper examines the main forces at play behind this run-up and provides some insight into whether and how they might possibly unwind in the future, a process that may already be underway. It shows in particular that, the increase is partly temporary with some of it likely to fade with the cycle and the ongoing adjustments in the financial and housing sectors. On the other hand, part of the increase reflects structural changes in corporate behaviour and in their environment and is likely to persist. The paper also points to cross-country differences reflecting, for example, the role of competitiveness in Japan and continental Europe, and of the financial sector in the United Kingdom.

JEL classification : E21, E22, F21, G30

Key words: corporate net lending, corporate investment, corporate saving, financial corporations

Résumé

Capacité de financement des entreprises : un examen des tendances récentes

Depuis 2001, la capacité de financement des entreprises de l'OCDE a fortement cru. Ce papier examine les principaux phénomènes à l'origine de la hausse, et fournit des éléments sur leur éventuelle résorption future et les modalités selon lesquelles elle pourrait avoir lieu. Ce processus semble d'ailleurs avoir déjà commencé. Il montre en particulier qu'une part de l'augmentation est transitoire et pourrait disparaître avec le cycle et l'ajustement en cours dans les secteurs financier et de l'immobilier résidentiel. En revanche, une part de l'augmentation reflète des changements structurels dans le comportement des entreprises et dans leur environnement et va probablement persister. Le papier note également des différences entre pays reflétant par exemple le rôle de la compétitivité au Japon et en Europe continentale et celui du secteur financier au Royaume-Uni

Classification JEL : E21, E22, F21, G30

Mots clefs : capacité de financement des entreprises, investissement des entreprises, épargne des entreprises, entreprises financières

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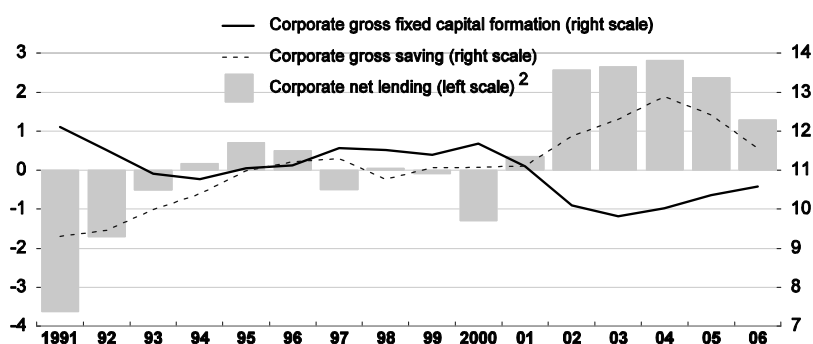
CORPORATE NET LENDING: A REVIEW OF RECENT TRENDS

By Christophe André, Stéphanie Guichard, Mike Kennedy and David Turner¹

Introduction and summary of the main results

1. For the aggregate OECD corporate sector, the excess of gross saving over fixed investment (*i.e.* net lending) has been unusually large since 2002, even allowing for the recent fall (Figure 1). Indeed, while attention has increasingly focussed on the emergence of global financial imbalances and a possible global “saving glut”,² aggregate OECD corporate net lending rose slightly more over 2001-05 than the aggregate external surplus of the emerging market economies (2% of OECD GDP against 1½ per cent of OECD GDP) (Figure 2).³

Figure 1. OECD corporate net lending
As a percentage of GDP, in current dollars



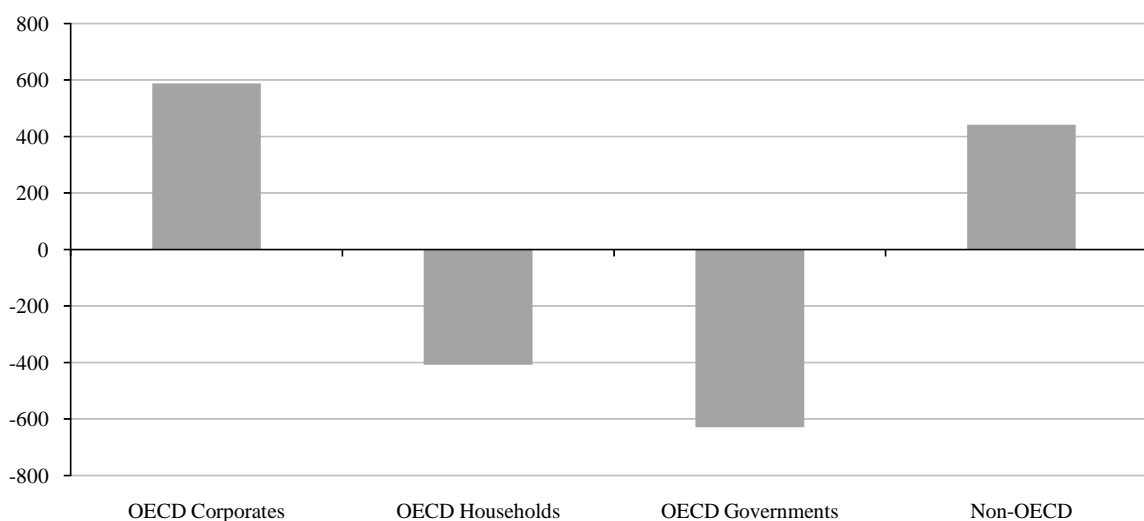
1. Aggregates include Australia, Canada, Denmark, Finland, France, Germany, Italy, Japan, Netherlands, United Kingdom and United States. For Japan and Denmark in 2006, estimates based on Economic Outlook 82 database.
2. Net lending is not equal to the difference between gross saving and gross fixed capital formation. It is also affected by changes in inventories and capital transfers. These can be important, as for Germany in 1995 and Japan in 1998.

Source: OECD Annual National Accounts, national sources and OECD calculations.

1. The authors, members of the General Economic Assessment division of the Economics Department, wish to thank, without implicating, Mike Feiner, Jørgen Elmeskov, Jean-Luc Schneider, Vincent Koen, Eckhard Wurzel, Richard Herd and Rudiger Ahrend. Excellent secretarial work by Anne Eggiman and Véronique Henriksson is also acknowledged. The views expressed here are those of the authors and do not necessarily reflect those of the OECD.
2. See Bernanke (2005).
3. Detailed information on corporate accounts is not yet available for 2006 for some countries, notably Japan (see Appendix). In most other cases it became available only recently and could not be used for the econometric analysis. Therefore this paper focuses on the 2001-2005 period, notably as concerns OECD aggregates. Where available, the data for 2006 is included in individual country charts.

Figure 2. Change in net lending: a global perspective

Variation between 2001 and 2005 in billions of dollars



Source: OECD Economic Outlook 82 database and OECD Annual National Accounts.

To the extent the household sector does not fully “pierce the corporate veil”, the rise in corporate saving that has driven the run-up in net lending will have contributed to low global interest rates.⁴

2. Against this background this paper examines various facets of corporate net lending with a view to understanding some of the main forces at play behind the recent run-up and providing some insight into whether and how they might possibly unwind in the future, a process that may already be underway. To this end, it attempts to identify cyclical, other transitory and trend influences on corporate net lending, distinguishing, in successive sections, between those phenomena which appear common across most OECD countries, and those which appear more country-specific. An attempt is made to keep a crude running score-card of these transitory and more long lasting contributions (Table 1). The focus of the paper is on the seven major economies, which have made a large contribution to the increase in total OECD corporate net lending, but other country experiences are also mentioned. China, where corporate net lending has also increased sharply over the recent past is covered separately in Box 1. There is as well an Appendix which covers: issues related to the measurement of saving and profits; the estimation of the longer-term determinants of net lending; some factors affecting historical trends in both corporate saving and investment; and the procedure used to decompose the gross operating surplus into contributions from various sectors. The main findings of the paper are:

- No more than half of the increase in corporate net lending over the period 2001 to 2005 is likely to be persistent (Table 1).
- A factor contributing to the recent buoyancy in net lending has been the simultaneous pick-up across both financial and non-financial sectors in many countries, whereas in the past such movements have typically been poorly correlated. High net lending in the non-financial sector has been partly driven by the cyclical downturn since 2001; with output gaps continuing to close after 2005 this transitory effect is fading.

4. To the extent rising corporate saving has been a driver of the fall in household savings rates, and provided high corporate saving is expected to persist, this would provide greater confidence in the sustainability of what otherwise appear to be unusually low household saving rates in many OECD countries.

Table 1. **Contributions to increase OECD corporate net lending over period 2001-05***Percentage points of GDP*

	Magnitude of effect (% of OECD GDP)	Transitory or long-lasting effect
TOTAL	2.0	
Contribution by country		
United States	0.6	Some partial reversal likely
Japan	0.8	Unclear, more likely to fall
Germany	0.3	Likely to persist
United Kingdom	0.4	Some partial reversal likely
Others	-0.1	
Contribution by macroeconomic effects		
Effect of business cycle ¹	0.5	Transitory
Effect of financial variables ²	0.6	Probably mostly transitory
Contribution by sector to operating surplus		
Contribution of financial sector	0.4	Probably mostly transitory
Contribution of housing-related sector ³	0.3	Probably mostly transitory
Total operating surplus	1.1	
Contribution by accounting concept		
Effects through higher corporate saving		
Effect of lower interest payments	0.8	Some partial reversal likely
Effect of increased property income	0.7	Probably long-lasting
Effect of lower inflation	0.1	Long-lasting
Total from higher corporate gross saving	1.2	
Effects through lower corporate investment		
Lower investment goods prices	0.5	Possibly permanent
Total through lower corporate investment	0.9	

Notes: The results are derived from different analyses, which are not mutually exclusive. This means the individual effects cannot be meaningfully summed.

1. Calculated from the equation reported in Appendix, taking the product of the change in the output gap and the estimated long-run elasticity.
2. Calculated from the equation reported in Appendix, taking the change in the money gap and the house price-to-rent ratio and multiplying by their respective long-run elasticities.
3. The contribution of the construction sector and real estates services, including imputed rent.

Source: OECD calculations

- Movements in financial sector net lending appear to be better explained by financial variables such as broad money growth and real house prices, rather than by the business cycle. The financial sector, in terms of its value added in the economy, has contributed disproportionately to the increase in net lending (about ½ per cent of OECD GDP over the period 2001-05). This positive contribution to aggregate net lending is likely to be lowered substantially both because it was based on unusual financial buoyancy and because financial turmoil negatively affects profits of financial institutions.
- Construction, real estate and housing sectors have also added significantly to the increase in corporate net lending in many countries (in aggregate about 0.3% of OECD GDP). Also this effect is likely to dissipate in the future as the housing correction continues in the United States and housing booms come to an end elsewhere.
- Rising corporate net lending as a share of GDP reflected both falling corporate investment and increasing corporate saving shares. An important part of the recent apparent weakness in corporate investment relative to GDP can be explained by the current business cycle. Other possible explanatory factors, which appear to be more structural in nature, and therefore more long-lasting, include: the ongoing decline in the relative price of capital goods; in some countries, lower trend growth and depreciation rates; and net foreign investment (FDI) abroad, which appears to have increased since 2000. Corporate saving was mainly driven by increasing profit shares in most countries, possibly related to a degree of wage moderation, and lower interest charges. Dividends generally did not rise in line with profits, and in some cases fell relative to profits. In a few countries, corporate profits were channelled to shareholders *via* share buybacks. Looking forward, the factors described above as mostly transient are likely to fade, but other structural factors behind higher net lending, such as a degree of wage moderation, may persist for some time.
- Although corporate net lending rose over this period in the large majority of countries, variation was considerable (Figure 3). Japan, Germany and the United Kingdom experienced above average increases in corporate net lending, while in France and Italy, corporate net lending has not risen at all.
 - In the case of Japan, the increase represents a continuation of trend recovery in corporate balance sheets from the financial crisis of the early 1990s which has been further boosted by sustained gains in competitiveness.
 - For Germany, on the one hand, and France and Italy, on the other, an important factor behind the development in corporate net lending has been, respectively, sustained improvement or deterioration in competitiveness that has affected profitability.
 - The increase in corporate net lending has been particularly strong in the UK financial sector, in relation with the United Kingdom's importance as an international financial centre.

Box 1. Corporate saving and investment in China

Since the early 2000s, profits of the corporate sector in China have risen markedly. Survey data show that companies in the industrial, retail, wholesale and construction sectors have seen their after-tax profits rise by about 6% of GDP between 2003 and 2006 (see Table).¹ Profits have also been increasing rapidly in the banking and telecommunication sectors. Most of the gains in corporate profits have translated into an increase in retained earnings (gross saving), as dividend payout ratios are extremely low for the corporate sector as a whole.²

Selected indicators of saving and investment in the Chinese economy

Percentage of GDP

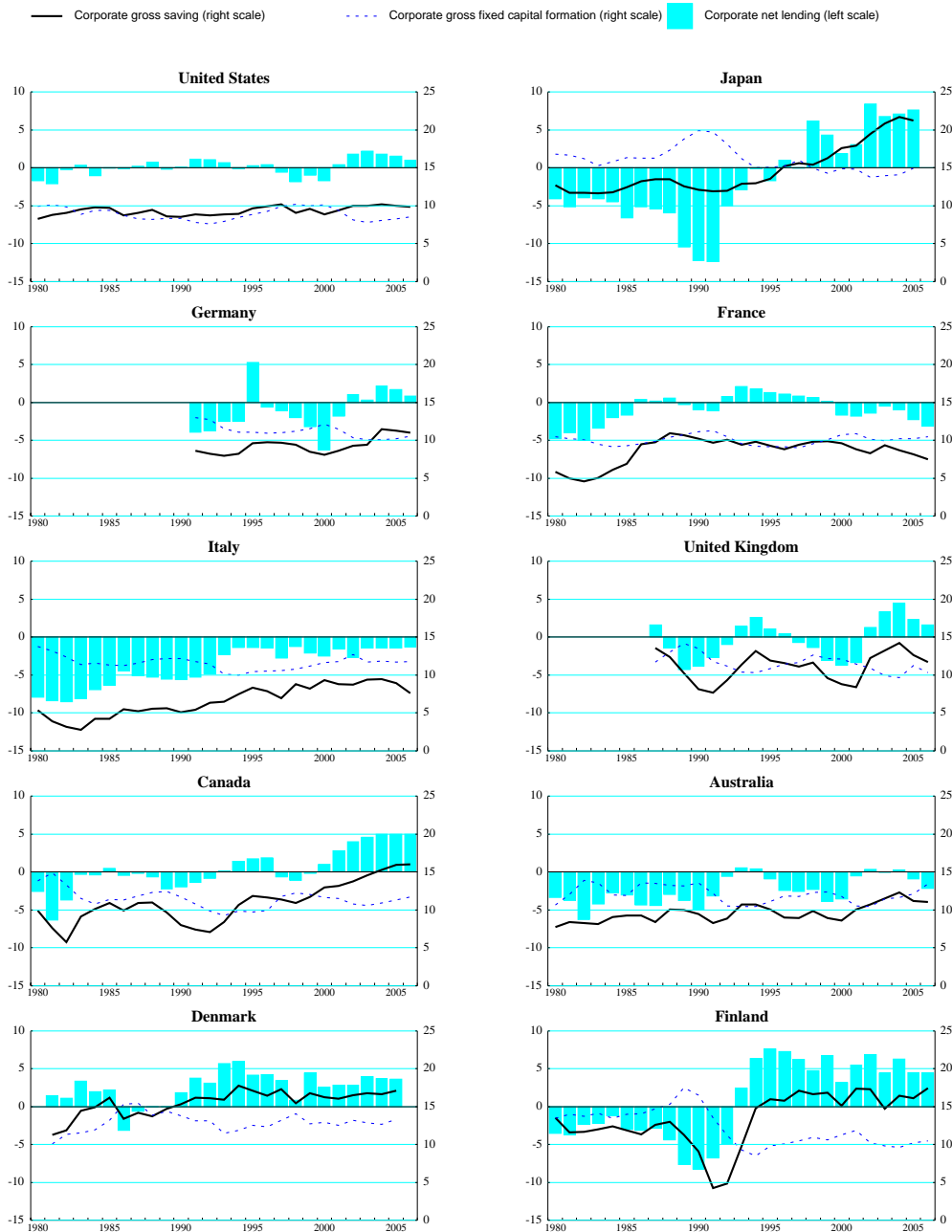
	2003	2004	2005	2006	Change from 2003 to 2006
Corporate profits (selected sectors)	6.8	8.5	9.4	12.6	5.8
General government net lending	-0.9	0	0.2	1.1	2
Gross fixed capital formation	39.2	40.6	41.5	42.7	3.5
Current account surplus	2.8	3.6	7.2	9.5	6.7

Source: National Bureau of Statistics, State Administration of Foreign Exchange, CIEC, OECD calculations.

Outside the corporate sector, net lending by the general government sector rose by 2% of GDP between 2003 and 2006, with estimates suggesting that gross government saving increased only modestly more.³ Household saving rates are high, at 32% of disposable income (according to survey data) and a bit less than 17% of GDP, and appear to have increased only modestly between 2003 and 2006. National accounts data suggest that investment increased by 3½ per cent of GDP between 2003 and 2006.⁴ With saving rising more than investment, the current account balance rose from 2¼ per cent of GDP in 2003 to an estimated level of 9½ per cent of GDP in 2006. There are indications that in 2007 corporate profits have continued to soar and to drive national saving and the current account surplus.

1. The currently published official sectoral accounts stop in 2003 and do not appear to take into account the large revision made to GDP as the result of the Economic Census. An attempt at updating the sectoral income and expenditure balances was made by Barnett and Brooks (2006).
2. Just over half of listed companies pay no dividends and dividends paid by state-controlled listed companies accrue to holding companies which, in turn, pay no dividend to their ultimate shareholder, national or local governments.
3. The government revenue and spending statements do not present figures for government fixed capital investment or capital transfers and so do not permit the calculation of saving. As a benchmark calculation, total government spending rose by 0.9% of GDP between 2003 and 2006 and if the share of investment and capital transfers remained stable at around one third of total spending, public investment would have increased by about 0.3% of GDP.
4. Estimated as a residual, saving by households seems to have increased at most by 2% of GDP between 2003 and 2006 (where the residual = gross investment + current account - gross saving of the corporate sector - gross saving of the government sector). This residual includes, however, not only household saving but also unmeasured corporate profits, mis-measurement of investment and differences between the income and expenditure measures of GDP.

Figure 3. Net lending of corporations
Per cent of GDP



Note: Net lending is not equal to the difference between gross saving and GFCF. It is also affected by changes in inventories and capital transfers. These can be important, as for Germany in 1995 and Japan in 1998.

Source: OECD Annual National Accounts and national sources.

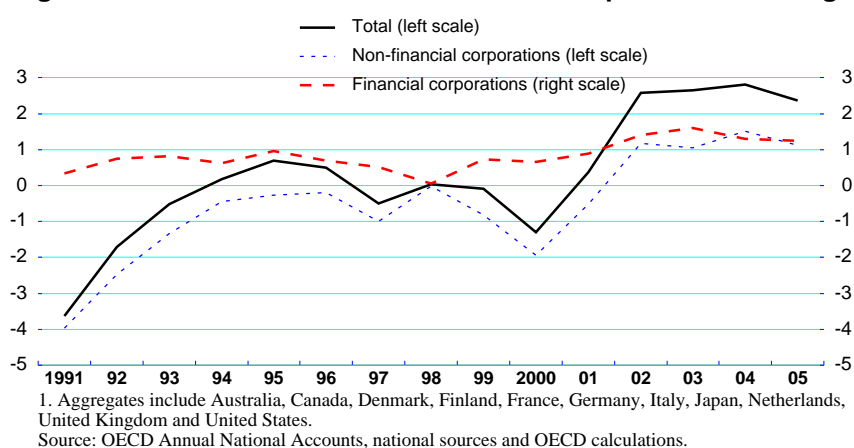
The forces behind the increase in aggregate OECD corporate net lending

Assessing the influence of output and financial cycles

3. Corporate net lending has been historically high since 2002 as a result of cyclical, other transitory and trend influences. As regards the influence of the cycle, coefficient estimates from panel regressions suggest that a decrease in the output gap (i.e. more slack) by 1 percentage point is associated with an increase in corporate net lending by $\frac{1}{2}$ per cent of GDP (Appendix). On this basis, up to one quarter of the overall increase in aggregate OECD corporate net lending of 2 percentage points of GDP between 2001, the year after the cyclical peak for the OECD as a whole, and 2005, when output had still not fully recovered, might be attributed to the influence of the cycle.

4. Over and above the normal influence of the cycle, financial-sector buoyancy appears to have boosted corporate net lending (Figure 4). About one-fifth of the overall increase in corporate net lending over the 2001-05 period stemmed from the financial sector, even though the financial sector accounts for less than 10% of value added. Panel regressions of financial sector net lending identify a role for the ratio of house prices to rents and broad money growth relative to GDP growth whereas no impact could be identified for the output gap.⁵

Figure 4. OECD financial and non-financial corporate net lending¹



5. The confluence of the cyclical and financial effects, together accounting for a rise in corporate net lending of about 1% of GDP, is atypical. Historically, net lending in the financial and non-financial sectors has not been strongly correlated.⁶ In any case, a normalisation of the cyclical situation, a return of

5. The results, however, remain conjectural because many of the financial variables come out significantly and with the expected sign for only a sub-group of countries (which usually included the United States, the United Kingdom, Canada and Australia).

6. Of the ten countries considered here, the correlation is positive and significant (at the 5% level) for only three countries (Japan, the United Kingdom and Canada). Conversely, there appears to be much greater comovement in the net lending of the non-financial sector across countries, and similarly for the financial sector, at least among the larger countries (Appendix). Across 45 pair-wise country comparisons, non-financial corporate net lending is significantly positively correlated in over two-thirds of cases. This share is lower for financial corporate net lending at 42%, but among a smaller group of six countries including the largest and those where the financial sector is particularly important (the United States, Japan, Germany, the United Kingdom, Canada and Australia), all but one of 15 country pair-wise correlations are significant.

velocity to its long-term trend and a fall of house price-to-rent ratios to historical norms would, on the basis of the estimated equations, lead to a drop in corporate net lending of nearly 1% of GDP compared with its 2005 level.

6. In addition to cyclical and financial effects, there have been other factors, some of them accounting for a possible long-term increase in net lending, as reflected in time trends and/or shift variables in panel regressions of corporate net lending. In order to analyse the possible reasons for these trends, and so provide some insight into whether they will continue, it is useful to distinguish between gross corporate saving and gross fixed capital formation, noting that the increase in OECD corporate net lending between 2001 and 2005 reflects a roughly equivalent rise in gross saving and fall in gross fixed capital formation (Figure 1, above).

Identifying factors behind the increase in gross saving

7. An important long-term influence seems to come from a general shift in profit shares. Corporate gross operating surplus as a share of GDP rose by 1¼ per cent of GDP over the period 2001-05, broadly similar to the rise in corporate saving (Appendix). Much recent research suggests that the shift in income distribution towards profits can be ascribed to globalisation, technological change and wage moderation, the latter being at least in part linked to the former two influences.⁷ These global trends have accelerated in the recent period and wage moderation explains to some extent the increase of the OECD aggregate operating surplus since 2001.

8. Lower net interest payments and higher property income have also contributed to the trend increase in corporate gross saving. The fall in net interest payments reflected the combination of further declines in interest rates and the de-leveraging of corporate balance sheets after high indebtedness in the late 1990s. The positive contribution of net property income reflected to some extent an increase in profits from abroad.⁸

9. Correcting the corporate gross saving ratio of non-financial corporations for inflation gains (as it erodes the real value of their nominally denominated liabilities) changes historical profiles significantly; in particular gross saving would be increased substantially in the 1980s, and the long-term upward trend in a number of countries would tend to flatten or even be reversed (Appendix).⁹ However, in the first half of the current decade, adjusting for inflation has not had a significant effect on trends in countries' gross saving ratios,¹⁰ with corrections for inflation raising or reducing the change in profits over 2001-05 by around 0.2% of GDP in the largest countries.

10. At the OECD aggregate level, lower taxes (as a per cent of GDP) supported gross saving until 2002-03, after which, tax payments rose more quickly than profits, likely reflecting the progressive exhaustion of carry-over provisions for past losses and greater limits on tax sheltering activities. Since

7. See Molnar *et al.* (2007), IMF (2007), OECD (2007a), Ellis and Smith (2007), and Hornstein *et al.* (2007).

8. The net property income item includes dividends received (but is not net of those paid) from both national and foreign sources, reinvested earnings on foreign direct investment, primary incomes received from the investment of insurance technical reserves. In some countries, notably Japan and Italy where cross-shareholding is important, the rise in this income source was also due to an increase in dividend payout ratios (see below) reflecting the asymmetric treatment of dividends received (included) and paid (not included).

9. Due to limited data availability on corporate sector balance sheets, it is only possible to adjust long term trends in three of the seven major OECD economies.

10. See as well Box 1 in IMF (2006).

then, government accounts for 2006 and preliminary data for 2007 suggest that corporate income tax receipts have exhibited further buoyancy in most OECD countries.¹¹

Global forces behind lower investment ratios

11. Lower corporate investment as a per cent of GDP accounts for half of the increase in OECD aggregate corporate net lending from 2001 to 2005. Investment spending declined sharply as a share of GDP in the early 2000s and has since recovered only slowly (Figure 1 above) remaining well below its 2001 level in 2005.

12. An important influence on corporate investment over recent decades has been the well-documented fall in the relative price of investment goods, which can be partly explained by the growing importance of computers, semiconductors and software in combination with their rapidly falling prices starting in the 1980s. The implication is that firms over this period were able to increase real investment with lower nominal outlays. In the absence of such a fall in prices, and for the same real investment path, investment ratios (in nominal terms) would have shown an upward trend in most countries, or downward trends would at least have been moderated (for Germany and Japan) (see Appendix where cumulative effects are plotted). This phenomenon has also affected investment ratios over the first half of the current decade.¹² For the major seven countries, about half of the fall in the ratio of nominal business investment to GDP can, in an accounting sense, be attributed to lower relative prices (Table 2), the other half reflecting lower real investment.

Table 2. The effect of changes in the relative price of capital goods on investment-to-GDP ratios

2001-05, percentage points

	Change in I/GDP (nominal)	Change in I/GDP assuming constant relative price of investment
United States	-1.3	-0.9
Japan	0.1	0.3
Germany	-1.3	-0.6
France	-0.7	-0.2
Italy	0.0	0.1
United Kingdom	-1.5	-0.6
Canada	-0.2	1.2
Total (weighted by GDP)	-1.0	-0.5

Source: OECD calculations

11. See OECD (2007b).

12. In the United States for instance from 2000 to 2006 the price of non-residential investment increased by 6.3% compared with 16% for the GDP deflator. The price of structures increased by 50% while the price of information processing equipment and software declined by 20% and the price of other investment (industrial equipment, transportation equipment, other equipment) increased by 10%.

13. The decline in the relative price of investment goods, however, raises other questions. Coupled with the low interest rates and healthy equity markets seen over most of this period, the user cost of capital has been lowered as well, which in turn should have encouraged capital deepening. The opposite has been the case. This may possibly be due to previous over-accumulation of capital. Another possible explanation, at least for some countries, is that potential growth rates have declined over the past half decade compared with the 1990s, implying less need for investment. Analysis provided in Appendix suggests, however, that this explanation holds only for a few countries (Italy, Japan, and to a lesser extent Germany).

14. Decisions to invest in assets other than domestic physical capital may be the counterparts of some of the observed investment patterns. In particular, foreign direct investment may have been a substitute for domestic fixed capital formation.¹³ Adding such flows to domestic investment suggests that some of the increased net lending in the OECD has been used to fund direct investment abroad since 2001 (Figure 5).¹⁴ This is especially true for the United States where domestic investment has lagged the most (see next section).

The forces shaping cross-country differences

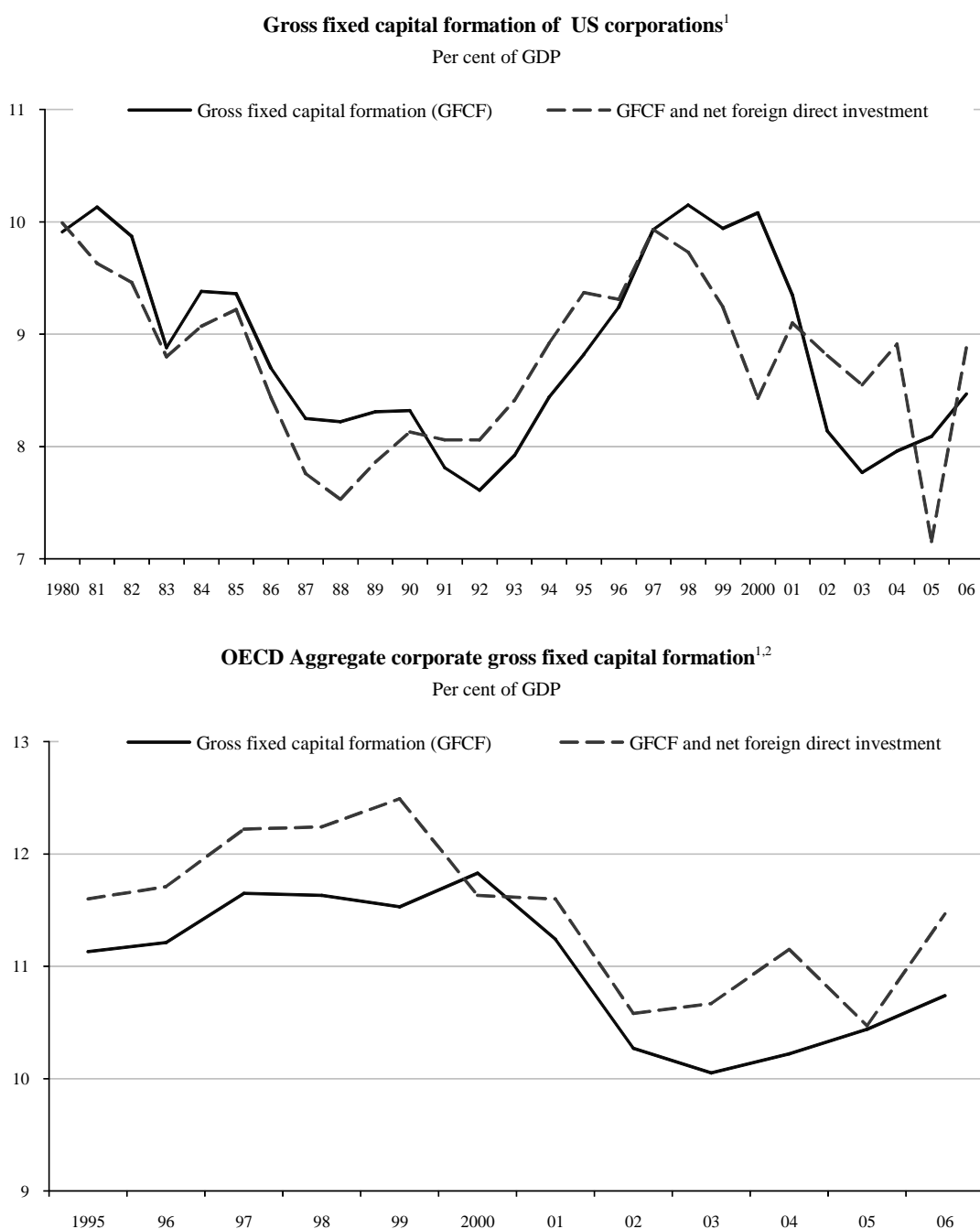
15. The increase in aggregate OECD corporate net lending hides heterogeneous country patterns in both saving and investment (Figure 3, above). Disproportionate contributions to high net lending have come from Japan, Germany and the United Kingdom, which together contributed over three-quarters of the increase in OECD corporate net lending over the period 2001-05 (while accounting for less than one quarter of OECD GDP), with Japan accounting for around 40%. The United States also made a large contribution to the overall change in OECD corporate net lending, but this was mainly by virtue of its size rather than because of an exceptional change in corporate net lending. Conversely, net lending declined in some other countries (including France and Italy).

16. In the case of Japan, the increase in net lending represents a continuation of a trend which has underpinned a sustained recovery in corporate balance sheets from the financial crisis of the early 1990s and which has been further boosted by gains in competitiveness since 2000.¹⁵ In the United Kingdom, the increase in corporate net lending has been particularly large in the financial sector. For Germany, an important factor behind the improvement in corporate net lending has been the continued gains in competitiveness since the mid-1990s that has boosted profitability. By the same token, deteriorations in competitiveness have held back net lending in Italy (since the mid-1990s) and France (since 2000). As well, the contribution of individual countries to higher net lending has taken different forms in the sense that it came from different sectors of the economy or from different components of net lending. These are further assessed by examining the components of net lending (Figure 6).

13. Among others, Moëc and Frey (2006) make this point in the case of the United States. In addition to fixed investment abroad (either green-field investment or fixed investment in existing structures), FDI flows include acquisitions of companies abroad.

14. The 2005 drop in US net outflows was triggered by changes in tax legislation (the American Jobs Creation Act of 2004) that reduced the rate of taxation on US multinational enterprises' qualifying dividends from abroad for one year. As a result, the distributions of earnings from foreign affiliates to parents in the United States increased in 2005 while earnings reinvested in affiliates abroad were reduced by a similar amount.

15. The econometric analysis presented in Appendix suggests that improvements in international manufacturing competitiveness (a fall in relative unit labour costs) have a positive impact on profitability (saving) and hence net corporate lending in some countries.

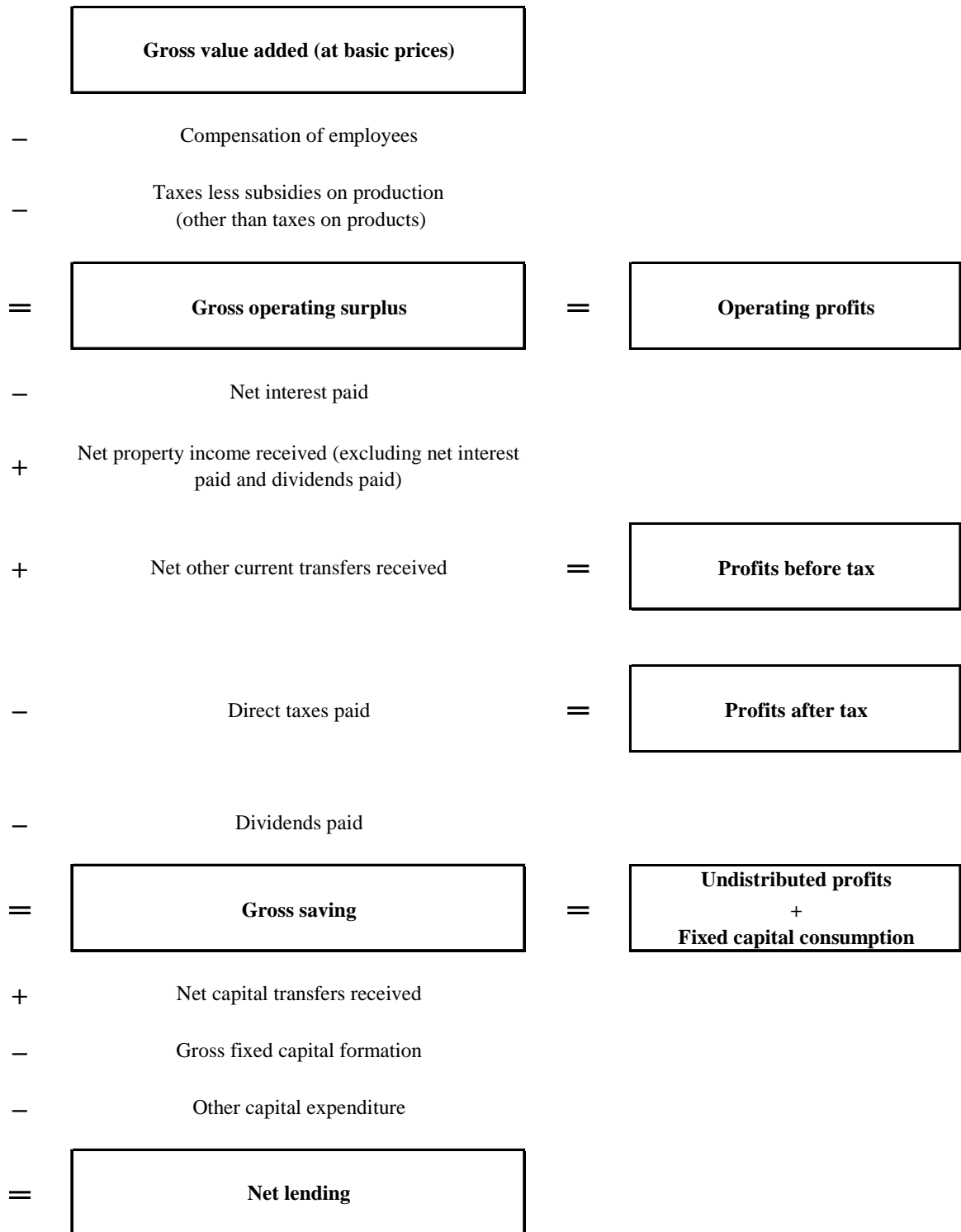
Figure 5. Gross fixed capital formation and foreign direct investment

1. In 2005, net foreign direct investment of US corporations is reduced by 1.5 percentage point of GDP as a temporary effect of tax legislation. The impact on aggregate OECD net foreign direct investment is about 0.6 percentage point of GDP.

2. Aggregates include Australia, Austria, Canada, Czech Republic, Denmark, Finland, France, Germany, Italy, Japan, Netherlands, Poland, Spain, United Kingdom, United States.

Source: OECD Annual National Accounts, OECD Main Economic Indicators and IMF International Financial Statistics.

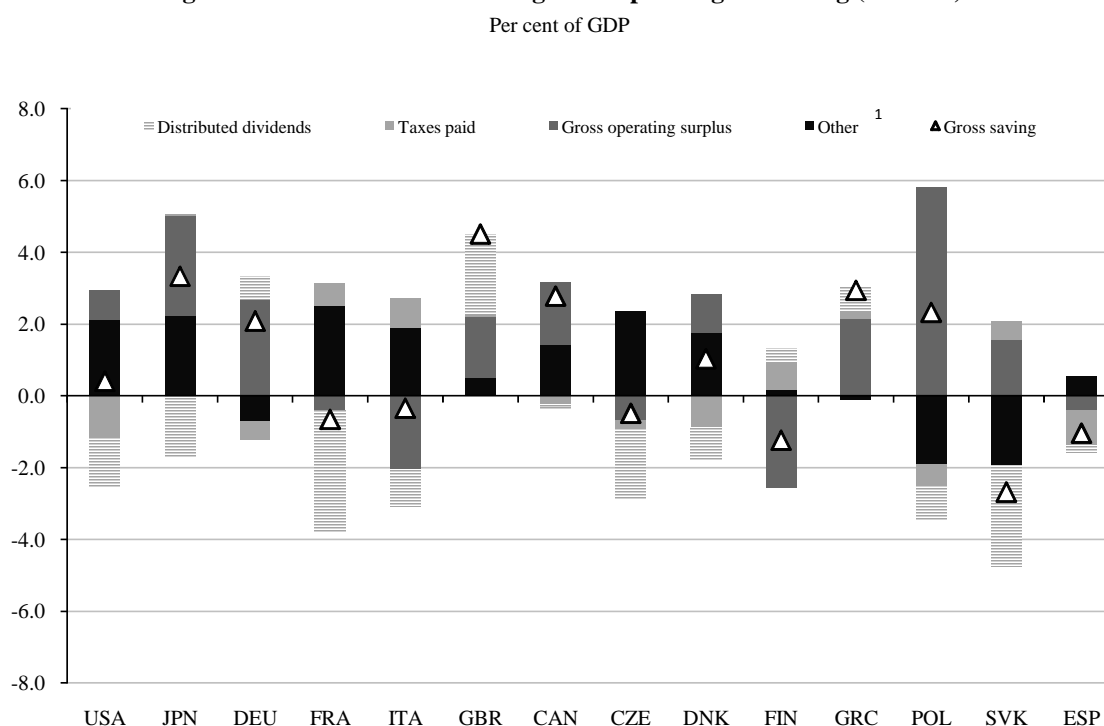
Figure 6. Main concepts used to describe corporate sector accounts



Cross country differences in the evolution of gross saving

17. Cross country differences in the evolution of gross corporate saving over the past half decade have tended to reflect to a large extent those of the gross operating surplus (Figure 7 and Appendix). Such differences across countries are likely to be due to countries' exposure to already mentioned global factors (accelerated globalisation and technological progress), presumably depending on institutional framework conditions (such as product and labour market regulations), as well as the sectoral composition of their economies.¹⁶

Figure 7. Breakdown of the change in corporate gross saving (2001-05)



1. Other consists of net property income and other transfers received less net interest paid.

Source: OECD Annual National Accounts and national sources.

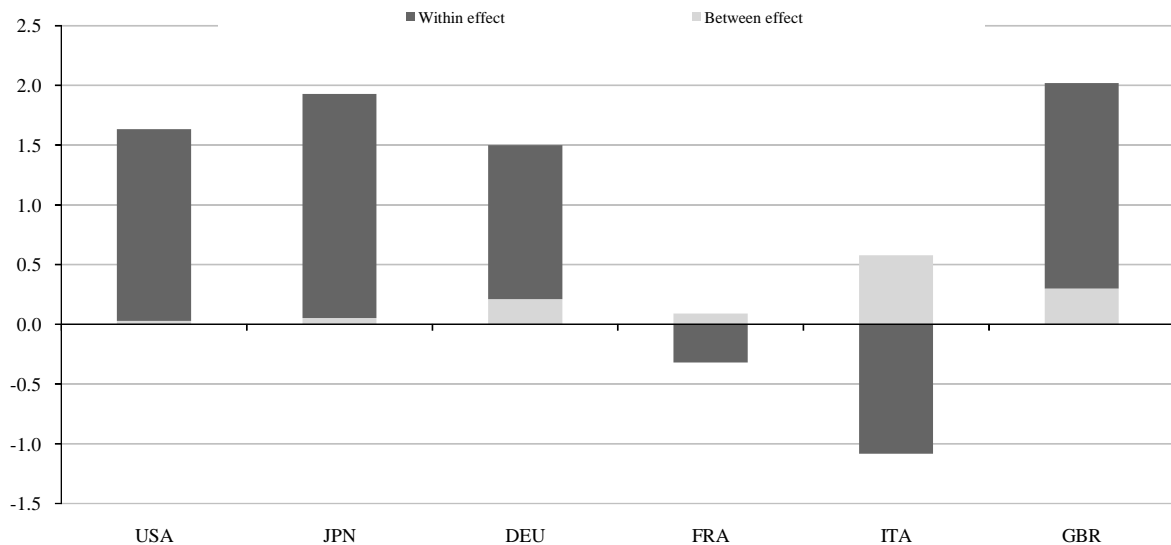
18. A breakdown of the profit share (gross operating surplus as a percent of GDP) into effects due to changing profitability within sectors and those due to changing sectoral composition shows that cross-country differences over the first half of the current decade have been mainly driven by within-sector effects (Figure 8).¹⁷ Looking at the changes in more detail, the contribution of the manufacturing sector is where differences across countries are most striking (Figure 9), reflecting to a large extent the evolution of competitiveness; the manufacturing gross operating surplus has risen strongly in Japan and Germany where

16. Another potential source of country differences is the extent of the reliance on stock options as a part of employees' remuneration and its change over time. Labour costs, as measured by the national accounts, tend to underestimate the costs of stock options which are recorded only at the time they are exercised. However, no exhaustive cross country data are available to assess the magnitude of their impact.

17. Due to data limitations such a detailed sectoral analysis is only possible at the gross operating surplus level. See Appendix for details on how these effects are calculated.

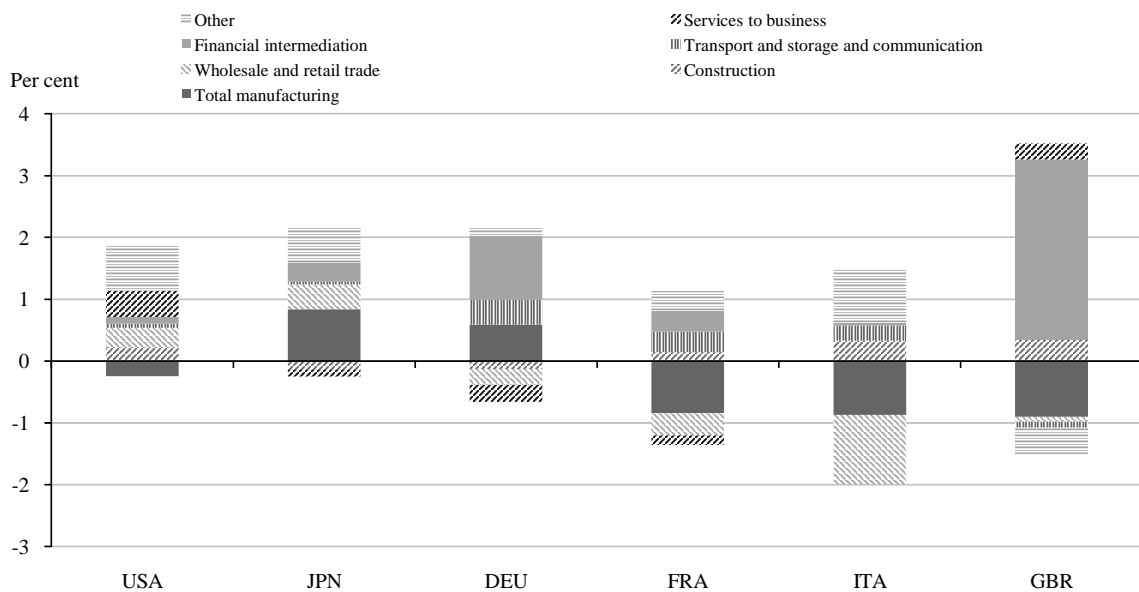
there have been continued improvements in competitiveness, whereas the reverse has occurred in France and Italy. Other sources of cross country divergence come from the services to business that supported profits in the United Kingdom and the United States, and the extraction of crude petroleum and natural gas, and agriculture sectors that account for a large share of the increase in the United States (respectively 16 and 12%).

Figure 8. Contribution of within and between sector effects to the change in the gross operating surplus (2001-04)
Percentage points of value-added



Source: EU-KLEMS and OECD calculations.

Figure 9. Contribution of the sectors to the change in the gross operating surplus (2001-04)



Source: EU-KLEMS and OECD calculations.

19. On the other hand, the financial sector and, to a lesser extent, the construction sector contributed positively to the aggregate rise in profits in most G7 countries. Once again, the United Kingdom stands out for the exceptionally strong contribution of the financial sector.

20. Dividends generally did not increase as fast as profits but there were also substantial cross-country differences in the extent to which dividends lagged profits and these were an important source of cross-country divergence in gross saving (Table 3). On the one hand, in the United States and in most continental European countries, dividend payout ratios increased over the period so that a large share of the additional profits was transferred to shareholders.¹⁸ On the other hand, in Germany, Canada, the United Kingdom and Greece (and to a lesser extent Austria and Australia) dividends grew much more slowly than profits, boosting undistributed profits and gross saving.¹⁹ It is not clear at this stage in which countries changes in dividend payout ratios observed since 2001 are temporary and in which countries they reflect more structural changes in the behaviour of corporations. Where corporate saving is high and payout ratios have decreased, shareholders could demand a larger share of profits in the form of dividends. Dividends may in any case continue to be a potential source of net lending divergence within the OECD corporate sector.

Table 3. Dividend payouts in various OECD countries

	Average payout 1995-2000 ¹	Change in profits after tax 2001-2005	Marginal payout 2001-05 ²
United States	36%	38%	51%
Japan	8%	27%	33%
Germany	57%	12%	8%
France	45%	19%	78%
Italy	59%	18%	92%
United Kingdom	57%	35%	8%
Canada	16%	50%	4%
Australia	36%	41%	27%
Austria	45%	34%	34%
Denmark	22%	26%	38%
Finland	28%	6%	48%
Greece	32%	56%	0%
Netherlands	32%	38%	88%
Spain	29%	26%	46%

Note: The average payout 1995-2000 is defined as the sum of distributed dividends over 1995-2000 divided by the sum of profits after tax. The marginal payout 2001-05 is defined as the change in dividends between 2001 and 2005 divided by the change in profits before taxes between 2001 and 2005.

1. 1999-2000 for Spain.

2. Figures in bold indicate a large payout over the recent period.

Source: OECD calculations

18. In the United States, the increase in dividend payouts also reflects the reduction of the personal income tax rates on dividend income (in 2003 from 38 to 15%). Both for the United States and Europe there is evidence that over 1989-2003 the increase in aggregate dividends hides the fact that fewer companies paid dividends but the ones which paid some, paid more. See von Eije and Megginson (2006).

19. In the United Kingdom, this reduction may be a response to higher current and expected contributions to pension funds. Bunn and Trivedi (2005), using a large panel of quoted UK firms from 1983 to 2002, show that dividends are reduced in response to higher pension contributions. Companies that seek to tackle under-funding of defined benefit pension schemes by raising their contributions could pay lower dividends than they would have otherwise.

21. The use of share buybacks to channel funds to shareholders complicates the assessment. Share buybacks involve the exchange of cash against equity and therefore do not affect national accounts gross saving while the distribution of dividends would. Statistically, buybacks appear as a use of corporate saving rather than as an influence on saving. In the United States, several sources suggest that share buybacks have increased at least as fast as dividends. Share buybacks by S&P 500 companies, from 2001 to 2005, rose by 1.5% of GDP; *i.e.* as much as aggregate dividends paid and more than net lending of the whole corporate sector.²⁰ In a comparison of flow of funds data for non financial corporations, the United States stands out with a large increase in net purchases of equities that reflects net purchases of shares from other institutional sectors, as a result of share buybacks and mergers (Figure 10).²¹ In the United Kingdom, flow of funds data also suggest that share buybacks played an important role.²² This increase in share buybacks, in the United States and the United Kingdom, is likely to have an important cyclical component (when profits are increasing, share buybacks are a way to channel extra funds to shareholders without taking the risk of having to cut dividends if profits drop subsequently). In other countries, such operations have only been liberalised recently (in most cases in the late 1990s) and data are difficult to obtain. Some data suggest, however, that, in the euro area buybacks have not increased significantly over 2001-05.²³

Cross-country differences in the evolution of gross investment

22. There is less heterogeneity across countries in the evolution of corporate investment ratios since 2001 than in the evolution of corporate gross saving ratios. In most OECD countries, investment spending as a percentage of GDP declined in the early 2000s and has since recovered only slowly. In 2005, it remained below its 2001 level in nearly all countries including the largest ones (Figure 3, above). Nevertheless, while in Japan, the United Kingdom, Germany and Canada it is higher gross saving that contributed most to the increase in net lending, in the United States it is lower investment.

23. Indeed, the development of US business investment as a share of GDP from the most recent cyclical trough has lagged behind that in other countries as well as that experienced in earlier recoveries. Differences in the evolution of steady-state investment-to-GDP ratios due to changes in potential growth and depreciation rates do not seem to provide an explanation as to why investment has been particularly weak in the United States (Appendix).

20. Several factors tend to make buybacks attractive. In several countries, capital gains are taxed less than dividends. Share buybacks give also discretion to shareholders to opt in or out and to managers to avoid increasing and then cutting dividends. Furthermore, buybacks are more likely when companies have distributed many stock options, both as a response to concerns regarding excessive dilution and because they potentially benefit the holders of options while dividends do not. Last, buybacks are also a signal that management believes the stock is undervalued. See for instance Legg Mason Capital Management (2006).

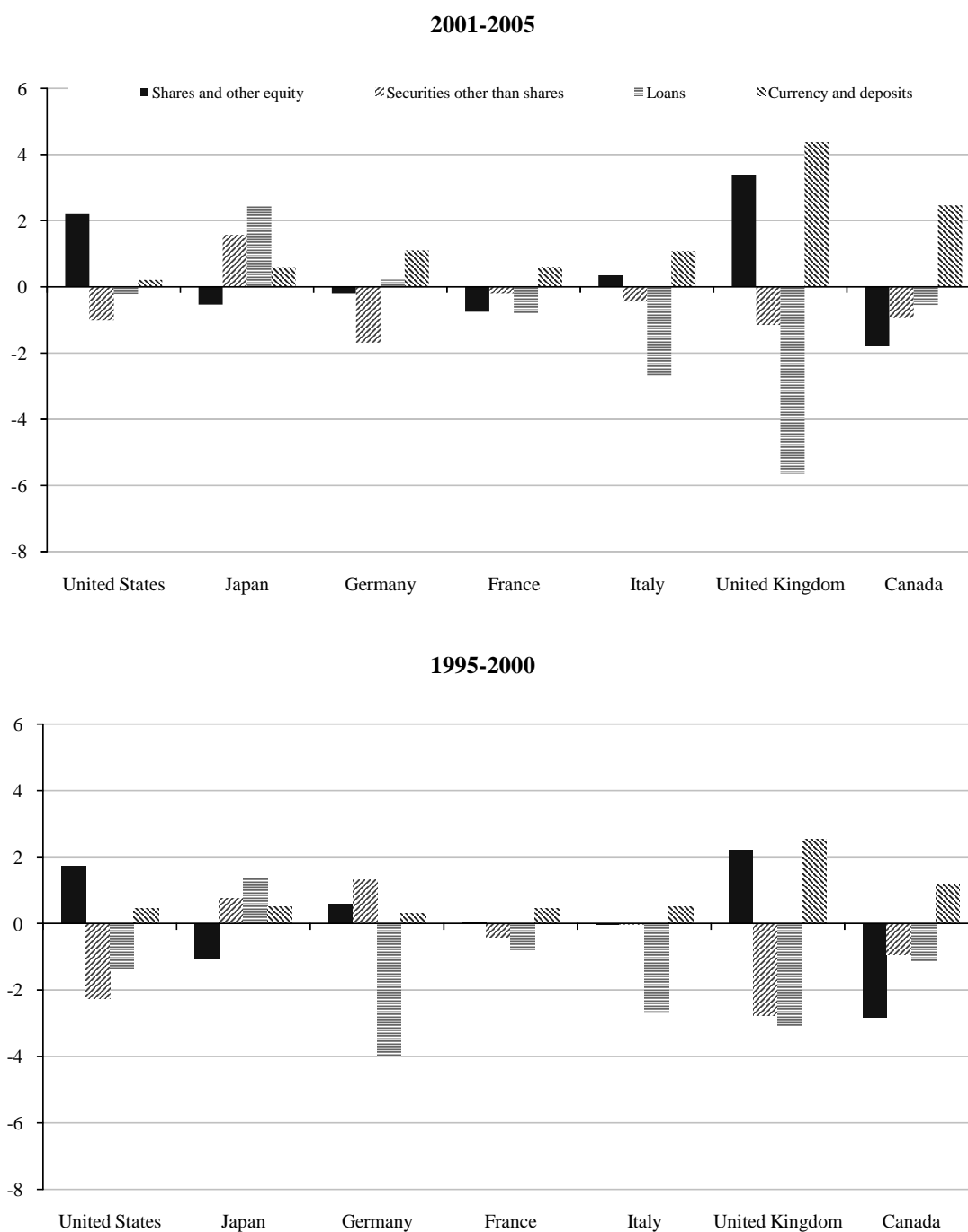
21. A major difference between this situation and that of the late 1990s, where net equity purchases were also important, is that corporations over the 2001-05 period did not borrow to fund equity retirements but instead relied more on savings. The holding of cash does not seem to have increased significantly in the United States, contrary to some widespread views.

22. Cash holdings (deposits and short-term assets, as well as a residual item to insure that the accounts add up) have tended to increase in many countries, most notably in the United Kingdom and Canada, which may reflect an increase in firm-level uncertainty, either due to general factors such as globalisation or more country-specific factors such as the degree of under-funding of company pensions.

23. See ECB (2007).

Figure 10. Financial flows of non-financial corporations: selected items

Annual average, per cent of GDP



Note: Excluded are insurance technical reserves, other accounts receivable and the statistical discrepancy.

Source: OECD National accounts and national sources.

The future evolution of corporate net lending and its implications

24. Looking forward, and based on the analysis presented here and summarised in Table 1 above, some of the factors that have driven aggregate OECD corporate net lending are likely to fade or reverse while others, that reflect structural changes in corporate behaviour and in their environment, are likely to persist. These developments may have implications for interest rates and, to the extent that cross-country differences in net lending had an impact on current accounts, something that is difficult to determine, there may as well be implications for global imbalances (Box 2).

25. Recent information suggests that there has been a decline in aggregate OECD corporate net lending in 2006 (Figure 1 above). Based on the current *OECD Economic Outlook*, the immediate prospects are for a further modest fall in corporate net lending from that witnessed in 2006, due in the main to additional increases in business investment in Europe and Japan. The expected increase in labour costs would also reduce net lending, although only mildly. This scenario is also consistent with the recovery maturing in most economies, a point at which net lending has historically tended to slow or fall. It also supposes that commodity prices stabilise, putting a cap on further increases in profits in countries such as the United States (as well as the other major commodities producers such as Australia and Canada). The contribution of the corporate sector to global saving is therefore likely to decrease further in the near future.

26. The limited adjustment in corporate saving presented in this scenario may still underestimate the contraction of profits in the financial sector as a result of the financial turmoil, particularly where it contributed the most to the increase in profits.²⁴ This scenario may also underestimate the full impact of the on-going adjustment in the US housing market that affects profits both in the financial sector and in construction. The possibility of housing market adjustment in other countries is another downside risk to OECD corporate gross saving. On the other hand, the tightening of credit standards may slow corporate investment growth to a larger extent than expected.

Box 2. The relationship of corporate net lending with other sectors

Over the period 2001-05, the association between changes in corporate net lending and changes in external imbalances has been fairly tight (Figure). Countries with more marked increases in corporate net lending have generally experienced stronger improvements in their current account positions. Conversely, countries with decreasing, stagnating or modestly increasing corporate net lending typically experienced deteriorating current account imbalances. The reasons behind this correlation, which is stronger over this recent period than it used to be, are not entirely clear though some conjectures may be made.

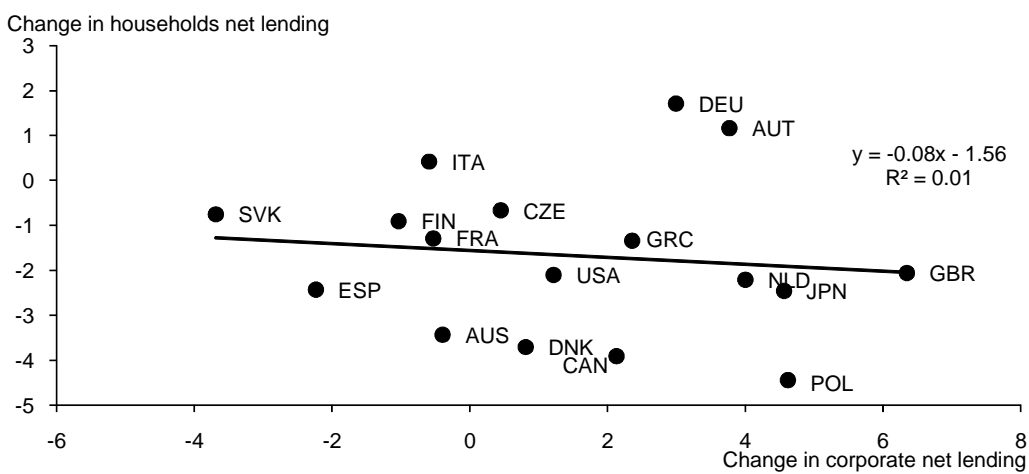
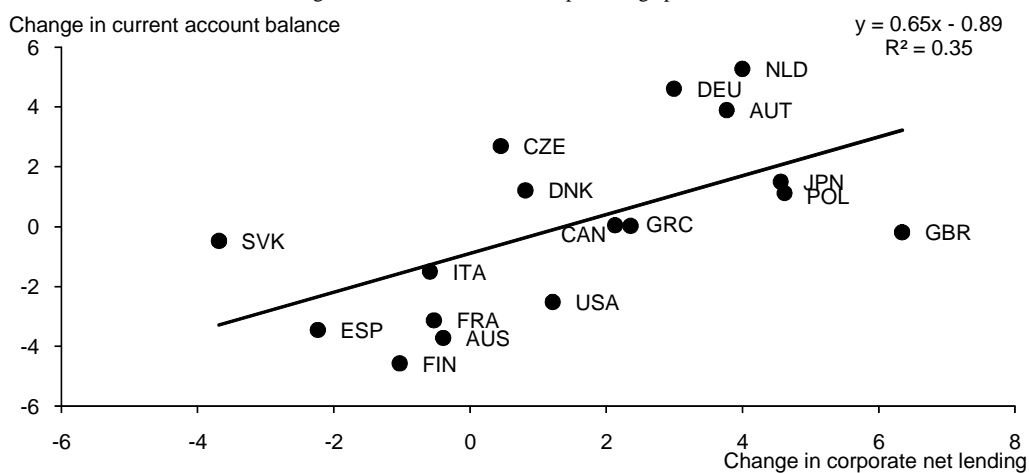
Cross-country data show almost no relation between changes in household net lending and changes in corporate balances. That is, where corporate profits and saving have increased they have to a much lesser extent been ploughed back into domestic investment or generated commensurate increases in household spending, possibly suggesting difficulties in "piercing the corporate veil". Speculatively, concomitant changes in current account imbalances and corporate net lending may reflect ongoing financial globalisation trends. When it takes the form of increasing FDI flows, financial globalisation may weaken the link between domestic corporate saving and domestic investment. In this scenario, which is supported by some empirical evidence, increasing capital mobility jointly affects external balances and the national accounts measure of corporate net lending independently from changes in the relative strength of national saving. In addition, households with increasingly internationally diversified portfolios will respond less and less to domestic corporate saving and more and more to saving in the corporations they own abroad.

24. According to recently released data for 2006, such an adjustment already started in 2006 in the United Kingdom, even before the 2007 financial turmoil.

Box 2. The relationship of corporate net lending with other sectors (continued)

The relationship between corporate and households net lending and the current account balance

Change between 2001 and 2005 in percentage points of GDP



Source: OECD Annual National Accounts and national sources.

27. In the longer term, to the extent that the current high level of OECD corporate net lending is due largely to the combination of more synchronised business cycles across the OECD and a global financial and housing boom, it is difficult to predict whether such a situation may appear again. Considering the other long term structural forces at work, wage moderation that has been brought about by globalisation is unlikely to be reversed. As well, inflation is expected to remain low and stable and as such it is not expected to have a significant influence on corporate saving going forward.

28. If the business cycles become less synchronised across the OECD, cross country divergences in corporate net lending position are likely to widen. Other factors such as dividend and share buyback behaviour may, on the other hand, become similar from one country to the next. For example, in the United States and the United Kingdom, the recent increase in share buybacks has had an important cyclical component, which may normalise when profits slow down, while in countries where the liberalisation of such transactions is recent, buybacks are likely to play an increasing role in the future. The impact of such changes on cross country differences in net lending is difficult to assess.

APPENDIX
BACKGROUND MATERIAL

29. This Appendix deals with a number of issues related to corporate net lending, including measurement, estimation procedures and how various macroeconomic variables have affected both saving and investment. It is divided into four subsections.

Issues in measuring saving and profits

30. This paper has relied mainly on national accounts data, in particular the income accounts of corporations (which are usually split between financial and non-financial corporations). The gross saving of the corporate sector is measured by aggregate undistributed profits. Industry-based accounts have also been used.

31. A broader business sector includes both corporations and unincorporated enterprises (taking account of self employed). Since complete individual accounts are typically not published, the national accounts are not able to provide the same details. They are typically included in the households sector, where the split between the remuneration of labour from that of capital is not made. Where available, estimates tend to show that saving and net lending by unincorporated business as shares of GDP were quite flat over the current decade.

Limits associated with the use of national corporate accounts

32. Data are not available on a consistent basis for all OECD countries over a long period. As well, 2006 data only became available very recently for most countries and is still missing for some. Moreover, corporate accounts are frequently revised and in general only “settle down” after two years. For instance, in 2006, gross saving was revised down by ½ per cent of GDP for 2003-04 in the United States.

National account data and corporate statements

33. National account definitions and measures of profits are quite different from those of profits reported in financial statements. First national account estimates are usually based on the tax returns of corporations, not on their financial statements, and there are major differences between the two types of statements, regarding notably the treatment of stock options, the depreciation of capital, the inclusion or not of exceptional items such as capital gains, provisions for losses and contributions to company pensions funds.²⁵ The timing when the operations are recorded is also different between the two types of statements (accrual vs. actual) but this is likely to matter only in the short run. In addition to the difference between

25 . For instance, in the United States, companies report the exercise of options in their tax returns but not in their income statements. They have in fact the choice when they issue an option to report either its intrinsic costs (small) or fair price in their income statements. The second option is rarely used. The periods when option exercise is important are periods of rising divergence between shareholder profits and taxable profits. See Mead *et al.* (2004) for more details. The contributions to defined-benefits pension funds are expenses in the national accounts but are not necessarily treated as such in financial statements. For instance in the United States until 2005 most pension figures were carried in footnotes to financial statements and brought onto actual statements only over time.

income statements and tax returns, additional adjustments are made by the statisticians building the national accounts.²⁶ Revenues from abroad are also accounted for differently: profits in financial statements measure the worldwide income, and the earnings from overseas operations has been rising, while for tax purposes only repatriated earnings are taken into account. National accounts try to reflect fully profits and losses recorded by foreign subsidiaries by adding reinvested earnings into FDI (as property income). However, information on the latter is scarce and is considered to be of poor quality. Lastly, the data extracted from financial statements are rarely revised, while national accounts data are often revised over history, in particular to ensure time consistency after a change in accounting procedure or restatement of corporate accounts.²⁷

34. Figure 11 compares the two types of series using alternative measures of a similar concept of profits (saving net of depreciation minus dividends) from the national accounts and aggregated from major listed companies.²⁸ It shows that they moved broadly in line with each other, at least for the United States and Continental Europe up until the late 1990s. Since then, reported company earnings have gone through a much more pronounced cycle, in particular growing much faster than the national accounts measure recently. In Japan, the profile of the two series is different from other countries, but the end of period developments are similar. Profits of major listed companies were hit more by the financial crisis in the 1990s and the appreciation of the yen until 1995. They then stabilised in the late 1990s more or less in line with aggregate national account data, before soaring in recent years.²⁹

35. The differences between the two series may arise mainly from two sources. First, the financial sector, the energy sector and companies earning profits abroad tend to be over-represented in the sample of listed companies in most countries, and these have been the most profitable over the past half decade. Second, with the national accounts measure relying on tax returns, the increasing gap also reflects the combination of an extensive use of accounting measures to boost reported profits while increasing use is made of tax sheltering activity.³⁰ The factors behind the most recent disconnect are difficult to disentangle. A possible explanation may be the increasing share of profits abroad since companies earning profits abroad are over-represented in the sample of the large companies and these revenues may be under reported in the national accounts.

26. For instance, provision for losses in the financial sector (that have diminished over the past half decade in line with stronger growth) are not included as an expense in the national accounts.

27. See for instance Mead *et al.* (2004). In the United States restatements of financial statements have become more frequent but the changes are still not reflected in the index. See GAO (2006).

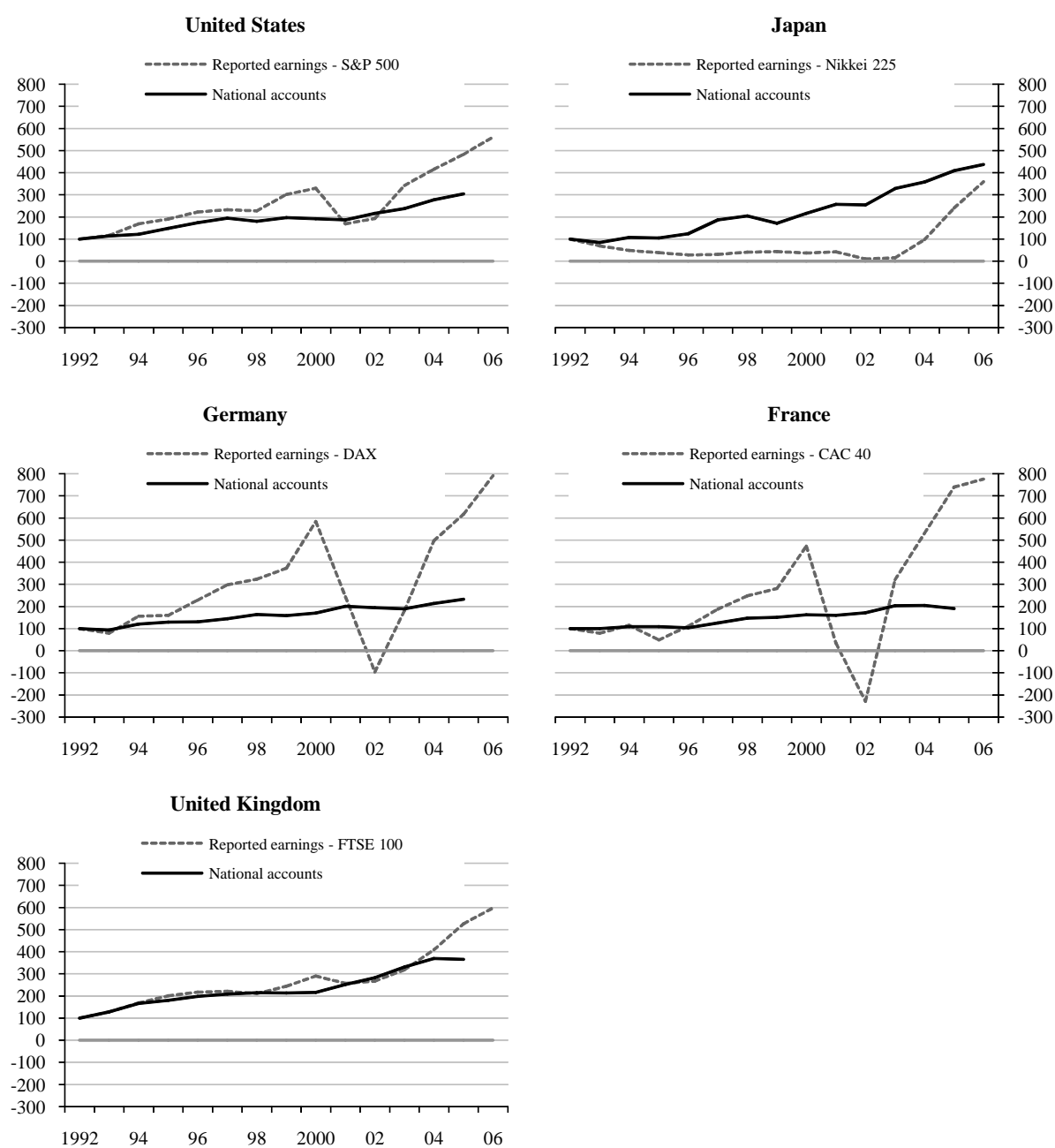
28. The indexes for reported earnings used were built differently from one country to another, depending on data availability. For the United States, the data on reported earnings come directly from Standards and Poor's and represent reported earnings for S&P500 listed companies. For the United Kingdom and Japan, reported earnings are calculated as market capitalisation divided by the price-earnings ratios. The data correspond to FTSE 100 for the United Kingdom and Nikkei 225 for Japan. For France and Germany, where it was not possible to find reliable aggregate price-earnings ratios, reported earnings of the main listed companies were extracted from the financial statements (using the Worldscope database) and aggregated. The selected companies are those present in respectively the CAC 40 and DAX 30 in 2006 and for which data exists over 1992-2005.

29. Data are only available for Canada since 2001. Since then reported earnings have grown much more than profits recorded by the national accounts.

30. For the United States, see Desai (2002 and 2005) and Nordhaus (2002) on some of the ways companies can boost reported earnings. The corrections of accounting trickery at the turn of the century resulted in adjustments via exceptional items in the following years which reduced profits in financial statements. Himmelberg *et al.* (2004) point also to the impact of increased reliance on stock options.

Figure 11. Profits in the national accounts and major listed companies

Nominal index, 1992 = 100



Note: The National accounts concept referred to is profits after tax, net of depreciation and before dividend distribution.

Source: Datastream, Worldscope, Standard & Poors, OECD Annual National Accounts.

Regression analysis explaining net lending

36. This subsection provides details of the pooled regression with fixed effects explaining corporate net lending for ten OECD countries that are discussed in the main text.

37. For each country corporate net lending as a per cent of GDP is regressed on the output gap, a measure of relative unit labour costs in the manufacturing sector and a time trend.³¹ The estimation period for most countries runs from 1980 to 2005, with the longest starting in 1970. A constraint that the coefficient on the output gap is the same across all country equations is easily accepted at the 5% significance level. The same constraint was applied to relative unit labour costs but was only accepted when the United States, Canada and Denmark were not included. Excluded as well are time trends that were found to be insignificant. The implied long-run coefficient with respect to each of these explanatory variables is reported in Table 4. The coefficient on an additional dummy shift variable, which takes the value unity for the period 2002 to 2005 and zero elsewhere, is also reported in the Table.

Table 4. **Regression results for net lending**
Long-run coefficients

	Trend	Output gap	Manufacturing competitiveness ¹	2002-05 Dummy
Common coefficients		-0.532**	-0.084**	
Country specific coefficients				
United States	..			1.164
Canada	0.143**			2.332**
Denmark	..			0.480
Japan	0.666**			1.498
Germany	..			2.646*
France	..			-0.899
Italy	0.347**			-0.668
United Kingdom	..			4.148**
Australia	..			1.390*
Finland	..			1.129

R² = 0.79

DW = 1.84 (Regression period 1971-2005, unbalance panel)

Note: * and ** indicate significance at the 10% and 5% level respectively.

1. The estimated effect excludes the United States, Canada and Denmark, for which the restriction of the competitiveness coefficient to zero was accepted by the data.

Source: OECD calculations

38. There is little evidence of any cross correlation of residuals across country equations, except in the case of the United States and Canada, or serial correlation of residuals in individual country equations. The goodness of fit varies between individual country equations; for most equations the standard error is between 1 and 2 % points of GDP, but for Japan it is higher at 2.6% points of GDP, although for Japan the variation in the dependent variable (net lending as a % of GDP) is also much higher than for any other country.

31. Several others variables were tried but were found insignificant.

Distinguishing between financial and non-financial sector corporate net lending

39. This subsection reports the results from simple correlation and regression analysis examining differences and similarities between movements in the net lending of financial and non-financial corporations. The correlations between these two series within each country are shown in Table 5, while the pair-wise correlations between movements in the net lending of the non-financial sector across countries, and financial sector net lending across countries, are shown in Tables 6 and 7, respectively. In each case correlations which are positive at the 5% significance level are highlighted. Table 8 summarises some results from a simple regression analysis in which non-financial (or financial) corporate net lending (as a per cent of GDP) is regressed on a lagged dependent variable, contemporaneous and lagged output gaps, a time trend and a dummy shift variable for the period 2002-05.

Table 5. Correlations between financial and non-financial companies net lending

United States	0.01
Japan	0.86
Germany	0.23
France	-0.06
Italy	-0.72
United Kingdom	0.63
Canada	0.76
Australia	0.14
Denmark	-0.14
Finland	0.07

Note: The bolded correlations are those that are positive and statistically significant at the 5% level.

Source: OECD calculations

Table 6. Pair-wise country correlations in non-financial companies net lending (over pair-wise common samples)

	United States	Japan	Germany	France	Italy	United Kingdom	Canada	Australia	Denmark	Finland
United States		-0.01	0.35	0.42	0.15	0.25	0.34	0.18	-0.21	-0.15
Japan	-0.01		0.71	0.36	0.67	0.74	0.77	0.41	0.30	0.87
Germany	0.35	0.71		0.07	0.54	0.74	0.73	0.15	-0.36	0.72
France	0.42	0.36	0.07		0.84	0.22	0.65	0.48	0.06	0.37
Italy	0.15	0.67	0.54	0.84		0.64	0.83	0.61	0.43	0.74
United Kingdom	0.25	0.74	0.74	0.22	0.64		0.84	0.53	0.26	0.77
Canada	0.34	0.77	0.73	0.65	0.83	0.84		0.64	0.39	0.71
Australia	0.18	0.41	0.15	0.48	0.61	0.53	0.64		0.59	0.58
Denmark	-0.21	0.30	-0.36	0.06	0.43	0.26	0.39	0.59		0.51
Finland	-0.15	0.87	0.72	0.37	0.74	0.77	0.71	0.58	0.51	

Note: The shaded correlations are those that are positive and statistically significant at the 5% level.

Source: OECD calculations

Table 7. Pair-wise country correlations in financial companies net lending (over pair-wise common samples)

	United States	Japan	Germany	United Kingdom	Canada	Australia	France	Italy	Finland	Denmark
United States		0.73	0.55	0.37	0.49	0.63	-0.52	-0.32	-0.43	0.08
Japan	0.73		0.50	0.45	0.77	0.66	-0.67	-0.58	-0.10	0.26
Germany	0.55	0.50		0.51	0.49	0.67	0.10	-0.26	-0.47	0.57
United Kingdom	0.37	0.45	0.51		0.44	0.31	0.14	0.05	0.03	0.49
Canada	0.49	0.77	0.49	0.44		0.65	-0.40	-0.53	-0.15	0.34
Australia	0.63	0.66	0.67	0.31	0.65		-0.40	-0.31	-0.26	0.24
France	-0.52	-0.67	0.10	0.14	-0.40	-0.40		0.48	0.21	0.41
Italy	-0.32	-0.58	-0.26	0.05	-0.53	-0.31	0.48		-0.02	-0.33
Finland	-0.43	-0.10	-0.47	0.03	-0.15	-0.26	0.21	-0.02		0.13
Denmark	0.08	0.26	0.57	0.49	0.34	0.24	0.41	-0.33	0.13	

Note: The shaded correlations are those that are positive and statistically significant at the 5% level. Country ordering has been arranged to emphasise close correlations among the first six countries.

Source: OECD calculations

Table 8. Features of financial and non-financial corporate net lending

	Sample high reached during period 2002-05?		Cyclical effects ¹		Trend effects ²		Test for positive dummy over period 2002-05 ³	
	Financial	Non-Financial	Financial	Non-Financial	Financial	Non-Financial	Financial	Non-Financial
United States	Yes	No		**			*	
Japan	Yes	Yes	*	**	**	**		
Germany	Yes	Yes					**	
France	No	No		*				
Italy	No	No		*	**			
United Kingdom	Yes	Yes		**			**	**
Canada	Yes	Yes		*	**	**	**	*
Australia	Yes	No	*	**			**	
Denmark	No	No		**				
Finland	No	No	**	*				

Note: Results reported in the final 3 pairs of columns are based on a regression of net lending (as a % of GDP) on lagged net lending, contemporaneous and lagged output gap, a time trend and a dummy variable for the period 2002-05, where ** and * denotes significance at the 5% and 10% significance level, respectively.

1. Test of the joint statistical significance of the output gap variables.

2. Statistical significance of a time trend variable.

3. Statistical significance of a dummy variable which takes the value unity over the period 2002-05.

Source: OECD calculations

Regression analysis explaining financial sector net lending

40. This subsection provides details of the pooled regressions with fixed effects explaining financial sector corporate net lending for ten OECD countries discussed in the main text. Financial sector corporate net lending (as a per cent of GDP) was alternatively regressed on a lagged dependent variable and a number of financial variables, namely a measure of broad money growth relative to nominal GDP growth, the house price-to-rent ratio, stock market capitalisation and a measure of global liquidity. The results were mixed, partly because of multicollinearity among the explanatory variables, but with many variables significant and with the expected sign for only a sub-group of countries which usually included the United States, the United Kingdom, Canada and Australia. A preferred specification is reported in Table 9, imposing data-acceptable restrictions of common long-run coefficient for monetary growth and a common long-run coefficient on the ratio of house prices to rents among a smaller group of English-speaking countries (plus Denmark), although the latter is not robust if a dummy shift variable is included over the period 2002-05.

Table 9. **Regression results for net lending of financial corporations**

	Long-run coefficients
Money gap (all countries)¹	0.053 ***
House price-to-rent ratio	
English speaking countries and Denmark	0.026 ***
Japan	-0.037
Germany	-0.026
France	0.012
Italy	-0.005
Finland	-0.008
Country dummies (2002-05)²	
United States	0.324
Canada	0.255
Denmark	1.512 ***
Japan	0.358
Germany	0.298
France	-0.043
Italy	-0.138
United Kingdom	2.849 ***
Australia	0.886 *
Finland	-0.258

Note: *, ** and *** indicate significance at the 10%, 5% and 1% level respectively.

1. The money gap is defined as the deviation of a broad money aggregate (relative to nominal GDP) from its long-term trend (estimated using a Hodrick-Prescott filter).

2. A separate regression was run with a dummy variable for the latest cyclical upswing 2002-05. The coefficient of this dummy is shown in this column.

Source: OECD calculations

Some factors that have influenced corporate saving and investment rates over time

41. This subsection shows the effects that particular broad macroeconomic variables have had on both saving and investment (as proportions of nominal GDP) over time. Some of these, as noted in the main text, are no longer exerting an influence.

The effect of the gross operating surplus on saving

42. The long-term evolution of corporate gross saving as a share of GDP has been to a large extent accounted for by developments in the gross operating surplus as a share of GDP, a measure of the profit share (Figure 12). There has been an upward trend in the profit share since the early 1980s in Australia and Denmark and since the mid-1990s in Canada, Finland, Germany and the United States.

43. In the largest economies, shifts to more profitable sectors systematically contributed to an increase in the profit share over the past two and a half decades: a breakdown of the profit share into effects due to changing profitability within-sectors and those due to changing sectoral composition shows that profits were mainly driven by within-sector effects, while between-sector effects were almost always positive (Figure 13).³²

The effect of interest costs and inflation on saving

44. In a majority of countries, lower net interest payments (driven by the declines in inflation) and higher property income have also contributed to the trend increase in gross saving. In Japan and Italy, they even drove the trend. Since corporations are usually net debtors, gains are realised when inflation erodes the real value of their nominally denominated liabilities. Hence, high interest payments during periods of high inflation can be seen as corresponding partly to a repayment of principal (*i.e.* a transfer that offsets the inflationary erosions of the lenders real asset value). Correcting the gross saving ratio of non-financial corporations for inflation gains changes historical trends significantly; in particular gross saving would be increased, notably in the 1980s, and the upward trend in a number of countries would tend to flatten or even be reversed (Figure 14).³³ As noted in the main text, over the first half of the current decade, adjusting for inflation has not had a significant on trends in countries' gross saving ratios.

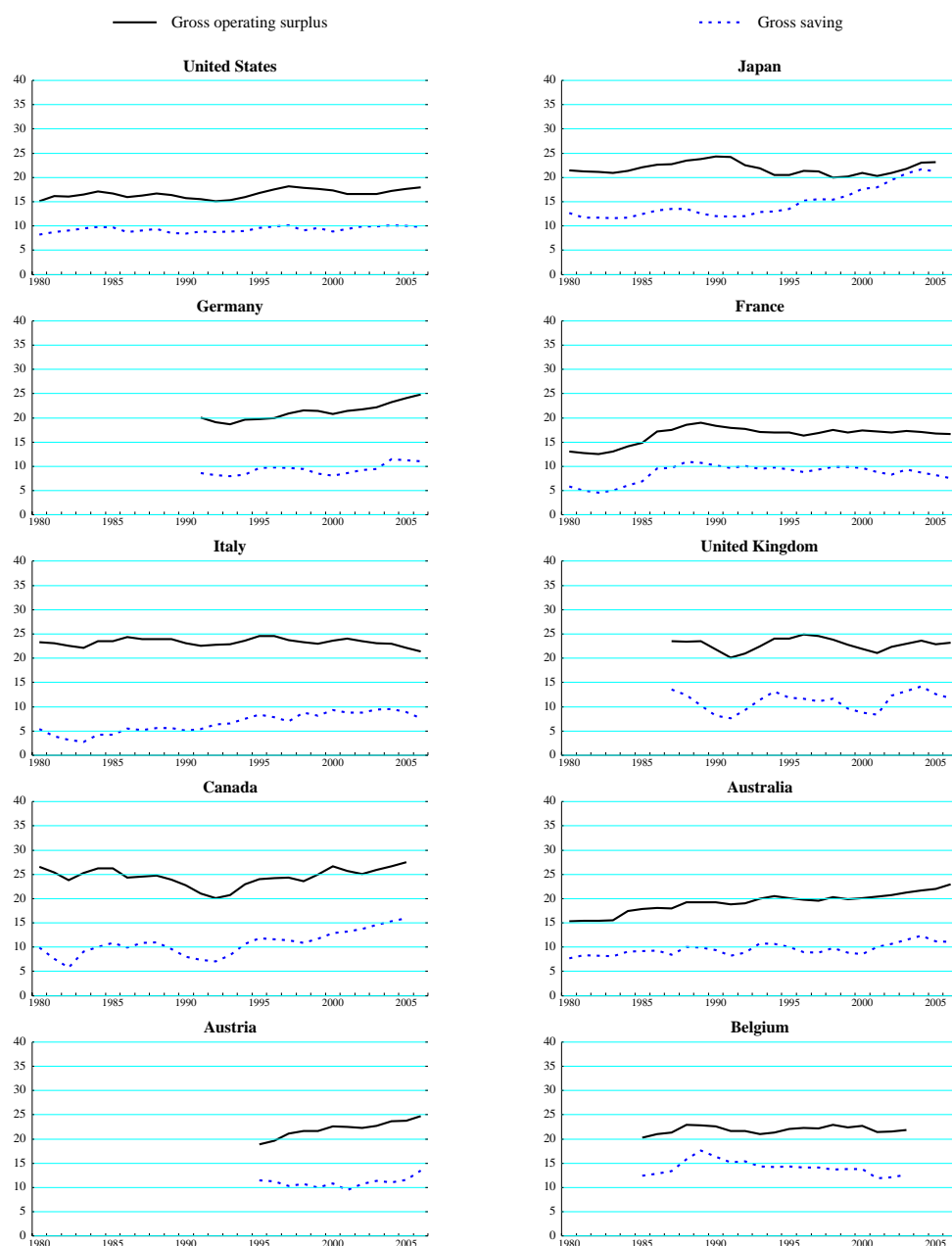
The role of relative prices and potential growth and depreciation rates on investment

45. Investment rates in various economies over the two decades up to 2000 have been affected by a number of factors. To begin with, there is the well-documented fall in the relative price of investment goods, which can be partly explained by the growing importance of computers, semiconductors and software in combination with their rapidly falling prices starting in the 1980s. If relative prices had remained unchanged, investment ratios (in nominal terms) would have shown an upward trend in most countries except in Germany (note that the period under review is short) and Japan where the downward trend would have been slightly less pronounced (Figure 15, where cumulative effects are plotted). The effect has been particularly large among Anglo-Saxon economies as well as in France.

32. See section below for more details on the methodology.

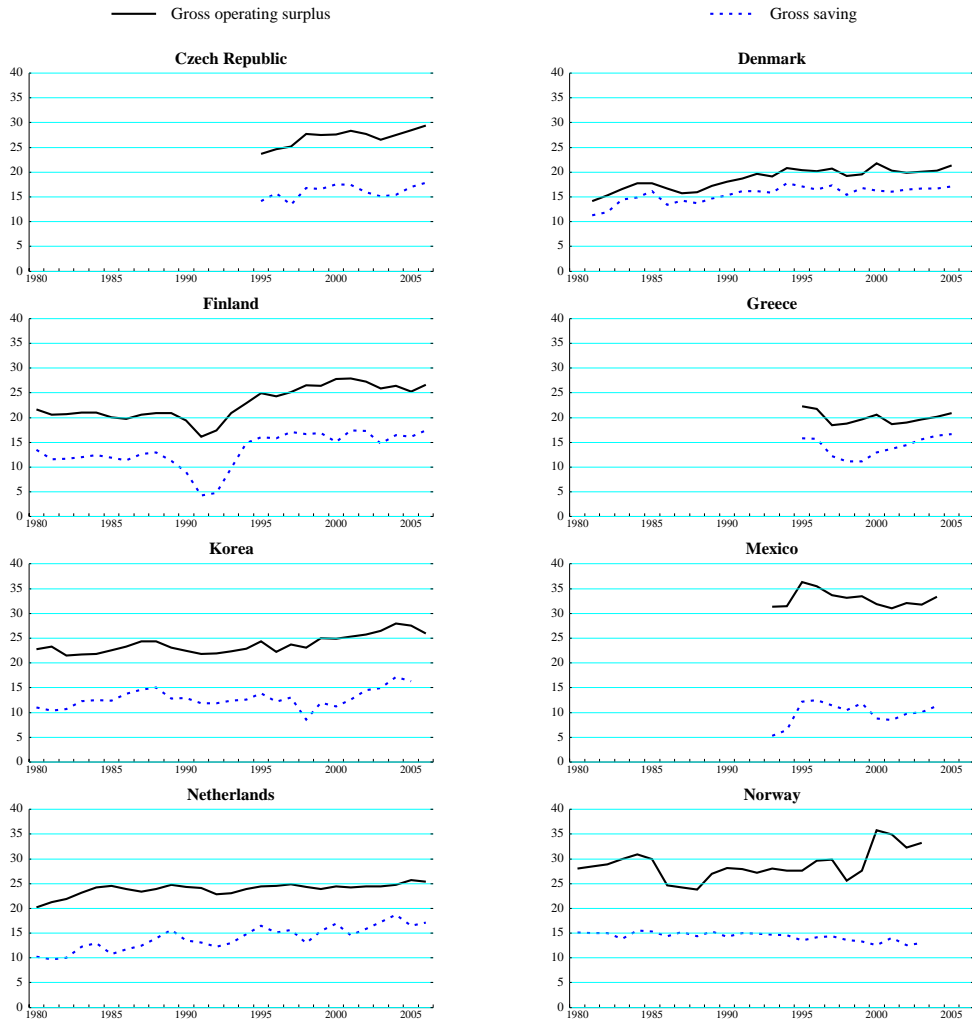
33. Due to limited data availability on corporate sector balance sheets, it is only possible to adjust long term trends in three of the seven major OECD economies.

Figure 12. Gross operating surplus and gross saving of corporations
Per cent of GDP



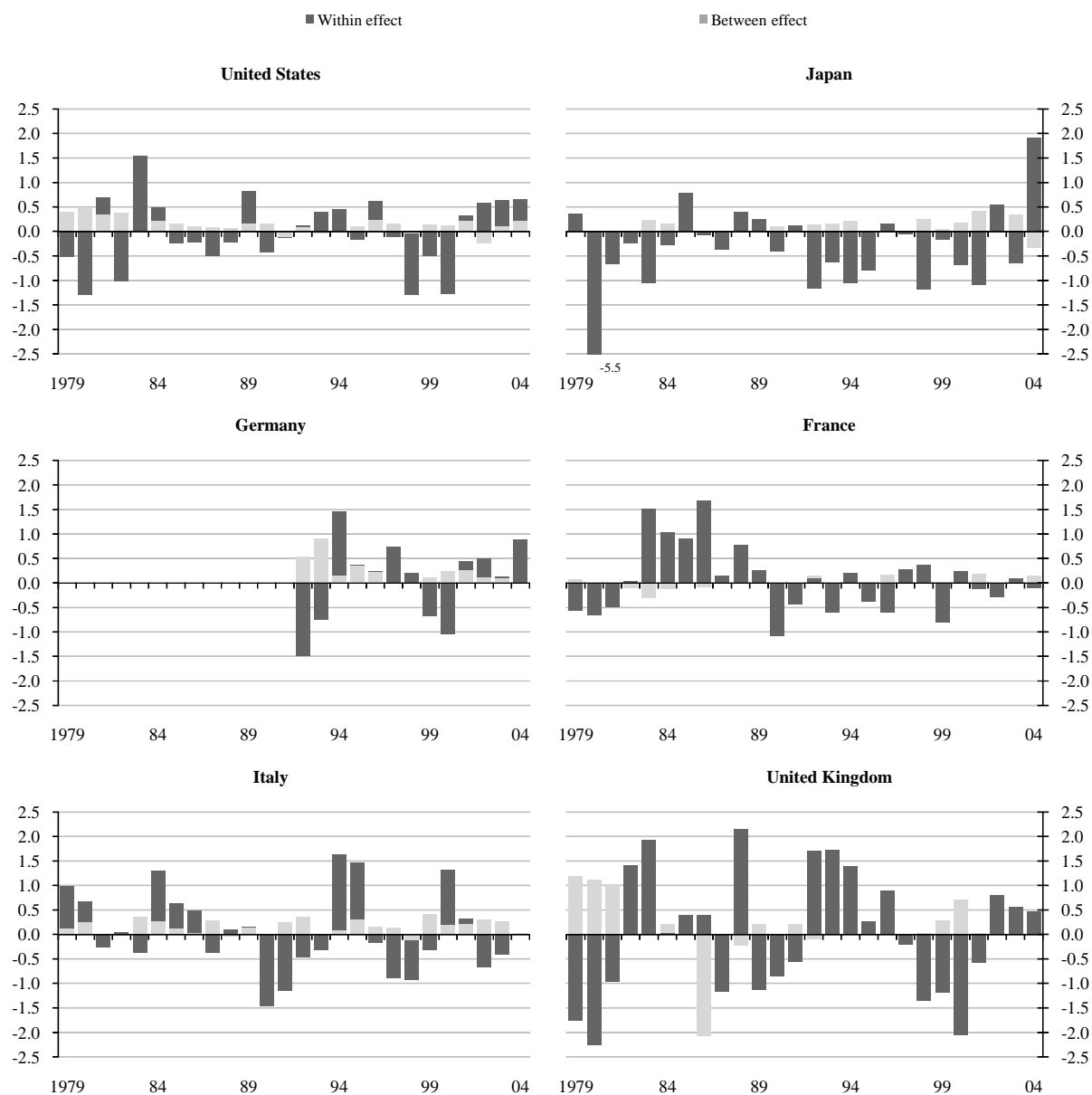
Source: OECD Annual National Accounts and national sources.

Figure 12. Gross operating surplus and gross saving of corporations (cont.)
Per cent of GDP



Source: OECD Annual National Accounts and national sources.

Figure 13. Contribution of within and between sector effects to the change in the gross operating surplus over time
 Percentage points of value-added



Source: EU-KLEMS and OECD calculations.

Figure 14. Gross saving of non-financial corporations and inflation gains
Per cent of GDP

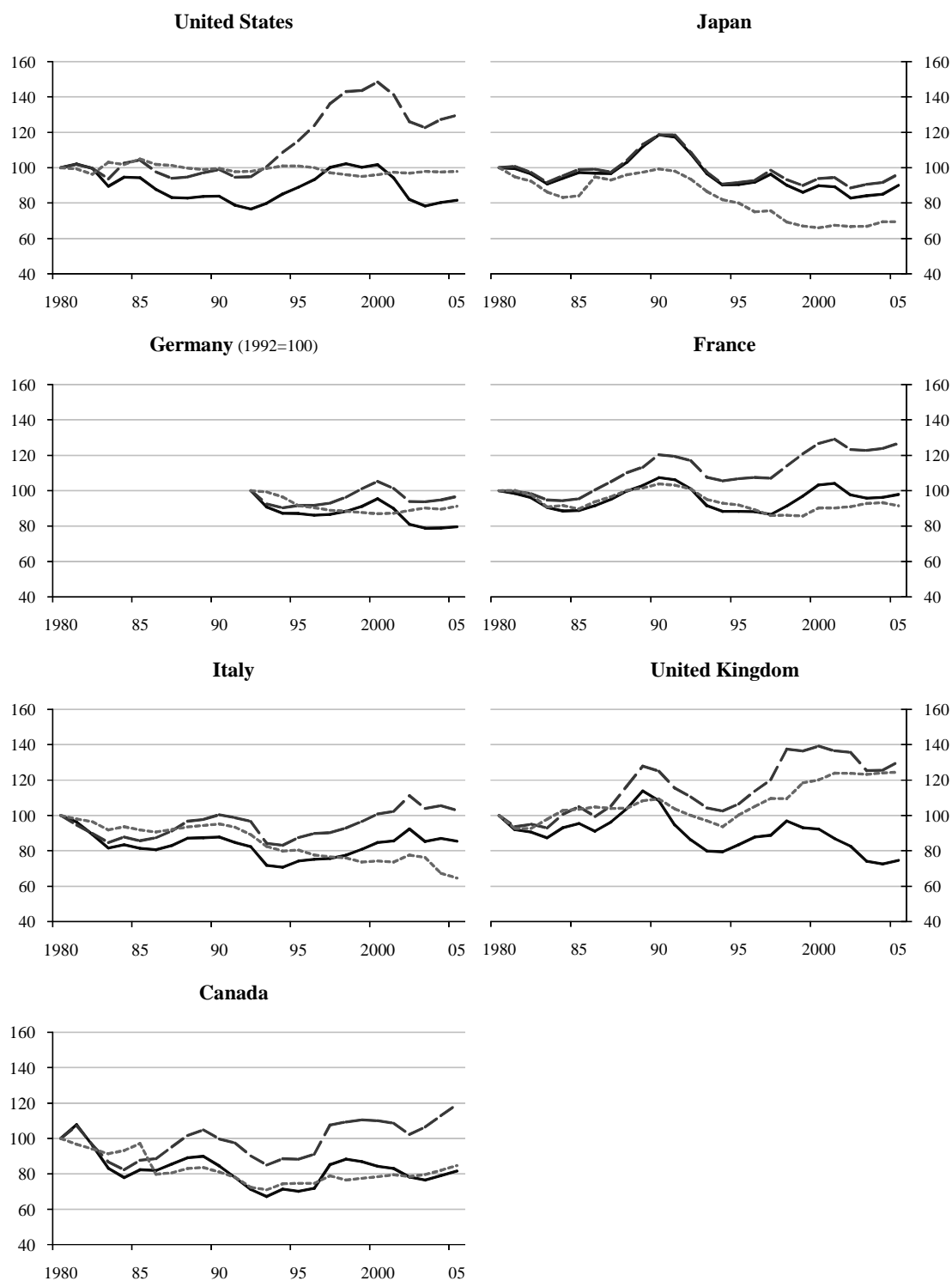


Note: Inflation gains are measured as net outstanding liabilities of corporations (loans and other accounts) multiplied by the change in the GDP deflator.
Source: OECD Annual National Accounts and OECD calculations.

Figure 15. The effect on investment rates of changes in relative prices and potential growth and depreciation rates

Index, 1980 = 100

- Gross investment-to-GDP ratio
- - - Gross investment-to-GDP ratio assuming constant relative prices
- · - · Effect of potential growth and depreciation



Source: OECD Economic Outlook 81 database and OECD calculations.

46. Investment rates during this period have also been driven by developments in potential growth and depreciation rates that, based on neoclassical growth theory,³⁴ would have affected the steady state investment rate. The effects of these two variables on investment rates are also shown in Figure 15, with the implicit assumption being that the capital-output ratio is held unchanged at its 1980 level. These calculations show, perhaps not surprisingly, that investment rates have generally been negatively affected by the combined changes in potential growth and depreciations rates. The effect over the whole period has been negligible in the United States and fairly small France and Canada. In Japan and Italy, these factors tended to hold down the investment rate, while the opposite was the case for the United Kingdom.

47. To get at the full effect of changes in potential growth and depreciation rates, developments in the capital-output ratio also have to be taken into account. Such calculations appear in Table 10, where decade averages are used for all the variables under consideration. Here much the same cross-country picture emerges although using decade averages damps the swings considerably, most notably for the United Kingdom.

Table 10. **The effect on business investment rates of changes in potential growth and depreciation rates**

	Potential growth plus depreciation			Implied changes in investment-output ratios between periods ¹	
	Averages over			Percentage points	
	1971-1980	1981-1990	1991-2000	1970s to 1980s	1980s to 1990s
United States	3.2 + 11.9	3.0 + 11.6	3.2 + 11.1	-0.2	-0.3
Japan	4.2 + 15.3	3.6 + 12.2	1.7 + 11.72	-3.5	-2.7
Germany	1.7 + 9.5
France	2.9 + 15.5	2.4 + 11.4	1.9 + 11.0	-2.9	-0.5
Italy	3.6 + 14.9	2.5 + 12.2	1.6 + 10.9	-3.0	-2.0
United Kingdom	1.9 + 11.2	2.1 + 9.2	2.5 + 9.2	-1.0	0.3
Canada	4.0 + 15.3	2.7 + 12.8	2.7 + 10.6	-2.2	-1.6

1. The investment-to-potential output ratio, labelled "i", is related to the capital output ratio, "k", in the steady states as follows: $i = [(g + \delta)/(1 + g)]k$: where "g" is potential growth; and "δ" is the rate of depreciation. This expression is used to calculate the change in "i". The potential capital-output ratio is proxied by decade averages.

Source: OECD calculations

48. Table 11, using calculations identical to those in Table 10, presents some ballpark estimates of the effects that the observed changes in potential growth and depreciation rates would have had on steady-state investment-to-GDP ratios over the period 2001 to 2005. The main findings are:

- For the first five economies listed in the Table 11, combinations of lower potential growth and/or depreciation rates are calculated to have either left unchanged (the United States) or lowered the

34. The investment-to-potential output ratio, labelled "i", is related to the capital-output ratio, "k" in the steady states as follows: $i = [(g + \delta)/(1 + g)]k$: where "g" is potential growth; and "δ" is the rate of depreciation. This expression can be used to calculate the change in "i". Investment requirements are also affected by depreciation rates. These could have been expected to rise in recent years due to the increase of the share of ICT in the economy. However, depreciation rate estimates can be imprecise and evolutions have been diverging across countries.

steady-state investment-to-GDP ratio in the first half of the 2000s compared with the previous decade. In the United Kingdom and Canada these factors together raised the steady state investment rate.

- These findings can be tentatively compared to the final column in Table 2 in the main text, which can be thought of as the part of the investment-to-GDP ratio not accounted for by relative price changes. The results suggest that changes in potential growth and depreciation rates are not the whole story. In the case of the United States, all of the change is left unexplained. In Japan and Italy, after accounting for relative price changes, the ratio should have seen pronounced drops; in point of fact, these ratios rose slightly. The opposite was the case for the United Kingdom. For the other economies, the outcomes are somewhat more consistent with developments in these two factors.

Table 11. **The effect on business investment rates of changes to potential growth and depreciation rates since 2000**

	Potential growth plus depreciation		Change in investment-potential output ratio between periods ¹
	Averages over		
	1991-2000	2001-2006	Percentage points
United States	3.2 + 11.1	2.7 + 11.5	0.0
Japan	1.7 + 11.7	1.4 + 10.0	-2.9
Germany	1.7 + 9.5	1.4 + 9.5	-0.3
France	2.0 + 11.0	2.0 + 11.0	-0.1
Italy	1.6 + 10.9	1.4 + 9.5	-1.7
United Kingdom	2.5 + 9.2	2.7 + 11.2	1.6
Canada	2.7 + 10.6	3.1 + 11.4	1.0

1. The investment-to-potential output ratio, labelled "i", is related to the capital-output ratio, "k", in the steady states as follows: $i = [(g + \delta)/(1 + g)] k$: where "g" is potential growth; the change in "i" and "δ" is the rate of depreciation. This expression is used to calculate

Source: OECD calculations

Sector decomposition of the gross operating surplus

Separating within and between effects

49. In a multi-sector economy, the change in the profit share, PROF (measured as the ratio of the gross operating surplus, GOS, to value added, VA) can be split into between-sector effects (changes due to changes in the composition of the economy) and within-sector effects (changes of the profit share within sectors).³⁵

50. The profit share is equivalent to the ratio of the sum of the gross operating surplus across sectors to the sum of value added. With $\omega_{i,t}$ the share of sector "i" in the total economy and $prof_{i,t}$ the profitability of sector i:

$$PROF_t = \frac{\sum_{i=1}^k GOS_{i,t}}{\sum_{i=1}^k VA_{i,t}} = \sum_{i=1}^k \omega_{i,t} * prof_{i,t}$$

35. A similar approach was used in de Serres *et al.* (2002) on the wage share.

51. The change in profit share over time can then be split into two components: the change in the weight of each sector in the economy multiplied by aggregate profits and the weighted sum of the change in the profit share of each sector. The first component measures between-sector effects; the second the impact of within-sector effects:

$$\Delta PROF_t = \sum_{i=1}^k prof_{i,t} * \Delta \omega_{i,t} + \sum_{i=1}^k \omega_{i,t-1} * \Delta prof_{i,t}$$

52. The data used here come from the international productivity database EU-KLEMS. The sectoral disaggregation is based on 24 sectors. For the United States, where two sets of data are available the NAICS data (which seems more in line with the gross operating surplus for the corporate sector used here) were used. Moreover, the decomposition between the gross operating surplus and taxes minus subsidies on production is missing, with the result that the sum of the two series has been used as a proxy for the gross operating surplus. EU-KLEMS data and information about the database can be found on <http://www.euklems.net/>. The analysis here is limited to the six major OECD countries (data are not available for Canada).

53. The gross operating surplus measure used here is not strictly comparable to the one presented in the previous section which was related to the corporate sector only. As a benchmark, the overall profile of both the aggregate profit share and the financial/non financial profit share are quite similar to those from the national accounts, even if there are some differences in the levels. The gross operating surplus used here includes in particular mixed income. This may not be an issue at the aggregate level since the share of unincorporated enterprises in total business saving has been very stable over the past 15 years but it may be more problematic at the sector level. However, it is not possible to correct for this.

54. Another caveat associated with these data is that the output of renting activity of the real estate industry includes imputed rents for owner-occupied housing. This makes international comparisons difficult as methods by which rents are imputed vary.

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