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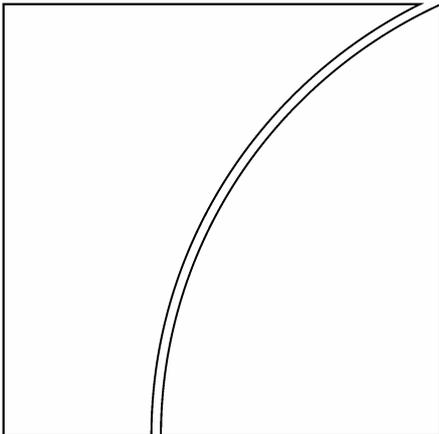
Recent fiscal policy in selected industrial countries

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Abstract

This paper summarises fiscal developments over the past 10 years in 16 industrial countries, based on OECD data and projections. Several countries that had substantial fiscal deficits early in the 1990s turned to surpluses by the year 2000, with some countries improving their fiscal balances by 5% of GDP or more, even abstracting from the effects of strong economic growth. But in many countries - especially the largest economies - this strong performance had given way to the reappearance of large fiscal deficits by 2003. Based on current fiscal legislation, the OECD expects to see no clear improvement in cyclically adjusted balances by 2005. All countries' fiscal positions in 2003 were worse than had been expected in late 2000, but after abstracting from the effects of a surprisingly weak economy, the negative surprise was largest for the United States, followed by the United Kingdom and Ireland. Sustainability calculations suggest that preventing rising net debt ratios requires a fiscal adjustment of some 7% of GDP in Japan, 2½ to 3% of GDP in the United States, 1½% of GDP in the United Kingdom, and about 1% of GDP in France and Germany. Italy's fiscal position is strong enough to stabilise the debt ratio at its current high level, but not strong enough to bring the debt ratio down appreciably.

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Introduction¹

During the past 10 years, there have been striking changes in fiscal policy in the industrial countries. Several countries that had substantial fiscal deficits early in the 1990s turned to sizable surpluses by the year 2000, with some countries improving their fiscal balances by 5% of GDP or more, even abstracting from the effects of strong economic growth. But in many countries - especially the largest economies - this strong performance has given way to the reappearance of large fiscal deficits during the past three years.

This paper summarises these fiscal developments in sixteen industrial countries - the G7 countries plus nine smaller countries - using OECD data and projections. Although such analyses have been done before (for example, OECD (2002) or ECB(2004)), this paper differs in two respects from earlier studies. First, it is more up to date, covering data up to 2003 and projections up to 2005. Second, this paper is more detailed, and some of the calculations in Sections 2 to 4 have not been made before in such a cross-country analysis.

Section 1 summarises the basic facts about fiscal policy in the countries under study. It summarises fiscal positions in 2003 and presents the OECD's projections for 2005, documenting that cyclically adjusted deficits are largest for the largest economies - Japan, the United States, France, the United Kingdom, and Germany - and that these cyclically adjusted deficits are expected to be little changed up to 2005. Section 1 also documents the changes that have occurred since 1993 - both the fiscal improvement up to 2000 and the subsequent deterioration between 2000 and 2003 - and decomposes the sources of change as stemming from cyclical factors, interest payments, cyclically adjusted spending changes, and cyclically adjusted revenue changes. The fiscal deterioration since 2000 is shown to have been largest for the United States and the United Kingdom among the G7 countries. Finally, Section 1 summarises some recent evidence on the influence of swings in asset prices on these fiscal outcomes.

The remainder of the paper examines a variety of topics intended to provide further understanding of these basic results. Section 2 compares fiscal balances in 2003 not relative to their levels in 2000, but relative to projections of 2003 balances that were made in late 2000. This comparison (after adjusting for the effects of unexpectedly slow GDP growth) provides a more natural measure of the extent to which new policy initiatives were responsible for the fiscal deterioration; such policy initiatives appear to have been especially important in the United States, the United Kingdom and Ireland among the countries under study. Section 3 discusses the magnitude and reliability of estimated cyclical influences on fiscal balances and concludes that, while cyclical effects are inherently imprecise, this imprecision is unlikely to be large enough to overturn the qualitative results discussed in this paper. Finally, Section 4 assesses the sustainability of current fiscal positions and finds that, to prevent debt ratios from increasing further, substantial fiscal adjustments are required in Japan and the United States, and more modest adjustments are required in the United Kingdom, Germany and France. The fiscal position in Italy is sufficient to maintain that country's existing high debt ratio; unlike Belgium, however, Italy is not positioned to bring its debt ratio down substantially. Section 5 concludes.

Because the projections extend only up to 2005, this paper is by necessity incomplete. A more complete understanding of fiscal sustainability requires looking further into the future - in particular, taking account of expected demographic influences on government finances.

¹ The views expressed are those of the author and do not necessarily reflect the views of the Bank for International Settlements or the Board of Governors of the Federal Reserve System. I would like to thank Palle Andersen, Claudio Borio, Guy Debelle, Nathalie Girouard and Thomas Laubach for helpful comments and discussions, Robert Price for arranging OECD assistance with numerous data questions, and Les Skoczylas for research assistance.

1. Basic results

1.1 Fiscal indicators

I begin with some discussion of the various fiscal indicators that will be covered. (All data refer to the *general government* sector, which consolidates the central government with sub-national governments and social security systems, and refer to calendar-year averages.) The overall *fiscal balance* includes all receipts and payments other than transactions in financial assets. This is the broadest fiscal measure that will be examined and is the “headline” indicator of fiscal surplus or deficit. The *cyclically adjusted* balance estimates what the fiscal balance would be if the economy were operating at potential output. Because stronger economic activity generates higher tax revenues and, to a lesser degree, leads to reductions in some types of spending such as on unemployment benefits, analysts commonly look at the cyclically adjusted budget balance to abstract from these influences of transitory output movements; such exercises obviously have much in common with forecasting how the fiscal position will change as the economy moves towards potential output in the future. Most of the analysis in this paper will focus on cyclically adjusted balances.

Two adjustments to the overall balance will sometimes be employed (either of which, of course, may also include cyclical adjustments). First, the *primary* balance excludes net interest payments and will be emphasised in the analysis of sustainability. Second, the *current* balance excludes capital outlays net of depreciation. This measure corresponds to the “golden rule” that borrowing be limited to government investment. This is arguably the more relevant indicator of fiscal sustainability, as investment spending that leads to the accumulation of capital assets provides benefits in the future, just as the accumulation of financial assets does (see, for example, Blanchard and Giavazzi (2003)). Counterarguments can be made as well. For example, some types of government investment may have a favourable *social* return but may generate very low *financial* return to the government. Furthermore, the distinction between current and capital spending is not always clear-cut and therefore may be subject to manipulation. As a practical matter, the concern that government investment is erratic and therefore complicates analysis of fiscal positions in a given year does not seem too problematic in the countries under study.

Any adverse effects of unsustainable fiscal policies on economic outcomes are likely to depend more on the stock of government debt than on annual deficits (Engen and Hubbard (2004)). I will present data on both gross and net government debt. Gross debt includes all liabilities of the consolidated general government sector, while net debt subtracts the general government’s financial assets. Ideally, for an assessment of long-term fiscal solvency, one would most like to examine a broad measure of net worth that includes non-financial assets as well as financial assets and also includes anticipated future liabilities (such as for pensions) and some provision for contingent liabilities. With some elements of this broad net worth calculation missing, one can construct scenarios where either gross or net debt is the more meaningful indicator for cross-country comparisons. But unless the omitted items are understood to be very different in different countries (for example because of different future pension liabilities), net debt probably provides the clearer picture.² If the government’s financial assets are of poor quality, however, then unless the values are appropriately discounted their use can be misleading. In addition, one practical argument against using net debt is that data on financial assets have historically been less complete and comparable across countries; indeed, financial assets still are not published for Ireland or Portugal. In this paper, I present both sets of figures and will generally emphasise the net debt ratios.

² Suppose country A has much larger future pension liabilities than does country B, and country A has accumulated financial assets in preparation to meet those liabilities; then the exclusion of those future liabilities implies that country A’s net debt position will appear misleadingly sanguine compared with country B and gross debt may be more illuminating. To some extent, both Finland’s and Japan’s substantial pension assets and unusually large future liabilities may be in this category. By contrast, if the two countries have similar future pension liabilities, but only country A has accumulated substantial assets in preparation, one would want to take those assets into account by focusing on net debt.

1.2 Graphical overview

For a first look at the data, Graph 1 displays fiscal balances as a share of GDP for the G7 and nine smaller industrial countries. For most of the G7 countries, fiscal balances began to turn up sometime around 1993, and by 2000 they had improved substantially, in many cases moving into surplus. Japan, where fiscal balances deteriorated during the 1990s, is the striking exception to this pattern. For most of these countries, however, this situation has changed markedly since 2000, as fiscal balances have turned back into sizable deficit. Here, Canada is the exception, maintaining a surplus after deteriorating only a little after 2000. The non-G7 countries shown in Graph 1 also saw a substantial fiscal improvement during the 1990s. Unlike the G7 case, however, these other countries generally did not see their fiscal conditions deteriorate greatly after 2000. With a few exceptions (including Portugal and the Netherlands), these other countries stood in 2003 with fiscal positions at least close to balance - and with a large surplus in the case of Finland.

As noted, some of these movements in fiscal budget positions reflect changes in economic activity. To abstract from these influences, Graph 2 presents the OECD's estimates of cyclically adjusted fiscal balances. (The graph also excludes the effects of revenues from auctioning the mobile telephone spectrum; these UMTS revenues temporarily boosted several countries' fiscal positions around 2000.) These data do look somewhat smoother than the unadjusted balances; in particular, the fiscal positions of several countries in 2000 look less positive adjusting for the business cycle and UMTS revenues. Nevertheless, the broad patterns from Graph 1 remain unchanged. Many countries' fiscal positions have deteriorated notably since 2000, and even cyclically adjusted balances remain substantially in deficit for several of the G7 countries.³

1.3 Fiscal situation in 2003 and projections for 2005

Table 1 presents a more complete range of basic fiscal indicators for 2003 as well as OECD forecasts for 2005. Both the G7 countries and the smaller industrial countries are listed in ascending order of their cyclically adjusted fiscal balance.

As was evident from the graphs, the cyclically adjusted deficits for Japan, the United States, France, the United Kingdom and Germany all exceeded 2% of GDP in 2003 - larger than for any of the non-G7 countries in the sample. As noted, one may care more about balance in the *current* budget that excludes net capital outlays. For most of the countries, however, the current balance in 2003 is similar to the total fiscal balance. The most important exceptions are Japan, Ireland and Spain, where public investment net of depreciation is measured as being near 2½ % of GDP. As for the cyclically adjusted *primary* balance, one can see that the exclusion of net interest payments makes the largest difference for the high-debt countries Italy and Belgium, where net interest amounts to around 5% of GDP.

The OECD forecasts for 2005 confirm the impression given by the cyclically adjusted balances - there is little indication that the existing deficits are temporary.⁴ These forecasts are based on output gaps that are expected to narrow appreciably for the United States and the United Kingdom, and to turn positive for Japan. However, for many of the countries in continental Europe, including Germany, France, Italy and the Netherlands, GDP is expected to remain well below potential in 2005. The forecasts are also based on the governments' proposed legislation; if countries had already enacted policy changes that would lead to smaller deficits in the future, these would be reflected in the estimates for 2005. This has clearly not been the case. As can be seen, fiscal deficits for the G7

³ The cyclical nature of countries' budgets depends on both the size of output fluctuations and the sensitivity of the budget to those fluctuations. As discussed in van den Noord (2000), countries' cyclical sensitivity depends on a number of factors, the most important being the size of the government sector. The OECD countries that van den Noord estimates to be most sensitive to the business cycle are Denmark and Sweden (which have the largest general government in the OECD), followed by the Netherlands, Belgium, and Finland. The OECD countries least sensitive to the business cycle are the United States and Japan (which have the smallest governments).

⁴ The OECD also provides a "medium-term reference scenario" that shows an estimate of overall fiscal balances in 2009. These, too, are little different from the 2003 cyclically adjusted balances for all of the countries studied. (There is essentially no difference between actual and cyclically adjusted balances in the 2009 estimate because output gaps are assumed to be near zero by then.) For many countries, however, this estimate for 2009 is generated such as to hold cyclically adjusted balances roughly unchanged at 2005 projected levels. Thus, little information about future fiscal trends is provided, and I do not report them in Table 1.

countries (other than Canada) are expected to be as large, or only marginally smaller, than in 2003. For Italy, whose official budgets have benefited from some one-time factors, the budget is projected to deteriorate by about 1% of GDP between 2003 and 2005. Overall, then, there is no good reason to believe that the 2003 figures are providing an overly pessimistic picture of the budget situations.

Turning to the debt statistics, the countries differ enormously in their gross and net debt ratios. Japan has by far the highest gross debt, at more than 150% of GDP; Italy and Belgium also have gross debt ratios that exceed 100% of GDP. But Japan's net debt is considerably lower than its gross debt because it holds substantial pension fund assets; both Italy and Belgium, with net debt just below 100%, have higher ratios than does Japan. Outside these three high-debt countries, most countries in the sample have gross debt ratios between 50% and 70% of GDP, and net debt between 30% to 50% of GDP. Australia and Sweden stand out as having net debt near zero, however, and Finland has pension fund assets that substantially exceed its gross debt. (I also present gross debt figures according to the Maastricht definitions; these sometimes differ from the standard ESA95/SNA93 definitions by as much as 10% of GDP, but they do not qualitatively change the debt picture for any country in our sample.)⁵ The prospects for these debt ratios to change in the future in light of current fiscal policies - that is, views of the sustainability of these countries' fiscal policies - will be discussed in Section 4 below.

1.4 Changes in fiscal situation since 1993

Table 2 examines how these fiscal balances have changed since 1993. Focusing first on the period to 2000 (the top panel), the overall fiscal balance improved for every country other than Japan, where the deteriorating economic situation led to fiscal expansions intended to stimulate GDP. Interestingly, the OECD's current assessment is that Japanese output fell only a little further below potential between 1993 and 2000, so that very little of the fiscal deterioration over this period can be viewed as cyclical. Outside Japan, the increase in fiscal balances varied considerably. At one end, fiscal balances in Germany and Austria improved by only around 2% of GDP during these years (abstracting from the mobile telephone spectrum receipts that temporarily boosted fiscal balances in 2000). At the other end, Sweden and Finland each saw enormous increases in the fiscal balance of around 15% of GDP.

Some of these improvements reflect cyclical effects: for each of the countries under study other than Japan, the OECD estimates GDP to have been below potential in 1993 and above potential in 2000. For the G7 countries, this improvement in GDP (indeed, to levels the OECD believes to have been unsustainable) contributed between 1% and 3% of GDP to the fiscal balance over this period.

But for most of the G7 countries, the cyclically adjusted balance also improved substantially during the 1990s. Canada's improvement totalled some 9% of GDP, while improvements for the United Kingdom, Italy and the United States all exceeded 5% of GDP. Along with Japan, Germany was an exception, with a cyclically adjusted balance that improved by less than 1% of GDP between 1993 and 2000. For some of the non-G7 countries - especially Finland and Sweden - the cyclical contributions were much larger, but most of these countries also saw notable improvements in their cyclically adjusted budget positions. Sweden's improvement was almost 10% of GDP, and Finland, Belgium, Australia and Spain all improved their cyclically adjusted positions during the 1990s by 4 to 5% of GDP.

To better understand the sources of these improvements, Table 2 separates the rise in the cyclically adjusted balance into three components: the reduction in net interest payments, reductions in other cyclically adjusted categories of expenditure, and increases in cyclically adjusted receipts. (Note that lower spending is recorded as a positive number in the table because it contributes to a larger fiscal balance.) A few countries (especially Italy, but also Portugal, Belgium and Ireland) benefited from a very large reduction in net interest payments that reflected sharp declines in interest rates; countries with debt levels that were high, but not rising, were the main beneficiaries of lower interest rates. Elsewhere, the split among spending restraint and higher receipts in generating the improvement in cyclically adjusted balances varied notably. In the United States, there was some spending restraint but more important was a rise in cyclically adjusted receipts and, in Germany, the small improvement

⁵ The most important difference between the Maastricht debt definition and the ESA95/SNA93 definition is the valuation methodology. The Maastricht definition employs nominal values of debt, while the ESA95/SNA93 definition measures debt at market value and includes accrued interest. See OECD (2004a).

occurred entirely through higher receipts. In the United Kingdom, spending restraint and higher receipts each contributed about 3% of GDP towards higher cyclically adjusted balances, while in Canada, the improvement came mainly through a very large reduction in spending. Among the non-G7 countries, spending restraint was especially important, with six of the nine countries making spending adjustments of at least 3% of GDP over this period; the adjustments for Sweden and Spain exceeded 5% of GDP.

Just as fiscal balances improved in almost all of these countries during the 1990s, so did they deteriorate after 2000. Of course, for some countries the deterioration was exaggerated by the one-off nature of the UMTS receipts. And, just as the cyclical improvement during the 1990s contributed to stronger fiscal positions, so did the cyclical downturn after 2000 contribute to the deterioration. For the G7 countries other than Japan, about 1 to 2 percentage points of the recent deterioration is classified as cyclical. For some of the other industrial countries - especially the Netherlands - the cyclical slowdown generated a larger effect on the fiscal position.

Both the magnitude and the composition of changes in the cyclically adjusted balance from 2000 to 2003 have also varied greatly across the countries. Among the G7, the deterioration was largest for the United States and the United Kingdom. In the United States, the cyclically adjusted balance deteriorated by more than 5% of GDP over the past three years; this deterioration took the form of both a substantial reduction in cyclically adjusted tax revenues and higher non-cyclical, non-interest expenditures, with the former about twice as large as the latter. For the United Kingdom, the cyclically adjusted balance fell by 3.7% of GDP, driven by higher spending. The non-cyclical fiscal deteriorations for both France and Germany were modest at around 1 to 1½% of GDP. Canada's cyclically adjusted balance has also deteriorated by about 1% of GDP since 2000, though, as noted, it remained in surplus in 2003. Italy, which was still running a deficit in 2000 despite receiving transitory UMTS revenues in that year, held its cyclically adjusted balance more or less constant after 2000, thanks, in part, to a series of one-off revenue measures (including tax amnesties and asset sales and securitizations). In no case did higher interest payments contribute significantly to the fiscal deterioration; instead, continuing declines in interest rates led to further declines in the share of net interest to GDP for a number of countries.

Unlike most of the G7 countries, many of the other industrial countries underwent a further improvement in their non-cyclical fiscal positions between 2000 and 2003. Belgium, Portugal, the Netherlands, Spain and Austria all recorded higher cyclically adjusted balances of about 2 to 3% of GDP; this consolidation was mixed between spending restraint and higher cyclically adjusted tax receipts. In Ireland, Finland and Sweden, cyclically adjusted balances declined after 2000, though, as with Canada, from substantial surpluses by 2000.

Part of the movements in cyclically adjusted revenues since 1993 were related to transitory movements in asset prices, especially the sharp rise in equity prices into 2000 and the decline thereafter. As discussed in Girouard and Price (2004), asset prices affect government finances in many ways including through receipts on property taxes and inheritance taxes, but taxes on capital gains are by far the most important. Girouard and Price measured the transitory movement in capital gains revenues by taking the difference between actual revenues and a roughly measured trend of these revenues.⁶ Unfortunately, sufficient data on capital gains revenues to allow for construction of a trend were only available for the United States, France and the United Kingdom. Table 3 shows the relevant figures for these countries (and also includes a zero for Germany, which does not tax capital gains).⁷ For the United States, a transitory rise in capital gains revenues into 2000 is estimated to have contributed 0.7% of GDP to the rise in receipts during the 1990s, and contributed a similar amount to

⁶ Because capital gains revenues are positively correlated with the business cycle, the regular cyclical adjustment procedures might capture part of these transitory capital gains revenues. However, capital gains revenues are a small share of overall revenues, implying that any excess cyclical adjustment is likely to be very small.

⁷ Girouard and Price (2004) generated the trend for capital gains revenues using a Hodrick-Prescott filter. Data were presented only up to 2002 (and for France, the data for 2001 and 2002 are the authors' estimates); for both France and the United States, I assumed capital gains revenues in 2003 to be unchanged from 2002 levels. Capital gains data for Italy suggest that the swing in equity prices might have contributed roughly 0.4% of GDP to both the improvement from 1993-2000 and the subsequent deterioration; because a sufficient history was not available to allow the authors to generate trend estimates, however, these figures are not included in the table. I am grateful to Nathalie Girouard for providing these data.

the decline in receipts thereafter. For France and the United Kingdom, asset prices had a much smaller effect on revenues.

2. Fiscal positions compared with earlier projections

Fiscal positions in 2003 were not only much less favourable than in 2000, they also were much less favourable than had earlier been projected. Some of the changes in the cyclically adjusted fiscal balance between 2000 and 2003, which we saw in Table 2, may have been predicted based on policy changes that had already been legislated or other expected economic factors. Focusing on the unexpected change in the fiscal balance provides a closer approximation to new policy initiatives that were undertaken after the earlier projection was made. Such calculations have been made for the US federal budget (see Kitchen (2004), for example) but are less common for the other countries in the sample.

Table 4 compares current estimates of fiscal balances in 2003 with projections for these balances made in the OECD's December 2000 *Economic Outlook*.⁸ For the United States and the major European economies, projections made in 2000 generally called for fiscal balances that started in surplus to remain in surplus; Japan's fiscal deficit was projected to improve. Thus, the actual 2003 fiscal balances for every country in this study were lower than expected, in many cases substantially so.

Of course, slower-than-expected real GDP growth contributed to the weaker fiscal positions. According to my calculations, the contribution of such growth surprises was largest for the Netherlands, Finland, Belgium and Germany - countries for which GDP growth was especially slow relative to earlier expectations and fiscal balances are relatively sensitive to GDP.⁹ As an indication of the degree to which the negative GDP surprises are now believed to have been transitory or permanent, we can decompose the slower-than-expected GDP performances into more-negative output gaps and downward revisions to estimates of potential output. For several countries, the budgetary impact of downward revisions to potential output was substantial. In particular, for the Netherlands, Finland and Ireland, budget positions in 2003 were more than 2% of GDP lower than earlier expected based on revisions to potential GDP - that is, based on changes in GDP that are now believed to be permanent.

Focusing on the surprise to 2003 fiscal positions that did *not* stem from unexpectedly slow GDP growth - shown in bold, and calculated as the difference between the overall surprise and the part stemming from unexpected GDP growth - the degree of deterioration varied considerably across countries. The weakening was most substantial for the United States, which had a non-GDP-related deterioration in its fiscal balance of more than 6% of GDP. The United Kingdom and Ireland also had substantial deteriorations of more than 4% of GDP; the non-GDP-related deteriorations for France and Japan (about 2%) were notable as well. But in Germany, Italy, Canada and several of the non-G7 countries, weaker-than-expected GDP growth could account for essentially all of the downward revision to 2003 fiscal balances. And for Belgium and the Netherlands, the non-GDP-based change

⁸ The December 2000 Economic Outlook presented detailed projections up to 2002, and also included a "medium-term reference scenario" that extended the projection for a few key variables (including the fiscal balance) up to 2006. As the OECD did not present their estimates for each year in the medium-term reference scenario - they only presented the 2006 end point - I generated estimates of the projections for 2003 by interpolation. Specifically, I assumed that the fiscal balance was projected to change linearly between 2002 and 2006, and that real GDP was projected to grow at a steady rate during that period. In addition, because the OECD stated that the output gaps were "broadly eliminated" by 2006, I assumed that the output gaps were projected to move linearly to zero between 2002 and 2006. As the medium-term scenario is generally described to move smoothly, such interpolation should be reasonable.

⁹ The fiscal implications of changes to the GDP growth assumption are measured using the same procedures and elasticities that the OECD uses in constructing cyclically adjusted fiscal balances (van den Noord (2000)). Specifically, I compare real GDP growth from 1999 and 2003 as currently estimated with the OECD's projection made in December 2000; call this 2003 output ratio R . (Because historical GDP data may have been revised in a way that did not affect fiscal data, I ignored any revisions to GDP in 1999 or earlier.) Using the OECD's fiscal elasticities (ϵ), I define the revision to the various revenue and expenditure categories (z) from unexpected GDP growth as $z^* = zR^\epsilon$. The same procedure is used to generate the effect of revisions to potential output, and the difference between these two estimates provides the effect of changes in the output gap.

was positive, indicating that the total surprise in the 2003 fiscal balance was considerably smaller than would have been predicted given weaker-than-expected GDP growth.

This non-GDP-related portion of the surprise to the 2003 balance could in principle stem from a number of factors other than discretionary changes in policy. It certainly reflects, in part, a misjudgment of capital gains revenues deriving from unexpected declines in asset prices, and possibly also from misjudgments about the revenue effects of a given path of asset prices.¹⁰ It could also reflect such factors as the budgetary impact of unexpected medical costs, unexpected changes in interest costs, or inaccuracies in the OECD's estimates of the effect of changes in GDP on the fiscal balance.

Some of these factors other than discretionary policy might be reflected in the budget data for 2000 that were released after the December 2000 projection was made. To the extent that revisions to the 2000 budgets also affected budgets going forward - which is possible but by no means certain - then ignoring the revisions and focusing on the remainder - the column in Table 4 labelled "other" - would provide a step in the direction of abstracting from these non-discretionary factors and toward a discretionary policy indicator.¹¹ It also moves the exercise a step closer to that of Table 2, which also is based on revised budget figures for 2000.

In the event, for only a few countries (mainly Finland, Japan and Portugal) were the non-GDP-related errors in 2000 large enough to paint a different picture of 2003 forecast errors. Whether or not one excludes these errors, the United States, the United Kingdom and Ireland, and to a lesser extent France and Japan, all stand out as countries where fiscal balances deteriorated unexpectedly after 2000. Of course, this is largely the same group of countries identified in Table 2 whose cyclically adjusted balances turned notably negative between 2000 and 2003. By either measure, then, fiscal policy in this group of countries has deteriorated markedly since 2000.

3. Uncertainty about cyclical effects

As noted above, fiscal budget positions depend importantly on the strength of overall economic activity; as a result, analysts commonly look at the cyclically adjusted balance, which estimates what the fiscal position would be if the economy were operating at potential output. But estimates of potential output are uncertain and sometimes revised substantially, and the sensitivity of fiscal positions to changes in GDP is uncertain as well. One should therefore not take any particular estimates of cyclically adjusted budget positions uncritically. In particular, one may wonder whether current fiscal deficits may be more cyclical than indicated by the OECD estimates and would therefore be expected to improve more substantially as economic growth picks up and output gaps narrow.

Graph 3 provides a check on the OECD's estimated cyclical effects by employing data from the IMF, which also produces estimates of potential output and cyclically adjusted fiscal balances for each of the countries under study. The graph compares the OECD's cyclical adjustments (that is, the difference between cyclically adjusted and actual balances) with two alternatives: the IMF's cyclical adjustments, and a hybrid that combines the IMF's estimates of potential output with the OECD's

¹⁰ For the United States, Kitchen (2004) estimates that unexpected movements in stock market valuations reduced federal personal tax receipts in FY 2003, relative to CBO projections made in January 2000, by about 1.3% of taxable personal income, or about 1% of GDP.

¹¹ The non-GDP error to 2000 balances is measured as the revision to the 2000 fiscal balance, adjusted for the revision that would have been expected given the error in projecting GDP growth in 2000 (based on the same methodology as described in footnote 7). This adjustment is made because the effect of GDP revisions was already taken into account in the column labelled "total non-GDP-based changes". This revision to the 2000 balance must predominately reflect factors other than policy changes, for any policy changes made in the last few months of 2000 (after the OECD forecast had closed) probably would not have gone into effect quickly enough to much affect that year's fiscal balances. It is hard to know whether such errors in 2000 would be expected to persist in future years, but in some cases this seems a reasonable judgment; for example, the errors might reflect revised data indicating that the tax base is lower than previously believed. Thus, subtracting off the (non-GDP-related) revision to the 2000 fiscal balance generates a revision to the 2003 balance that might be somewhat closer to representing changes in policy.

elasticities that relate fiscal balances to GDP.¹² (The first alternative can be understood as employing the IMF's estimates of both potential output and elasticities.)

As can be seen, for most countries the alternative estimates of cyclical adjustments are quite similar to those estimated by the OECD. Differences for the G7 countries are within about one percentage point of GDP. The largest discrepancies among the G7 are for the United States and France, where the IMF judges both the improvement over the 1990s and the deterioration since 2000 to be about one percentage point more cyclical than does the OECD; these differences stem mainly from different budget elasticities rather than different estimates of potential GDP. For the smaller countries, there were important differences for Finland and Sweden, both of which had huge improvements in their fiscal balances between 1993 and 2000; for both countries, the IMF-based estimates measured the fiscal improvement as being somewhat less of a cyclical rebound than did the OECD estimates. As for the cyclical budget positions in 2003, the largest difference is for Ireland, where GDP is judged by the OECD to be above potential output and by the IMF to be below potential output.

Are there alternative estimates of cyclical budget positions that are both plausible and notably different from those of both the OECD and the IMF? To be sure, the IMF and OECD use similar procedures for generating output gaps, and alternative procedures could generate quite different estimates. One cautionary note comes from recognising that revisions to output gaps are sometimes substantial (Table 5). For each of the OECD's December projections from 1995 to the present, I tabulated the output gap estimates for each year from 1990 to 2000; the table reports, for each country, the typical range of revisions (positive or negative) over this period.¹³ For most of the G7 countries, output gaps have typically been revised by between 1 and 2 percentage points (in either direction); the revisions have averaged about 2½ percentage points for Japan and more than 3 percentage points for a few of the non-G7 industrial countries. Using the OECD's elasticities, Table 5 also reports how much larger the output gaps would have to be in order for the entire 2003 fiscal deficit to be classified as cyclical. For the G7 countries with the largest cyclically adjusted deficits (Japan, the United States and France), output gaps would have to be revised sharply downwards to fully account for these countries' fiscal deficits - far out of line with the typical range of historical revisions. For Germany, Italy and the United Kingdom, required revisions are not quite as large but still out of line with the historical record. For Ireland and Portugal (the non-G7 countries running the largest cyclically adjusted deficits) as well, required revisions are considerably larger than have occurred in history. In all, then, it seems unlikely that the OECD's current estimates will ultimately be regarded as having provided a seriously distorted view of cyclically adjusted fiscal positions.

One country worth further consideration, however, is Japan. Real GDP in Japan rose at an annual rate of about 4% during the 1980s, but growth has averaged only about 1¼% per year since then. Understanding the degree to which such an enormous slowdown reflects lower potential output is difficult and there is considerable disagreement about it. Both the OECD and the IMF estimate potential GDP growth to have slowed along with actual GDP growth, from about 4% in the 1980s to around 1¼% more recently, and estimate that the output gap averaged about zero throughout the 1990s and that GDP has remained about 2% below potential since 1999. In other words, they view almost all the slowdown as being structural (see also Hayashi and Prescott (2002)). And indeed, there are good reasons for believing that potential output growth has slowed substantially: population growth has slowed, productivity growth in the 1980s was probably unsustainable, and the equilibrium unemployment rate has probably risen (OECD (2004b)). Furthermore, the behaviour of prices, with a

¹² IMF data are from the *World Economic Outlook*, June 2004. A few adjustments for comparability and errors needed to be made to the IMF estimates of structural (that is, cyclically adjusted) balances. In particular, (a) erroneous data for Sweden prior to 1999 were replaced with data from the September 2003 *WEO*; (b) the structural balance for the United Kingdom was adjusted for UMTS revenues in 2000, which were erroneously omitted; and (c) the structural balance for Belgium in 2003 was adjusted for a one-off factor that was not included in the OECD's estimate for that year. In constructing the hybrid estimates, for each of several revenue and expenditure components (z) that are taken to be cyclically sensitive, the cyclically adjusted magnitudes (z^*) are defined as $z^* \equiv z (GDP^*/GDP)^\epsilon$, where ϵ is the elasticity specific to that component and country (van den Noord (2000)). The hybrid calculations utilise the IMF estimates of potential GDP in place of the OECD estimates.

¹³ Specifically, for each country and year, I calculated the range of output gap estimates made between December 1995 (the first year these gaps were published) and December 2003. There are therefore nine output gap estimates for the years 1990 through 1995, diminishing to four output gap estimates for 2000 (those made in December 2000 through December 2003). The table then presents, for each country, the average of the 11 yearly ranges from 1990 to 2000.

mild deflation persisting but not becoming more severe, also suggests that the output gap may not have been exceptionally large in recent years.¹⁴

Nevertheless, procedures for constructing potential output may not be well equipped to handle prolonged slowdowns as in the Japanese situation, for they may have a mechanical tendency to revise potential output toward actual output during such periods; in fact, the IMF's and OECD's estimates of potential output growth for Japan have been revised down considerably over the past decade. As a result, some outside analysts (see Krugman (1998), Kuttner and Posen (2001) and Posen (2001)) believe output gaps in Japan to be notably larger than estimated by the IMF and OECD. And, less explicitly, many authors since the late 1990s (eg Bernanke (2000) and Svensson (2003)) have expressed serious concern about the Bank of Japan's liquidity-trap difficulties in pursuing an expansionary policy, and the depth of these concerns suggests that these authors viewed there to be more at stake than 2% to 3% of GDP. Thus, it seems fair to treat the cyclically adjusted budget figures for Japan more tentatively than for the other countries. It is at least conceivable that Japan's cyclically adjusted balance is much larger, and that it has more room to grow out of its fiscal situation, than commonly assumed.

4. Sustainability

The magnitude of the fiscal deficits currently being run by a number of countries raises the question as to whether fiscal positions are sustainable. Formally, a fiscal position is defined as sustainable if the present value of future fiscal surpluses that would be generated under prospective fiscal policies is sufficient to cover the existing stock of net debt. Less formally, because sustainability implies that the debt will not rise as a share of GDP indefinitely, policies that lead to constant debt ratios are often defined to be sustainable. That less formal definition is the one used here.

The fiscal adjustment that leads the existing debt/GDP ratio to be maintained at current levels is by no means the optimal adjustment for a country to choose at any given moment. On the one hand, countries with high debt ratios (especially Japan, Italy and Belgium) may believe that lower debt levels would be beneficial in promoting economic growth. Reducing the debt ratios would require fiscal adjustments in excess of those indicated by the sustainability indices. On the other hand, a country in recession may wish to employ stimulative fiscal policies that are unsustainable in the long run but that are nevertheless desirable on a short-term basis. In this second case, however, it remains important to recognise that fiscal adjustments must eventually be made, and that the longer adjustment is delayed the larger will be the adjustments that are eventually required to service the higher debt levels.

Simple indices of fiscal sustainability can be derived as follows. (See Blanchard (1990) or Chalk and Hemming (2000) for more detailed presentations of these ideas.) Net debt (B) will increase whenever the government runs a fiscal deficit, that is, when non-interest expenditures (G) plus interest payments on the net debt position (rB) exceed receipts (T).¹⁵

$$dB = G + rB - T. \tag{1}$$

Using lower-case letters to denote magnitudes as a share of GDP, the expression for the change in net debt as a share of GDP is given by:

¹⁴ There are several possible ways to reconcile Japanese price performance with larger output gaps. One is that the Phillips curve may exhibit non-linearities at low levels of inflation (Kuttner and Posen (2001)). A second is that expectations of inflation may have stabilised near zero, implying that an output gap would generate *low* inflation rather than *declining* inflation (Blanchard (2000)). A third is that the Japanese economy could be characterised by "hysteresis" such that stagnation in output has itself caused potential output growth to slow. If such hysteresis were to work in the positive direction as well as the negative, then output may have room to grow as if output gaps were larger than indicated by the behaviour of prices.

¹⁵ Note that the net debt data cover the general government only, and therefore have as their counterpart the government debt held by the central bank as well as the private sector. In a more general treatment, the budget identity of the central bank would be included as well, and the consolidated net debt of the government and central bank would be the relevant debt measure in equation (1). Such an adjustment is commonly used in studies of inflationary finance. For the countries in this study, it is important primarily for Japan, where the BOJ has greatly expanded base money by purchasing and holding a substantial portion of government debt. See Lebow (2004).

$$db = 1/Y dB - b 1/Y dY \quad (2)$$

$$= - (t-g) + (r-x) b$$

where x is the growth rate of nominal GDP. That is, net debt will be a constant share of GDP ($db = 0$) when the primary balance ($t-g$) equals the stock of net debt times the difference between the interest rate and the GDP growth rate. I denote this as the required primary balance:¹⁶

$$(t-g)^* \equiv (r-x)b \quad (3)$$

A natural definition for a sustainability index (S) is the difference between the actual and required primary balances, indicating the magnitude of fiscal adjustment required to generate a stable net debt ratio:

$$S \equiv (t-g) - (t-g)^* = (t-g) - (r-x)b \quad (4)$$

When the actual primary balance is below the required balance (S is negative), net debt will be increasing as a share of GDP. The fiscal position will therefore be less sustainable the smaller the primary surplus, the larger the interest rate/GDP growth differential, and the larger the initial net debt ratio. Several comments on the implementation and interpretation of these formulas are in order.

First, one would ideally like to use forecasts of the primary balance to take into account projected changes under current fiscal parameters. As a step in that direction, I use the *cyclically adjusted* primary surplus in 2003 to measure sustainability. As the main purpose of a sustainability index is to indicate the magnitude of fiscal adjustment necessary to stabilise debt ratios, I want to abstract from changes that are expected to come about automatically as output gaps close. The calculations would be little changed if I used 2005 values instead of 2003, as the OECD projects little change in the cyclically adjusted primary balances for almost all countries in the sample. (As noted above, Italy is one exception.) However, we must remember that forecasts only two years ahead are not sufficient to capture the projected strain on government finances from ageing populations. In that sense, the calculations presented here are incomplete and ought to be interpreted as lower bounds on the adjustment required to stabilise debt ratios over the longer term (see Dang, Antolin and Oxley (2001), for example).

Second, choices must be made about the differential between the interest rate and GDP growth rate used in the formula. The differential has varied considerably both over time and across countries, spanning values both positive and negative. The indices presented in Table 6 employ two different assumptions: a differential of 1 percentage point, and the projected differential between long-term government bond rates and potential GDP growth in 2005. The first is a rough average of the wide range of values seen in industrial countries over a long period of time; it is also a reasonable, though perhaps slightly high, estimate of the discount rate, which some theoretical models suggest ought to be measured by this differential. The second is an attempt to approximate a different equilibrium value for each country, noting that OECD forecasts two years ahead generally assume that economies will be approaching a steady state. As can be seen in the table, the two alternatives differ most prominently for Ireland and Spain, where the differential is projected to be negative.¹⁷

Third, although the formulas hold for *net* debt, concerns about the quality and cross-country comparability of data on non-financial assets have led some analysts to focus instead on stability of *gross* debt ratios. Simply substituting gross for net debt in the equations above amounts to ignoring the return on government financial assets. Although such returns are often less than the interest rate on gross debt, they are not zero; therefore, such a substitution will typically lead to an overly pessimistic indicator of sustainability. More generally, the equations could be modified to allow the

¹⁶ Equivalently, one could define the required total (not primary) balance $(t-g-rb)^*$ as being equal to the negative of the stock of net debt times the nominal GDP growth rate $(-xb)$. In other words, an overall fiscal deficit is consistent with a stable debt ratio. Parenthetically, note that the objective in the EUs Stability and Growth Pact for countries to maintain budget balance or surplus on average over the business cycle therefore implies that debt ratios will be ever declining as output increases; in the long run, this budget balance target is therefore far more stringent than the target that gross debt be no higher than 60% of GDP. Indeed, with nominal GDP rising 5% per year (3% real growth and 2% inflation), a deficit that averages 3% of GDP - the Pact's deficit *ceiling* - will hold the debt ratio constant at 60%.

¹⁷ We must also recognise that interest rates will not be exogenous to fiscal outcomes, as is assumed here. Higher actual and projected fiscal deficits probably imply higher equilibrium interest rates.

interest rate paid on gross debt to differ from the interest rate earned on financial assets.¹⁸ However, these interest differentials are small in comparison with the variation over time in the interest rate/GDP growth differential, and results based on such modifications will not be reported.

Fourth, the primary surplus in equation (4) includes spending on investment as well as current consumption. Arguably, as investment provides returns into the future, it should be treated differently from consumption. Indeed, one could argue that investment that leads to an accumulation of real assets should be treated the same as a fiscal surplus that leads to an accumulation of financial assets; that is, only the *current* primary surplus should be included. Thus, I shall present this measure of fiscal sustainability as well.

Table 6 presents the required primary balances and sustainability indexes from equations (3) and (4). The calculations demonstrate that Japan's debt ratios will continue to increase unless substantial adjustments of around 7% of GDP are made to the primary balance; if one were to ignore government investment and consider only the current portion of the primary balance, an adjustment of around 4½% of GDP would be required. Fiscal policy also looks highly unsustainable in the United States, with an adjustment of around 2½% to 3% of GDP necessary to stabilise debt ratios in that country; and as we saw in Table 1, no policies are now in place to lead to any expected improvement by 2005. The United Kingdom requires an adjustment of around 1½% of GDP, and France and Germany each require adjustments of around 1% of GDP, to stabilise their debt ratios, though if public investment is excluded policy in these countries looks sustainable.

Aside from these five large countries, every country in this study is running a cyclically adjusted primary surplus large enough to maintain a stable or declining debt ratio (again, ignoring the longer-run fiscal effects of ageing populations). Among the high-debt countries, Belgium is running a very large primary surplus of 6.3% on a cyclically adjusted basis, sufficient for the debt ratios to continue their downward trend. Italy is also running a primary surplus large enough to generate positive sustainability indices for 2003. However, Italy has been relying on one-off measures to improve its fiscal position recently, and the OECD is expecting Italy's cyclically adjusted primary balance to decline to around 2% of GDP by 2005. Among the other countries, one interesting case is Ireland, where potential GDP growth is estimated to be well above the long bond rate; if this assessment proves accurate, Ireland's fiscal policy will prove sustainable.

4.1 Additional sustainability calculations

The above calculations show the primary balance required to stabilise the debt ratio assuming that adjustment is made immediately. Of course, this is not realistic. But one can easily calculate the sensitivity of the required primary balance to a delay in the adjustment. Assuming that equation (2) approximately holds in discrete time, then assuming that *the primary cyclically-adjusted balance remains unchanged at its original level* $(t-g)_0$, in five years the net debt ratio can be shown to equal:

$$b_5 = (1+r-x)^5 b_0 - (t-g)_0 \sum_{i=1,5} (1+r-x)^{i-1} \quad (5)$$

or, with further manipulation,

$$b_5 = b_0 - S_0 (5 + 10(r-x) + 10(r-x)^2 + 5(r-x)^3 + (r-x)^4) \quad (6)$$

The debt ratio will have increased if the primary balance is less than the required balance such that the sustainability index (S_0) from equation (4) is negative; after five years, the increase will be five times that difference plus additional terms representing compounding. We can then calculate the primary balance that is required to hold the debt ratio constant at this new, higher level:

$$(t-g)_5^* = (r-x) b_5 \quad (7)$$

Note, crucially, that this primary balance will not be sufficient to return the debt ratio to its original (b_0) level; it will simply prevent it from rising further.

As shown in Table 6, the costs of delay are significant for Japan. Waiting five years to adjust raises the net debt ratio enough that the primary balance required to stabilise that debt ratio must be around ½%

¹⁸ Similarly, the return on financial assets, and therefore the definition of the primary balance, could be constructed using all capital income receipts rather than only interest receipts.

of GDP larger than if the adjustment were made today. However, for the countries other than Japan that have negative sustainability indexes, the consequences are considerably smaller (again, assuming that countries only wish to stabilise, not reverse, those higher debt ratios and that the primary balances remain unchanged). For the United States, the United Kingdom, France and Germany, waiting five years to adjust will raise the required primary balance by about 0.1% of GDP.

Finally, stabilizing the debt ratio at the current level (let alone at the higher level enabled by a delayed adjustment) may not be sufficient for countries such as Italy, Belgium and Japan, where ratios are quite high. The optimal debt ratio is an elusive concept, but for illustrative purposes I shall assume that the Maastricht criterion of a 60% *gross* debt ratio is a desirable target for these countries. Given the desire to reach such a target debt level in a given length of time, such as ten years, one can manipulate equation (5) to generate the primary surplus required to meet this goal:

$$(t-g)_M = [(1+r-x)^{10} b_0 - b_{10}] / \sum_{i=1,10} (1+r-x)^{i-1} \quad (8)$$

where b_{10} represents the net debt ratio that corresponds to the Maastricht gross debt target.¹⁹ To a first approximation, this calculation simply amounts to augmenting the required primary surplus over each of the next 10 years by one tenth of the distance between the current and desired debt ratios. As shown in the table, Italy is running a primary surplus large enough to put debt on a downward trajectory, but not large enough to achieve the 60% debt target in 10 years; a primary surplus of around 5-1/2% of GDP would be required to meet that goal. However, Belgium's 6.3% cyclically adjusted primary surplus in 2003 is larger than that required to reach the 60% target in 10 years. For Japan, such a target would require an enormous adjustment, though as discussed above, Japan's gross debt is misleadingly large (and the country is obviously not subject to the Maastricht rules in any case).

5. Conclusions

This paper has documented the striking changes in fiscal policy in industrial countries over the past 10 years. The results can be summarised as follows.

First, a number of countries, particularly the G7 countries other than Canada, had substantially negative fiscal balances on a cyclically adjusted basis in 2003. The smaller industrial countries generally had smaller deficits or surpluses.

Second, based on current fiscal legislation, the OECD expects to see no clear improvement by 2005.

Third, the most striking deterioration in cyclically adjusted fiscal positions since 2000 was in the United States, followed by the United Kingdom. (Fiscal positions in Finland, Sweden and Ireland also deteriorated notably, but not to positions of substantial deficit.)

Fourth, all countries' fiscal positions in 2003 were worse than had been expected in late 2000. But after abstracting from the effects of a surprisingly weak economy, the negative surprise was largest for the United States, followed by the United Kingdom, Ireland and France. This exercise may be a rough indication of new discretionary policy measures in these countries. In a broader sense, of course, even discretionary policy changes might be interpreted as being "cyclical" to the extent that the changes are a reaction to weak economic conditions. Whether the cyclical label truly applies, however, will depend on whether discretionary policy is reversed as economic growth strengthens.

Finally, sustainability calculations suggest that the current policy stance will lead to ever-rising net debt ratios in Japan (which would require an adjustment of some 7% of GDP), the United States (2½ to 3%), the United Kingdom (1½%), France (1%) and Germany (1%). Italy's fiscal position is strong enough to stabilise the debt ratio at its current high level, but not strong enough to bring the debt ratio down appreciably. All of the other countries' fiscal positions are sustainable according to this procedure. Crucially, however, these estimates only utilise near-term fiscal projections and so do not take into account the longer-run expected demographic influences on government finances. For this

¹⁹ By specifying the debt target in terms of gross debt rather than net debt, the Maastricht rules give countries the incentive to sell assets in order to pay down the gross debt; the calculations presented here obviously abstract from that possibility.

reason, these sustainability calculations can be viewed as a lower bound on the required degree of fiscal adjustment.

One question raised by these results is, why have fiscal deficits been largest, and deteriorated the most, in the largest economies (with the exception of Canada)? Japan's fiscal difficulties clearly are connected with the country's decade-long economic stagnation, which finally appears to have been lifting by 2003. But aside from Japan, the other large countries have not experienced notably more severe economic slowdowns than have the smaller economies, and their budgets are generally less cyclically sensitive than those of the smaller countries. Perhaps the answer lies more in politics than economics, with the smaller economies, particularly in the European Union, coming under especially great pressure to prevent large fiscal deteriorations. Better understanding the forces that have contributed to good fiscal outcomes in the smaller countries might be useful in understanding how greater fiscal discipline could be promoted in the larger countries as well.

Table 1
Fiscal indicators in 2003 and projected for 2005
(as a percentage of GDP or potential GDP)

	Indicators for 2003								Projected indicators for 2005				
	Total fiscal balance	Cyclically adjusted balance	Cyclically adjusted current balance	Cyclically adjusted primary balance	Gross debt ratio	Net debt ratio	Gross debt ratio, Maastricht definition	Memo: output gap	Total fiscal balance	Cyclically adjusted balance	Gross debt ratio	Net debt ratio	Memo: output gap
G7 countries													
Japan	-8.0	-7.5	-5.0	-5.9	157.3	79.3	na	-1.8	-6.6	-7.0	168.6	90.6	1.5
United States	-4.8	-4.2	-3.2	-2.5	62.8	46.3	na	-2.0	-3.9	-3.9	65.0	48.5	0.2
France	-4.1	-3.3	-2.1	-0.6	71.1	42.7	62.9	-1.8	-3.6	-2.9	76.9	46.9	-1.8
United Kingdom	-3.2	-2.9	-1.1	-1.3	51.6	33.6	39.9	-0.7	-2.9	-3.0	54.0	36.0	0.2
Germany	-3.9	-2.3	-1.3	0.3	65.1	51.9	64.2	-2.9	-3.1	-1.7	67.7	56.2	-2.7
Italy	-2.5	-1.6	-0.7	3.1	116.7	93.5	106.1	-2.0	-3.9	-2.9	116.9	93.7	-2.2
Canada	1.2	1.3	1.7	3.3	75.6	34.9	na	-0.2	1.3	1.3	69.9	29.4	0.0
Other industrial countries													
Netherlands	-3.2	-1.7	-0.9	0.6	54.8	44.1	54.8	-2.1	-2.9	-1.1	58.7	47.8	-2.5
Portugal	-2.9	-1.5	-1.7	1.4	60.1	na	60.1	-3.6	-3.2	-1.9	61.1	na	-3.5
Austria	-1.4	-1.0	0.9	1.6	64.9	43.4	64.9	-1.6	-1.9	-1.4	65.3	43.9	-1.8
Ireland	0.2	-0.4	2.3	-0.3	32.8	na	32.8	1.9	-0.8	-0.9	30.0	na	0.5
Spain	0.3	0.5	2.9	2.7	65.0	38.1	50.8	-0.5	0.5	0.2	61.5	34.5	0.7
Australia	0.8	0.6	1.4	2.2	18.2	2.9	na	0.6	0.5	0.4	16.3	1.1	0.3
Sweden	0.5	0.7	1.4	0.6	61.5	4.1	51.9	-0.4	0.6	0.5	60.4	3.1	0.1
Belgium	0.2	1.1	0.0	6.3	105.1	94.2	100.8	-1.4	-0.7	-0.1	98.4	87.5	-1.0
Finland	2.1	3.0	3.6	3.2	51.6	-33.6	45.3	-1.4	2.1	1.9	53.3	-34.5	0.3

Source: *OECD Economic Outlook* (June 2004).

Table 2

Change in fiscal indicators from 1993 to 2003

(as a percentage of GDP or potential GDP)

	Total fiscal balance	UMTS auction	Cycle (excl UMTS)	Cyclically adjusted balance	Of which			Net debt change	Memo: Avg GDP growth
					Net interest reduction	Spending restraint	Higher cyc. adj. receipts		
Change from 1993 to 2000									
G7 countries									
Japan	-5.1		-0.2	-4.9	-0.3	-3.8	-0.8	41.4	1.3
United States	6.6		0.9	5.6	0.8	1.6	3.2	-15.9	3.7
France	4.6		1.3	3.3	0.0	0.5	2.7	7.7	2.1
United Kingdom	11.8	2.4	3.0	6.4	0.1	3.3	3.0	2.9	3.2
Germany	4.4	2.5	1.3	0.6	-0.2	-0.2	1.0	14.3	1.5
Italy	9.6	1.2	2.0	6.5	6.2	1.3	-1.0	-7.1	1.7
Canada	11.8		2.8	9.0	1.4	6.2	1.3	-19.5	3.8
Other industrial countries									
Netherlands	5.0	0.7	3.0	1.3	1.2	4.5	-4.4	3.6	3.1
Portugal	5.2	0.4	1.9	2.9	4.2	-4.5	3.1	na	2.8
Austria	2.6	0.4	0.7	1.5	0.5	3.5	-2.5	1.6	2.3
Ireland	7.2		3.8	3.4	3.7	3.6	-4.0	na	8.4
Spain	6.1	0.3	1.8	3.9	1.4	5.3	-2.9	0.5	2.9
Australia	6.6	0.2	1.5	4.9	0.9	0.3	3.7	-12.7	4.1
Sweden	16.5		6.6	9.9	-1.2	7.0	4.2	-8.7	2.8
Belgium	7.5		3.0	4.5	3.7	-0.6	1.4	-26.3	2.3
Finland	14.3		9.2	5.2	-1.4	3.9	2.7	-15.4	3.7
Change from 2000 to 2003									
G7 countries									
Japan	-0.5		-0.2	-0.3	-0.1	0.5	-0.7	20.2	0.9
United States	-6.4		-1.0	-5.4	0.8	-1.5	-4.7	3.3	1.9
France	-2.7		-1.1	-1.6	0.2	-0.6	-1.2	7.9	1.2
United Kingdom	-7.1	-2.4	-1.0	-3.7	0.6	-3.0	-1.4	-0.7	2.0
Germany	-5.2	-2.5	-1.9	-0.8	0.3	0.9	-2.0	9.5	0.3
Italy	-1.8	-1.2	-1.2	0.5	1.4	-0.8	0.0	-1.4	0.8
Canada	-1.9		-0.9	-0.9	1.3	0.1	-2.4	-10.0	2.3
Other industrial countries									
Netherlands	-5.4	-0.7	-4.1	-0.6	1.0	0.5	-2.2	-0.3	0.2
Portugal	0.0	-0.4	-2.5	2.9	0.5	0.4	2.0	na	0.3
Austria	0.2	-0.4	-1.2	1.8	0.6	3.0	-1.7	-1.7	1.0
Ireland	-4.2		-1.4	-2.8	0.8	-1.9	-1.7	na	4.8
Spain	1.2	-0.3	-0.4	2.0	0.9	0.5	0.7	-4.7	2.4
Australia	0.0	-0.2	-0.3	0.5	0.5	-0.7	0.6	-7.0	3.2
Sweden	-4.6		-1.8	-2.8	1.0	-1.0	-2.8	2.7	1.5
Belgium	0.1		-2.3	2.4	1.5	-1.1	2.1	-8.5	0.8
Finland	-5.0		-1.6	-3.4	0.9	-0.7	-3.6	-2.1	1.7

Note: UMTS receipts are one-time effects of auctioning the mobile telephone spectrum.

Source: *OECD Economic Outlook* (June 2004).

Table 3
Change in capital gains revenues
 (as a percentage of potential GDP)

	Change from 1993 to 2000			Change from 2000 to 2003		
	Cyclically adjusted receipts	Capital gains cycle	Other	Cyclically adjusted receipts	Capital gains cycle	Other
United States	3.2	0.7	2.6	-4.7	-0.6	-4.1
France	2.7	0.1	2.6	-1.2	-0.2	-1.0
United Kingdom	3.0	0.3	2.7	-1.4	-0.2	-1.2
Germany	1.0	0.0	1.0	-2.0	0.0	-2.0

Sources: *OECD Economic Outlook* (2004); Girouard and Price (2004); author's calculations.

Table 4
Fiscal indicators in 2003 versus December 2000 expectations
 (as a percentage of GDP or potential GDP)

	Total surprise in 2003 balance	From unexpected GDP growth (1999-2003)	Of which		Total non-GDP-based surprise	Of which		Memo: Average GDP growth 1999-2003			Memo: Potential GDP growth 1999-2003		
			From revised (Y - Y*)	From Y* revision		Non-GDP error to 2000 balance	Other	Predicted in Dec 2000	Current data	Difference	Estimated in Dec 2000	Estimated currently	Difference
G7 countries													
Japan	-2.5	-0.5	-0.4	-0.1	-2.0	-1.7	-0.4	2.0	1.4	-0.6	1.4	1.2	-0.2
United States	-7.6	-1.4	-0.9	-0.5	-6.2	-0.3	-5.9	3.9	2.4	-1.5	4.0	3.5	-0.5
France	-3.4	-1.3	-1.2	-0.1	-2.2	-0.4	-1.8	2.7	2.0	-0.8	2.2	2.2	0.0
United Kingdom	-4.7	-0.2	-0.5	0.3	-4.5	0.8	-5.3	2.5	2.4	-0.1	2.4	2.6	0.2
Germany	-2.9	-3.1	-2.5	-0.6	0.2	0.0	0.2	2.5	0.9	-1.6	1.8	1.5	-0.3
Italy	-2.0	-2.2	-1.3	-0.9	0.2	-0.7	1.0	2.6	1.4	-1.3	2.2	1.7	-0.5
Canada	-0.7	-0.7	-0.6	0.0	-0.1	0.4	-0.4	3.5	3.0	-0.5	3.3	3.3	0.0
Other industrial countries													
Netherlands	-4.3	-6.3	-3.8	-2.5	2.0	1.3	0.7	3.5	1.0	-2.5	3.3	2.4	-1.0
Portugal	-1.9	-2.9	-2.3	-0.6	1.0	-1.5	2.5	3.1	1.1	-2.0	3.1	2.7	-0.4
Austria	-1.4	-1.4	-1.3	-0.1	-0.1	0.0	-0.1	2.8	1.6	-1.3	2.5	2.4	-0.1
Ireland	-6.7	-2.6	-0.6	-2.0	-4.1	-0.9	-3.2	8.2	6.1	-2.1	8.2	6.5	-1.6
Spain	-0.2	-0.7	-0.7	0.0	0.5	-0.6	1.1	3.3	2.9	-0.4	2.9	2.9	0.0
Australia	-0.4	-0.7	-0.3	-0.4	0.3	0.1	0.1	3.8	3.2	-0.6	4.0	3.6	-0.4
Sweden	-2.9	-1.8	-1.8	0.1	-1.1	1.4	-2.6	2.9	2.2	-0.7	2.5	2.5	0.0
Belgium	-0.6	-3.6	-2.3	-1.2	3.0	0.2	2.7	3.0	1.5	-1.5	2.6	2.1	-0.5
Finland	-3.1	-4.3	-1.9	-2.4	1.3	3.3	-2.0	4.4	2.6	-1.8	3.6	2.6	-1.0

Sources: *OECD Economic Outlook* (June 2004 and December 2000); author's calculations.

Table 5
Output gap uncertainty
(as a percentage of potential GDP)

	Cyclically adjusted balance 2003	Output gap 2003	Typical range of output gap revisions	Required revision for zero cyclically adjusted balance
G7 countries				
Japan	-7.5	-1.8	2.6	-29.1
United States	-4.2	-2.0	1.0	-15.5
France	-3.3	-1.8	1.1	-7.8
United Kingdom	-2.9	-0.7	1.5	-5.3
Germany	-2.3	-2.9	1.3	-4.5
Italy	-1.6	-2.0	1.8	-3.4
Canada	1.3	-0.2	1.5	3.4
Other industrial countries				
Netherlands	-1.7	-2.1	1.5	-2.4
Portugal	-1.5	-3.6	2.1	-3.8
Austria	-1.0	-1.6	1.7	-3.4
Ireland	-0.4	1.9	3.1	-1.2
Spain	0.5	-0.5	3.1	1.3
Australia	0.6	0.6	1.5	2.2
Sweden	0.7	-0.4	1.9	1.1
Belgium	1.1	-1.4	2.4	1.8
Finland	3.0	-1.4	3.4	4.7

Sources: *OECD Economic Outlook* (various issues); author's calculations.

Table 6
Fiscal sustainability indicators in 2003
 (Share of GDP or potential GDP)

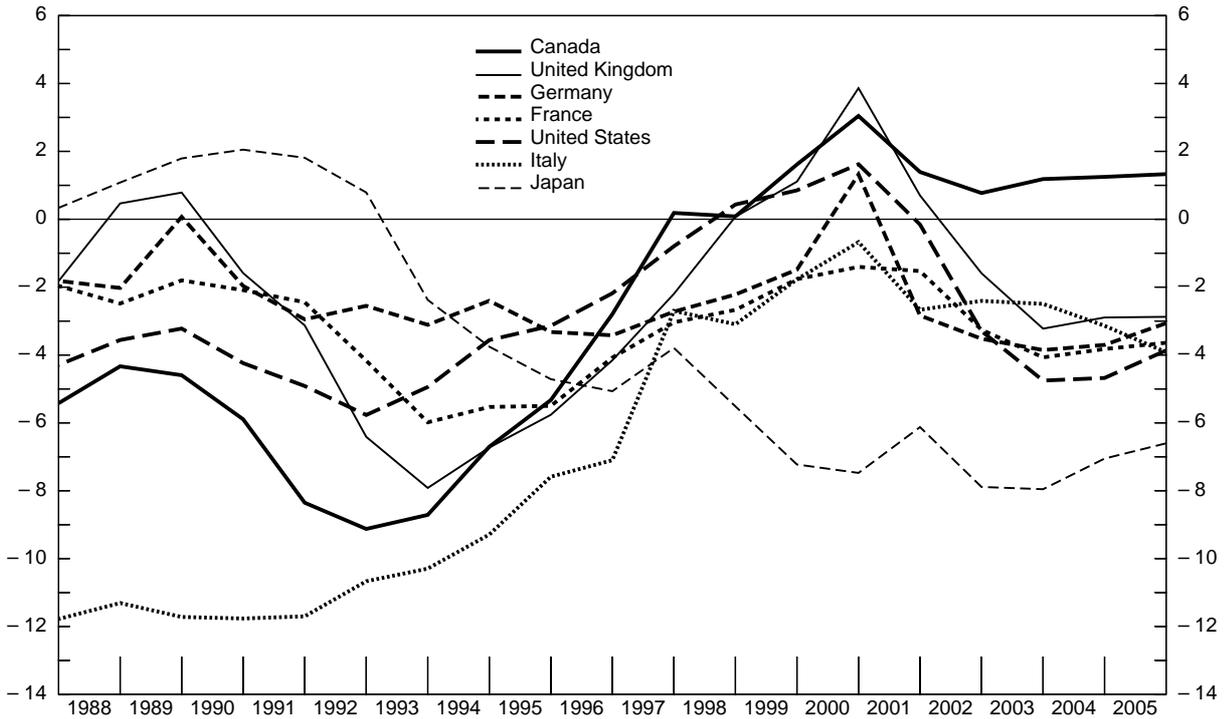
	Gross debt ratio 2003	Net debt ratio 2003	Cyclically adjusted primary balance 2003	Excluding capital account	Required primary balance to stabilize net debt ratio		Sustainability indexes		Required primary balance after five-year delay		Required primary balance for 60% gross debt ratio in ten years		Memo: long-term interest rate less potential GDP growth rate, 2005 (percentage points)
					r-x=1%	r-x=r-x* in 2005	r-x=1%	r-x=r-x* in 2005	r-x=1%	r-x=r-x* in 2005	r-x=1%	r-x=r-x* in 2005	
G7 countries													
Japan	157.3	79.3	-5.9	-3.4	0.8	1.2	-6.7	-7.1	1.1	1.8	10.1	10.3	1.5
United States	62.8	46.3	-2.5	-1.5	0.5	0.2	-2.9	-2.6	0.6	0.3	0.7	0.5	0.4
France	62.9	42.7	-0.6	0.6	0.4	0.3	-1.0	-0.9	0.5	0.3	0.7	0.6	0.7
United Kingdom	39.9	33.6	-1.3	0.4	0.3	0.3	-1.7	-1.7	0.4	0.4	-1.6	-1.6	1.0
Germany	64.2	51.9	0.3	1.4	0.5	1.2	-0.2	-0.9	0.5	1.3	0.9	1.5	2.3
Italy	106.1	93.5	3.1	4.0	0.9	1.0	2.2	2.2	0.8	0.8	5.3	5.4	1.0
Canada	75.6	34.9	3.3	3.8	0.3	0.2	2.9	3.1	0.2	0.1	1.8	1.7	0.7
Other industrial countries													
Netherlands	54.8	44.1	0.6	1.3	0.4	0.9	0.1	-0.4	0.4	1.0	-0.1	0.5	2.1
Portugal	60.1	na	1.4	1.2	0.6	0.9	0.8	0.5	0.6	0.8	0.6	0.9	1.4
Austria	64.9	43.4	1.6	3.4	0.4	0.8	1.1	0.8	0.4	0.7	0.9	1.3	1.9
Ireland	32.8	na	-0.3	2.4	0.3	-0.9	-0.6	0.5	0.4	-0.8	-2.3	-3.9	-2.6
Spain	50.8	38.1	2.7	5.1	0.4	-0.4	2.4	3.1	0.3	-0.2	-0.5	-1.4	-1.1
Australia	18.2	2.9	2.2	3.0	0.0	0.0	2.1	2.2	-0.1	0.0	-4.0	-4.3	-0.3
Sweden	51.9	4.1	0.6	1.3	0.0	0.0	0.6	0.6	0.0	0.0	-0.7	-0.7	0.9
Belgium	100.8	94.2	6.3	5.2	0.9	0.8	5.4	5.5	0.7	0.5	4.8	4.7	0.8
Finland	45.3	-33.6	3.2	3.8	-0.3	-0.3	3.5	3.5	-0.5	-0.4	-1.7	-1.7	0.8

Notes: 1. The sustainability index is the cyclically adjusted primary balance less the required balance. 2. Gross debt ratio uses Maastricht definition for countries in the EU. Net debt ratio uses ESA95/SNA93 definitions. 3. For Portugal and Ireland, net debt is not available and gross debt is used.

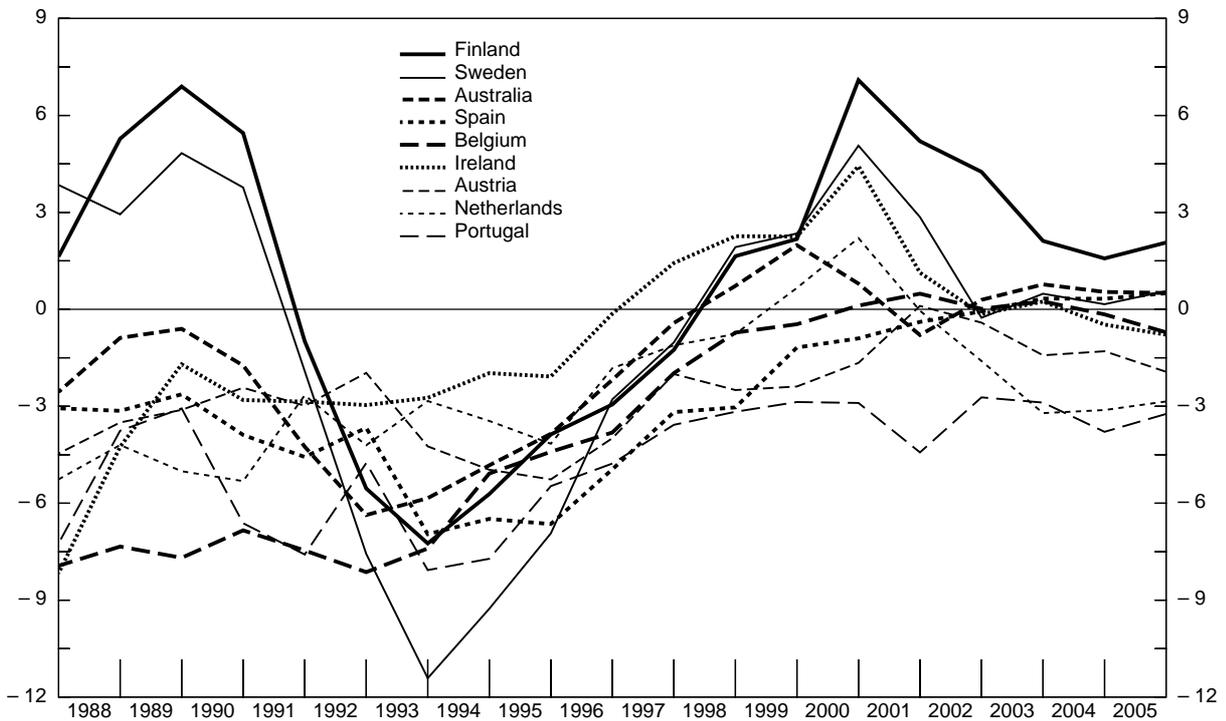
Sources: *OECD Economic Outlook* (June 2004); author's calculations.

Graph 1

Fiscal balance in G7 countries



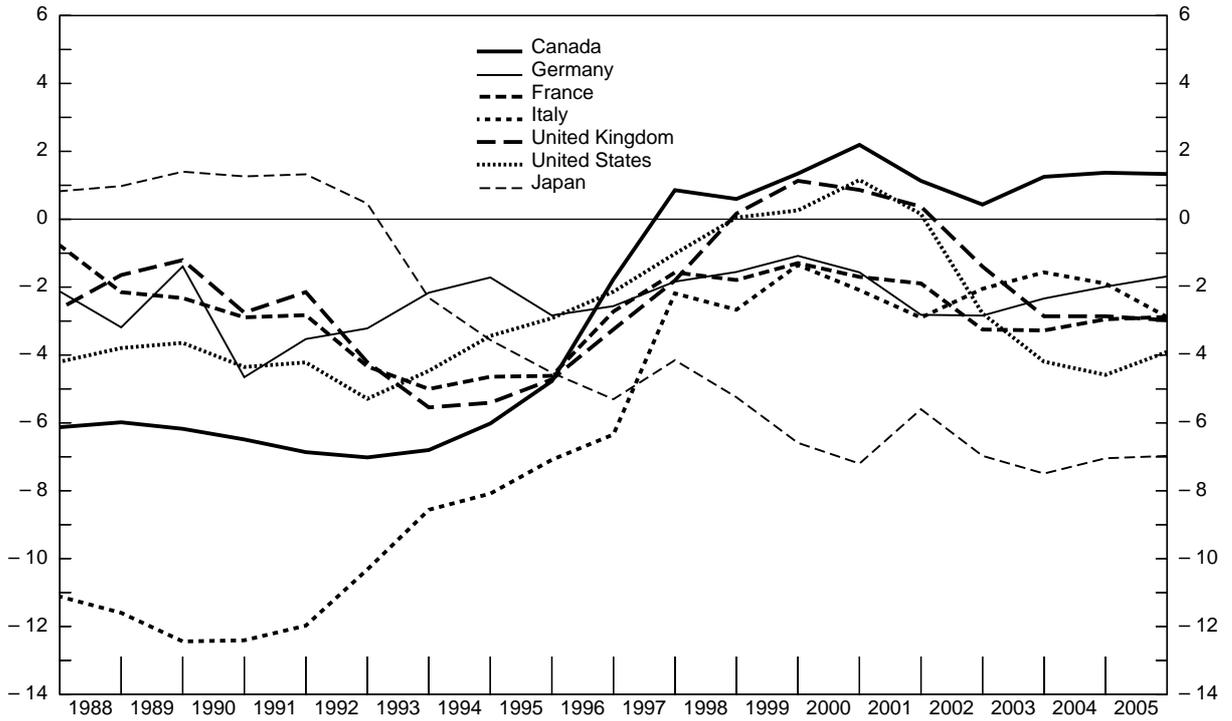
Fiscal balance in other industrial countries



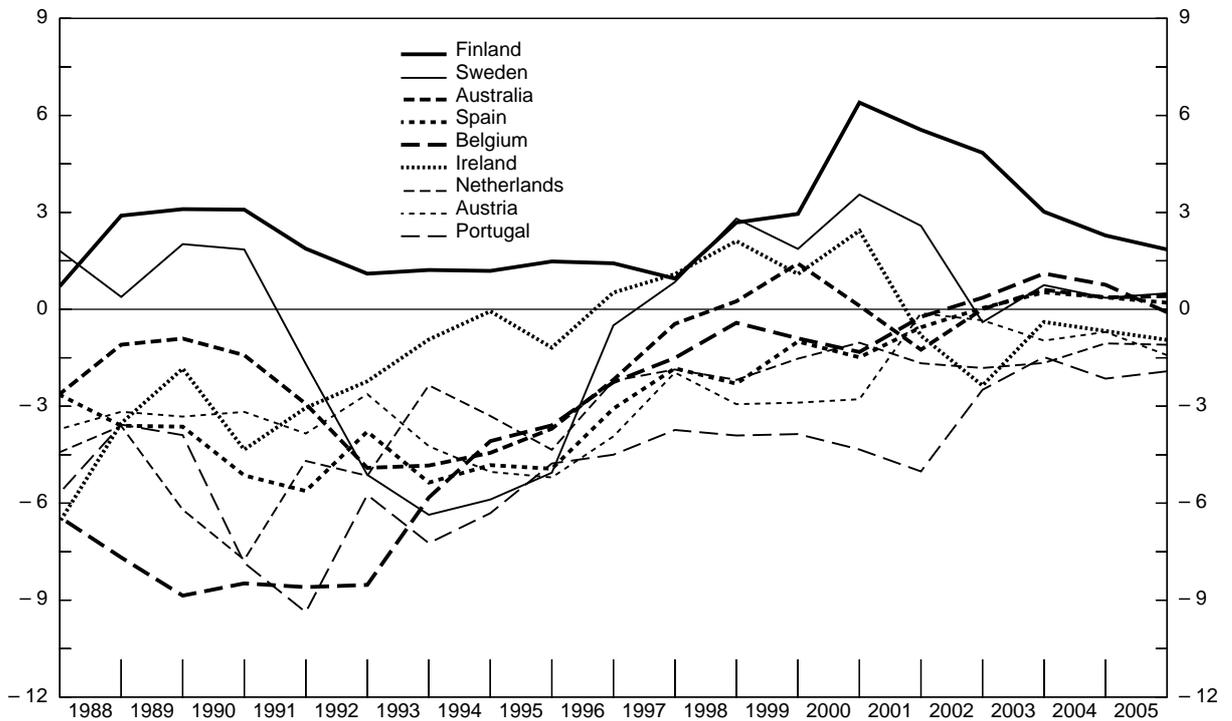
Source: OECD.

Graph 2

Cyclically adjusted fiscal balance in G7 countries



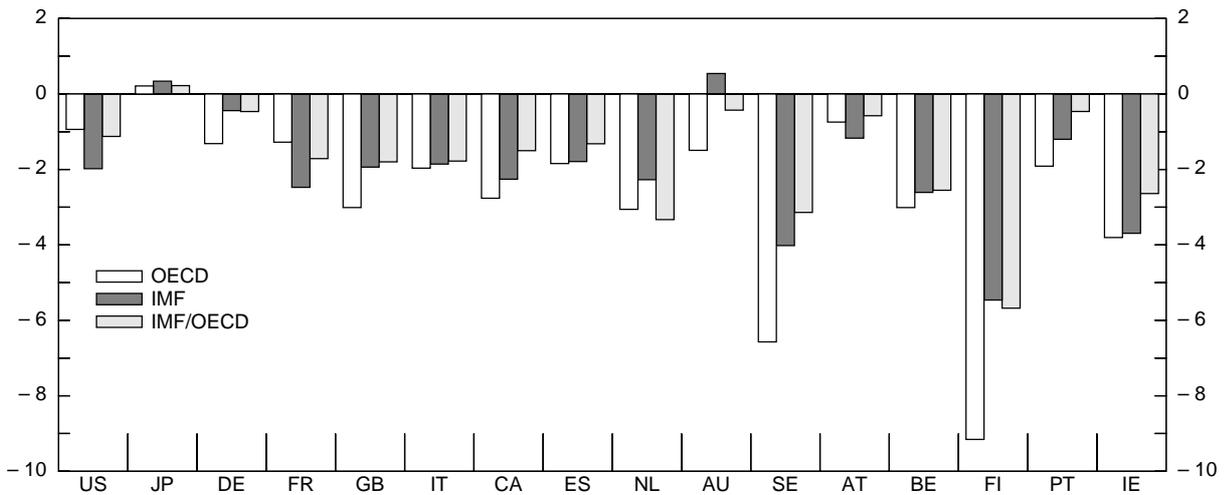
Cyclically adjusted fiscal balance in other industrial countries



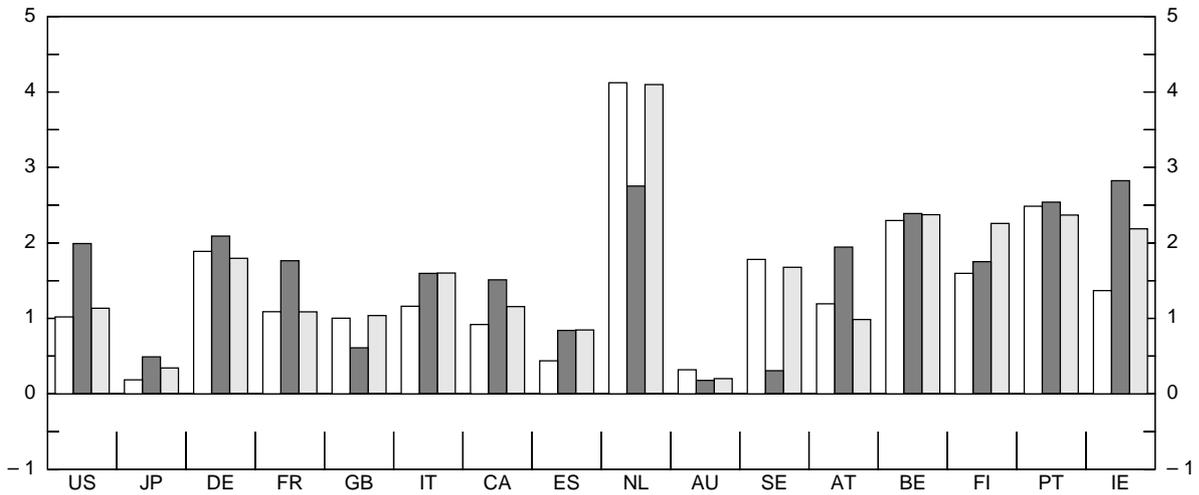
Source: OECD.

Graph 3

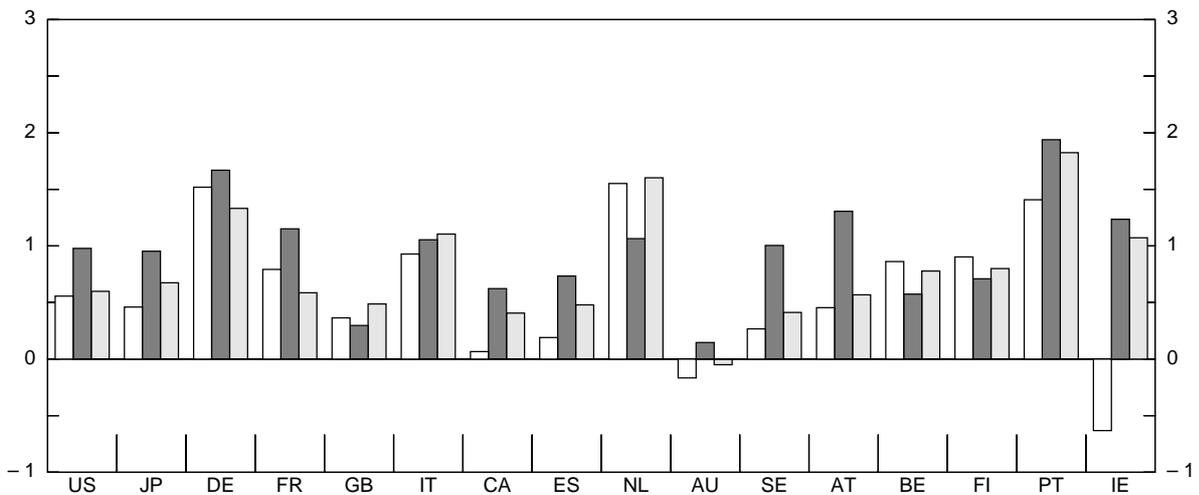
1993 - 2000 Change in cyclical adjustments



2000 - 2003 Change in cyclical adjustments



2003 Cyclical adjustments



AT = Austria; AU = Australia; BE = Belgium; CA = Canada; DE = Germany; ES = Spain; FI = Finland; FR = France; GB = United Kingdom; IE = Ireland; IT = Italy; JP = Japan; NL = Netherlands; PT = Portugal; SE = Sweden; US = United States

Sources: IMF; OECD.

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