



OECD Economics Department Working Papers No. 655

Strategies for Countries with  
Favourable Fiscal Positions

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<https://dx.doi.org/10.1787/230123832406>

**Unclassified**

**ECO/WKP(2008)63**

Organisation de Coopération et de Développement Économiques  
Organisation for Economic Co-operation and Development

**17-Dec-2008**

**English text only**

**ECONOMICS DEPARTMENT**

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**By Robert Price, Isabelle Joumard, Christophe André and Makoto Minegishi**

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## ABSTRACT/RÉSUMÉ

### Strategies for countries with favourable fiscal positions

The financial crisis and economic downturn are going to weigh on fiscal positions in OECD countries over the short to medium-term, both through the operation of automatic stabilisers and the enactment of discretionary fiscal stimulus packages. However, the strategic policy options facing OECD countries are mainly determined by the soundness of their underlying fiscal positions which vary substantially. This paper first describes how OECD economies are situated with respect to underlying fiscal balances and net government debt. A number of countries seem to enjoy favourable fiscal positions with underlying fiscal surpluses, low government debt or even positive net financial asset positions. When taking account, as far as possible, of implicit liabilities associated with ageing populations and resource-based revenues, fiscal positions still vary greatly across countries. The paper then examines the criteria involved in deciding whether government financial asset accumulation is in excess of needs and the use to which any excess government saving might be put, whether increasing public spending or reducing taxes. Finally, the determinants of the optimal size of the government balance sheet for any given desired net debt position are discussed.

*JEL codes:* E62, H2, H5, H6, J11, Q33

*Keywords:* Fiscal sustainability; fiscal policy; budget surplus; underlying fiscal balance; government financial assets; government debt; commodity-related revenues; public investment.

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### Stratégies pour les pays bénéficiant de situations budgétaires favorables

La crise financière et le ralentissement économique vont peser sur la situation budgétaire des pays de l'OCDE à court et moyen terme, à la fois à travers le jeu des stabilisateurs automatiques et la mise en œuvre de politiques discrétionnaires de relance budgétaire. Toutefois, les options stratégiques dont disposent les pays de l'OCDE sont principalement déterminées par la solidité de leur situation budgétaire sous-jacente, très variable d'un pays à l'autre. Ce document commence par décrire la situation des économies de l'OCDE en termes de déficit sous-jacents et de dette nette des administrations publiques. Un certain nombre de pays semblent bénéficier d'une situation budgétaire favorable, avec des surplus sous-jacents, une faible dette des administrations publiques, ou même une situation créditrice nette. Lorsque l'on prend en compte, dans la mesure du possible, les engagements implicites liés au vieillissement de la population et les revenus associés à l'exploitation de ressources naturelles, les situations budgétaires restent très variables selon les pays. Ce document examine ensuite les critères pertinents pour décider si l'accumulation d'actifs financiers par les administrations publiques est excessive par rapport aux besoins et quelles utilisations pourraient être faites d'une épargne excédentaire des administrations publiques, que ce soit pour accroître les dépenses publiques ou réduire les impôts. Il s'achève par une analyse des déterminants de la taille optimale du bilan des administrations publiques pour un niveau désiré de dette nette donné.

*Classification JEL :* E62, H2, H5, H6, J11, Q33

*Mots-clefs :* soutenabilité budgétaire ; politique budgétaire ; excédent budgétaire ; solde budgétaire sous-jacent ; actifs financiers des administrations publiques ; dette des administrations publiques ; revenus liés à l'exploitation de ressources naturelles ; investissement public.

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## STRATEGIES FOR COUNTRIES WITH FAVOURABLE FISCAL POSITIONS

Robert Price, Isabelle Joumard, Christophe André and Makoto Minegishi<sup>1</sup>

### Background, issues and findings

1. The financial crisis and economic downturn are going to weigh on fiscal positions in OECD countries over the short to medium-term, both through the operation of automatic stabilisers and the enactment of discretionary fiscal stimulus packages. However, the strategic policy options facing OECD countries are mainly determined by the soundness of their underlying fiscal positions which vary substantially. Whereas, on average, general government net financial liabilities amounted to just over 40% of GDP for the OECD area, a considerable number of governments had both an underlying fiscal surplus and a positive net financial asset position in 2007, with the underlying dynamics pointing to a sizeable further build-up in government assets in some countries. While there is a consensus on the need to control the accumulation of government debt so as to avoid unsustainable debt dynamics, no consensus exists as to the criteria for deciding what the level of debt should be or, if governments should run surpluses, what level and rate of financial asset accumulation is fiscally sustainable or desirable. This paper discusses the criteria involved in deciding whether the government asset accumulation is in excess of needs and the use to which any excess government saving might be put. The focus is on the options for countries with favourable fiscal positions, but the longer-term strategic considerations which are applied may be considered as having a general validity.

2. This paper first describes how OECD economies are situated with respect to underlying fiscal balances and net government debt, taking account, as far as possible, of implicit liabilities associated with ageing populations and the need to manage resource-based revenues in a generationally equitable way. The objective is to identify how closely OECD countries' net fiscal positions (as they enter the downturn) correspond to their long-term needs. The paper then looks at the macro-economic rationales for running structural surpluses – or not running structural deficits – and this is followed by a discussion of the considerations involved in deciding whether surpluses in excess of requirements could be used for increasing public spending or reducing taxes. In the final section, the paper discusses the choices and constraints facing governments as to gross debt and asset accumulation, since there are a variety of considerations determining how large the government balance sheet should be for any given desired net debt position.

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1. The authors are respectively Head of the Monetary and Fiscal Policy Division and economists in this division. They are grateful Jørgen Elmeskov, Jean-Luc Schneider and other OECD colleagues as well as to the participants of the Seminar on Fiscal Policies organised in Paris on 7 November 2008, for their valuable comments and suggestions on an earlier version of this paper. Special thanks to Claude Lavoie, Tony McDonald and Jukka Pekkarinen for discussing the paper. The authors would also like to thank Chantal Nicq for outstanding statistical assistance and Susan Gascard and Veronica Humi for excellent secretarial assistance. Any remaining errors fall under the responsibility of the authors.

3. The main findings of the paper are as follows:

*Assessment of underlying fiscal positions*

- *Underlying fiscal positions vary greatly across OECD countries:* half of them were running surpluses in 2007 and of these, eight had become net creditors. For several of these, favourable dynamics imply that the ratio of net assets to GDP could rise to relatively high levels.
- *For the majority of OECD economies, the government's net asset position may be considerably overstated – or net debt understated – in view of implicit liabilities attaching to the effects of demographics on public health and pension obligations and the need to distribute resource-based income fairly among generations.* Once these factors are allowed for, the number of countries which might be assessed as having taken consolidation too far is very limited.
- *Allowing for future commitments, there are strong arguments for both surplus and deficit countries to aim for long-run budget balance,* at least in terms of current government revenue and spending, largely because of considerations of intergenerational fairness. Because the rate of interest on government debt has been low, the government budget constraint has been eased in recent years, but this should not be assumed to be permanent.
- *Macro-economic considerations affect fiscal norms.* Where there is a structural deficiency in saving, with an unsustainable build-up of external debt, underlying budget surpluses might be justified. At the same time, the scope and effectiveness of fiscal policy as a stabiliser is enhanced where the starting position for net debt is low, or the government has net assets.

*Alternatives to surpluses*

- *Only a small number of OECD governments may have achieved a budget position where they could reduce or eliminate surpluses in the longer run.* In choosing how to do so, the marginal additions to social welfare from higher spending have to be weighed against the marginal excess burden of taxation, which is probably high enough to have important growth-impeding effects in many OECD economies. In selecting the taxes to cut, the empirical evidence is that corporate and income taxes are the most distorting.
- *Additional public spending could also increase the growth potential of the economy,* which could allow governments the choice of a positive debt-to-GDP ratio, since debt can be partly serviced from faster income growth. This applies in principle to areas of current spending such as education and health as well as to investment such as research and development and infrastructure spending. However, apart from the fact that the returns are very uncertain, defining an operational 'golden rule' which allows for debt-financed public investment (defined in a wider sense) is difficult and controversial.
- *When adjusting surpluses, timing issues also need to be considered.* While the current situation of cyclical weakness is one where short- and longer-run needs may coincide, surpluses often occur in periods of high capacity utilisation and adjustments need to be timed to avoid a pro-cyclical fiscal stance. Distributing surpluses then carries the danger of pushing the economy against capacity constraints, generating inflationary pressures and challenges for central banks in managing monetary policy.

*Government portfolio behaviour*

- *Government gross debt matters for longer-run fiscal sustainability and for stabilisation policy.* Portfolio balance considerations mean that the impact of government debt on financial markets is largely a function of gross debt, which can be subject to adverse debt dynamics and affect inflation expectations. Private sector responses to shorter-term fiscal policy adjustments are also conditioned by perceptions of gross debt. There are thus compelling reasons for governments to pay down gross debt.
- *Financial market considerations may mean that governments will always need to issue a certain amount of debt.* Government bonds serve both as a benchmark for pricing other financial instruments and as a safe investment for portfolio diversification. Substantial uncertainty exists as to how they could be replaced by other financial instruments while maintaining efficient and smooth functioning of financial markets.
- *The build up of government assets can have adverse incentive effects.* The build up of government assets can help in securing intergenerational equity, but may weaken pressures to control and reform public spending programmes and may have distorting effects on domestic capital allocation if not managed properly. Investment in foreign assets also raises governance issues, which may put limits on their expansion.

**How do OECD budget positions compare?***A number of OECD economies are in surplus...*

4. Net debt positions (gross financial liabilities minus financial assets) vary substantially among OECD countries, there being a positive correlation between government net debt ratios and underlying fiscal balances, which are constructed so as to eliminate one-off and cyclical factors (Figure 1, panel A).<sup>2</sup> In 2007, eight countries had both a fiscal surplus and a positive net financial asset position: Asia-Pacific countries (Australia, New Zealand and Korea), Nordic countries (Denmark, Finland, Norway and Sweden) and Luxembourg. In terms of debt dynamics, all but a few OECD countries had achieved an underlying fiscal balance sufficient to stabilise or reduce the net debt ratio (Figure 1, Panel B and Annex).<sup>3</sup> In some, including the Nordic countries, Korea and New Zealand, maintaining the underlying surplus at its current level will ensure a continued increase in their net asset position to above 40% of GDP, while in Australia, Canada, Switzerland and Spain, the net asset ratio would eventually reach around 20% of GDP.

*...but assessing relative budgetary health involves an array of factors*

5. While for a subset of OECD economies the current rate of net asset accumulation would seem to offer the opportunity to consider alternative uses for budget surpluses, government net debt/asset figures as recorded do not take account of the present value of future liabilities. On the spending side, future budget liabilities may be associated with transfer and entitlement regimes (most notably pensions), health spending and “off-budget” obligations omitted from the government balance sheets because they are of a contingent nature (e.g. debt guarantees). On the revenue side, factors which may need to be accounted for include receipts linked to resource depletion or to asset and commodity price booms which may subsequently be corrected.

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2. Joumard *et al.* (2008).

3. General government fiscal accounts are not available for Mexico and Turkey in the *OECD Economic Outlook* database.



6. There is no agreed method of incorporating such factors into the government accounts, since the cost to future taxpayers is usually highly uncertain, but the issue at stake is inter-generational fairness. Generally speaking, fiscal policy is not generationally balanced if future generations face a higher lifetime net tax burden (taxes paid minus transfers received) than do current newborns.<sup>4</sup> Generational accounting estimates are rather sensitive to various assumptions and methods used to project revenues and expenditure over long time horizons, so that single-figure estimates of generational imbalances should be taken with care (OECD, 1997). In addition, demographic effects may be rather small compared to the impact of new technologies and/or changes in people expectations on the level and quality of public services. This is particularly true for health care spending, reducing the case for pre-financing all the future increase in costs on the basis of intergenerational equity.

*Implicit liabilities associated with population ageing need to be incorporated...*

7. Securing sustainability and intergenerational equity through the pre-funding of pensions is, by far, the main reason for building up assets. Ageing will be a key factor putting pressures on public finances, and pensions in particular, over the next few decades. Implicit pension liabilities may be large. Recent projections for public spending on old-age pensions show an increase by almost 4½ percentage points of GDP among a panel of 26 OECD countries over the period 2005 to 2050 (Cournède, 2008; Dang *et al.*, 2001), but with considerable cross-country variations (Table 1). These projections assume unchanged policy settings, in particular regarding retirement age, benefit levels and mix between public and private pensions. Demographic developments will also affect tax revenues, though with a sign and strength which will largely depend on the taxation system for pensions.<sup>5</sup>

8. The only viable solution to the public finance consequences of rising longevity is to push back the age of retirement. However, pre-funding pension commitments can help in reducing future pressures on public finances in the context of finite shocks, such as the retirement of the ‘baby boom’ generation and any initial underfunding of pension commitments which may have occurred.<sup>6</sup> A first option is the reliance on pension funds (whereby assets are bought with the contributions to a pension plan and with members having a legal right or contractual claim against these assets). A group of seven countries (Australia, Finland, Iceland, Netherlands, Switzerland, United Kingdom and United States) clearly stands out, with assets of private pension funds amounting to more than 70% of GDP in 2006 (Figure 2).<sup>7</sup> Other countries have built Sovereign and Public Pension Reserve Funds (SPFs) to finance at least part of the implicit liabilities stemming from pay-as-you-go public pension schemes. Norway is a leader in this category, with

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4. Estimates for the degree of intergenerational imbalances by Kotlikoff and Leibfritz (1998) for 14 OECD countries for the mid-1990s showed that: i) current generations would bequeath enormous fiscal bills to their children in most countries; ii) the degree of imbalance in generational policy varies greatly across countries. Since the mid-1990s, however, most countries have launched reforms of their pension system and/or other public spending components, though not all equally ambitious, and the diagnosis has likely changed.

5. In the projections presented in Dang *et al.* (2001), Canada, Denmark and the Netherlands with large tax-sheltered private-sector pension schemes foresaw an increase in tax revenues from taxes paid on associated pensions. In several others (including Canada, Finland, Korea and Sweden), the impact of population ageing was seen as resulting in a decline in the tax-to-GDP ratio.

6. The 2005 reform of the Stability and Growth Pact specifically foresees to take into account implicit liabilities and discussions are currently going on how to incorporate the future cost of ageing into fiscal Medium Term Objectives (MTO) and on a common minimum degree of prefunding.

7. The importance of pension funds’ assets relative to the size of the economy gives an indication of the extent to which pension systems are funded. Interestingly, public spending on pensions is projected to fall as a share of GDP over the period for Poland and the United Kingdom, where shifts have taken place towards private pension arrangements.

SPF assets above 80% of GDP in 2006 but Sweden, Japan and Korea have also put aside a considerable amount of assets to pay future pensions. New Zealand's Superannuation Fund (2001) and Australia's Future Fund (2006) are also designed to meet the cost of public sector superannuation liabilities.

**Table 1. Long-term projections for public spending in key areas**  
Changes expressed in per cent of GDP (2005-2050)

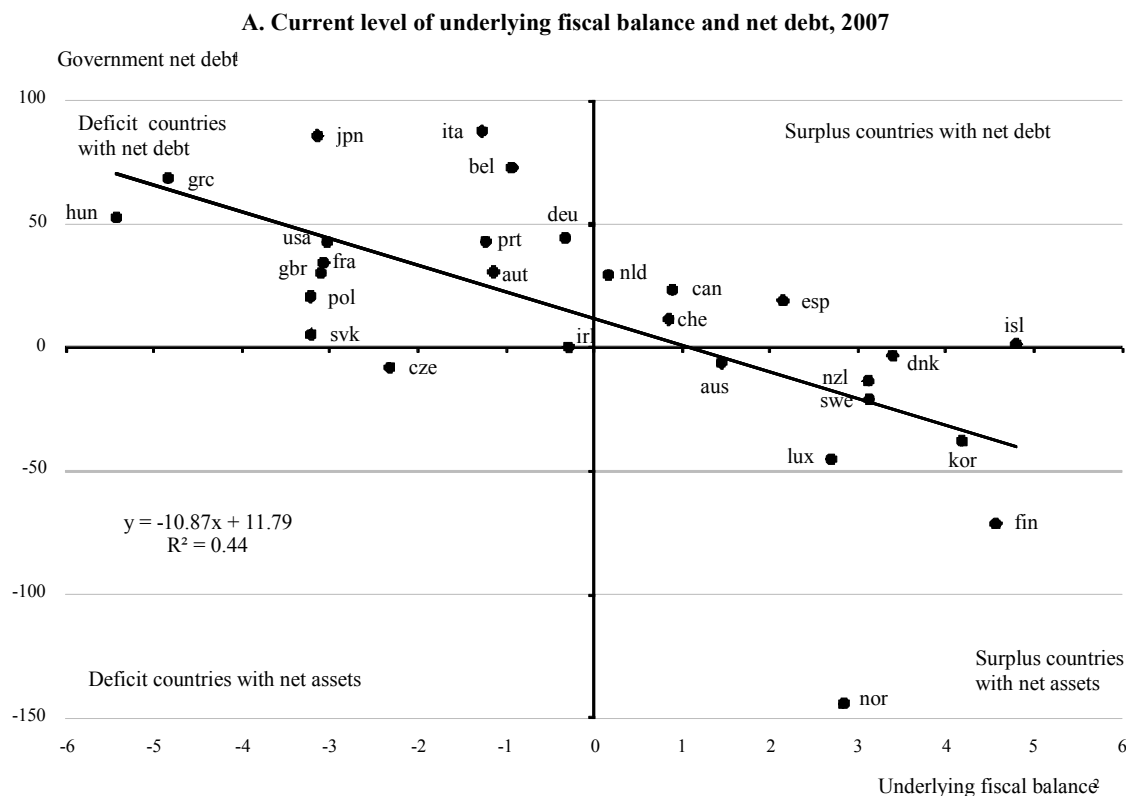
	Old-age pension <sup>1</sup>	Health and long-term care <sup>2</sup>		
		Pure demographic effect	Total increase <sup>3</sup>	
			Cost-pressure scenario	Cost-containment scenario
Australia	1.7	2.3	6.1	3.4
Austria	2.2	1.8	5.8	3.1
Belgium	5.1	1.0	5.2	2.6
Canada	1.7	1.9	6.2	3.5
Czech Republic	6.8	2.5	5.8	3.3
Denmark	3.2	1.0	5.0	2.4
Finland	3.3	1.8	6.0	3.1
France	2.1	1.5	5.3	2.7
Germany	2.0	1.3	5.5	3.0
Greece	10.3	1.4	6.6	3.9
Hungary	1.2	1.7	5.6	2.5
Iceland	..	1.4	5.6	2.7
Ireland	6.5	1.8	7.8	4.6
Italy	0.4	1.8	6.6	4.1
Japan	0.6	2.6	6.5	4.0
Korea	8.0	5.4	8.6	5.8
Luxembourg	7.4	1.5	6.9	3.8
Mexico	..	3.2	8.6	5.6
Netherlands	3.8	1.3	5.7	3.1
New Zealand	5.7	2.5	6.2	3.6
Norway	8.0	0.9	5.1	2.5
Poland	-2.5	3.0	7.3	3.6
Portugal	9.3	2.1	6.2	3.5
Slovak Republic	..	3.7	6.9	4.0
Spain	7.0	1.8	6.5	4.0
Sweden	0.8	0.3	4.3	1.5
Switzerland	3.6	0.8	4.9	2.3
Turkey	..	2.6	5.7	2.9
United Kingdom	1.7	1.3	5.5	2.8
United States	1.8	1.1	5.2	2.5
Average	4.2	1.9	6.1	3.4

1. See Courmède, "The political economy of delaying fiscal consolidation", Public Finance and Management, Vol. 8, Number 3, pp 306-343; For Australia, Austria, the Czech Republic, Hungary, Korea, New Zealand, Norway and Poland, see Thai-Thanh Dang, Pablo Antolin and Howard Oxley, "Fiscal implications of ageing: projections of age-related spending", OECD Economics Department Working Papers No. 305, September 2001. In this last document, the projections cover the period 2000-2050.

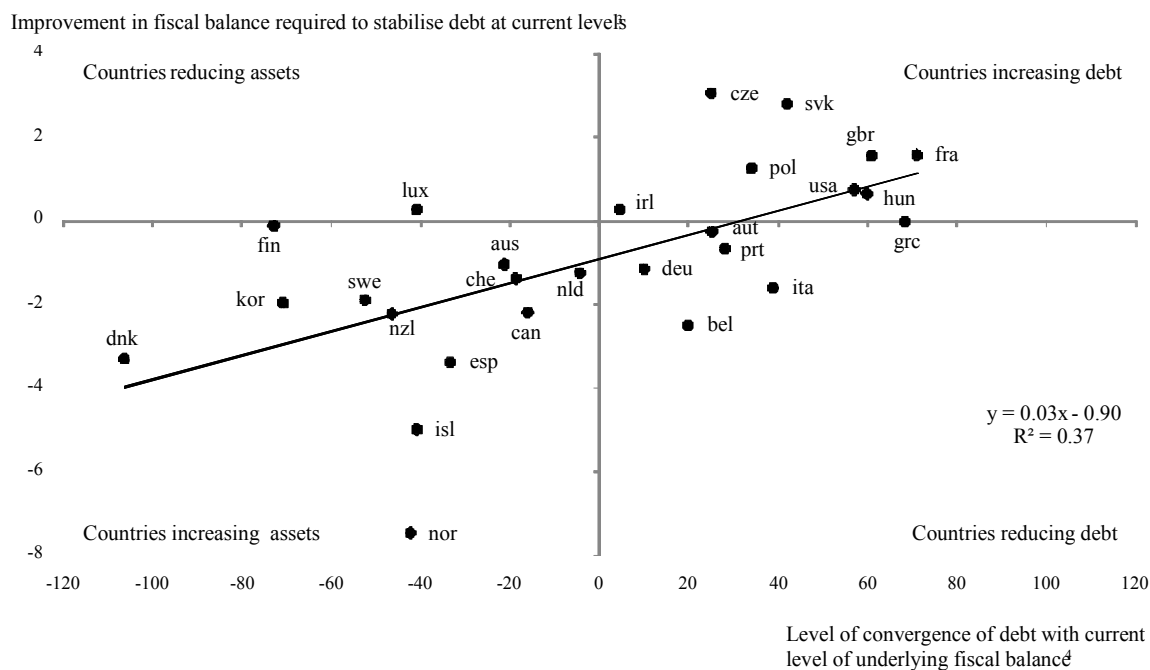
2. See Oliveira Martins and de la Maisonneuve, "The Drivers of Public Expenditure on Health and Long-Term Care: an Integrated Approach", OECD Economic Studies, No. 42, 2006.

3. The "cost-pressure" scenario assumes that, for given demography, expenditures grow 1 % per annum faster than income. This corresponds to observed trends over the past two decades. The "cost-containment" scenario assumes that some (unspecified) policy action is taken to curb this "extra" expenditure growth such that it is eliminated by the end of the projection period (2050).

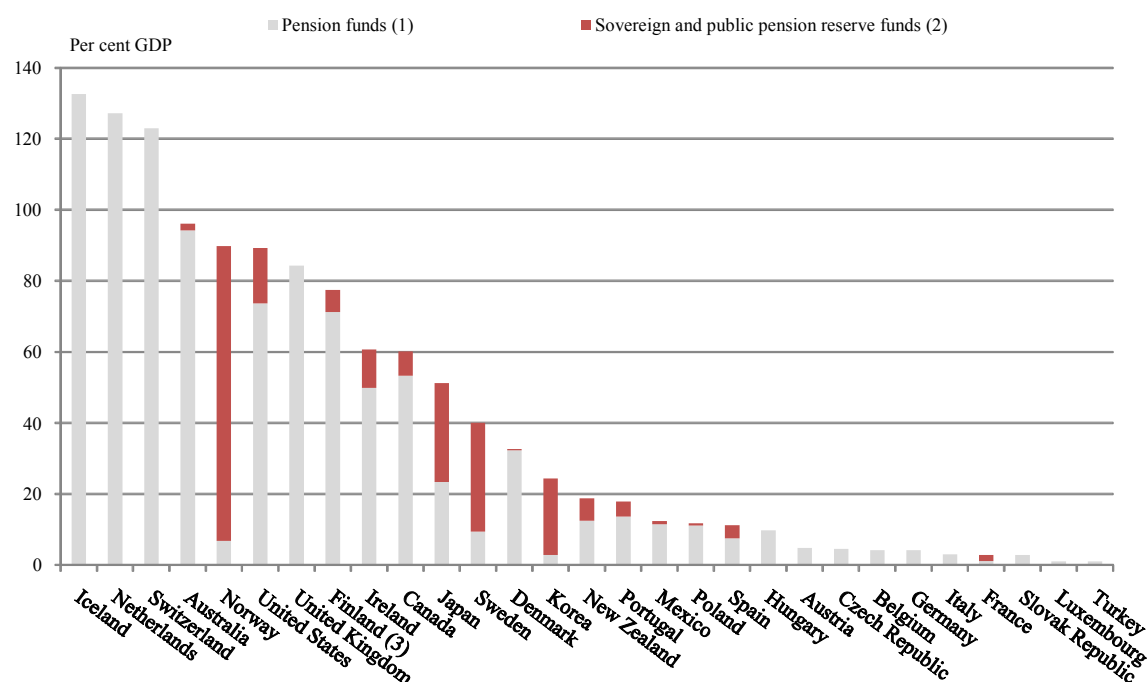
**Figure 1. Correlations between fiscal balances and net debt**



**B. Underlying fiscal balance and debt dynamics**



1. In per cent of GDP.
  2. Cyclically adjusted balance excluding one-off and other temporary measures expressed in per cent of potential GDP.
  3. Difference between the 2007 underlying fiscal balance and the level of the fiscal balance which would stabilise debt at the 2007 level, assuming a steady state nominal GDP growth equal to the 2007 potential GDP growth rate.
  4. Level to which net government debt would converge in the long run if the level of the underlying deficit were to remain constant in the future.
- Source: OECD EO84 database.

**Figure 2. Assets of pension funds and sovereign and public pension reserve funds**

1. Pension funds consist of a pool of assets forming an independent legal entity that are bought with the contributions to a pension plan for the exclusive purpose of financing pension plan benefits.
  2. Sovereign and Public Pension reserve funds (SPFs) are funds set up by governments or social security institutions with the objective of contributing to financing the relevant pay-as-you-go pension plans.
  3. Mandatory occupational pension plans for public and private sector workers are considered here as pension funds while in the National Accounts they are included into the general government sector.
- Source: OECD, Global Pension Statistics and OECD - Pension Markets in Focus - November 2007 - Issue 4.

9. Demographic effects are also projected to raise public spending on health and long-term care by 2 percentage points of GDP on average in OECD countries over the period 2005 to 2050 (Table 1). Combined with the other key drivers and in the absence of policy action to contain them, public spending on health and long-term care could rise from 6½ to almost 13% of GDP on average in OECD countries between 2005 and 2050, but with significant differences across countries (Oliveira Martins and de la Maisonnette, 2006). It should however be recognised that uncertainty surrounding the cost impact of technology and demography is rather high.

... contingencies allowed for...

10. Natural disasters, financial crises and other difficult to predict events may also have large fiscal consequences. The most serious contingent liabilities for the general government originate from the financial system in many countries (World Bank, 1998). They arise from explicit government guarantee on banking systems (e.g. through a public deposit insurance scheme) or when governments try to limit the loss of confidence in the financial system during period of financial turmoil by taking over or guaranteeing liabilities which are not formally protected. Experience from the 1990s suggests that the fiscal costs can be large. According to Claessens and Klingebiel (2000), these costs amounted to more than 10% of GDP in

Finland in the early 1990s and to about 20% of GDP in Japan between 1992 and 2000.<sup>8</sup> The impact of the present crisis on gross government liabilities is likely to be substantial, but the impact on *net* debt particularly uncertain where governments are acquiring assets which are difficult to value.

11. Pollution and climate change may also have large, but highly uncertain, repercussions on future budgets, *e.g.* in the form of temporary financial assistance to displaced persons and infrastructure repair in the wake of catastrophic events.

*... and commodity-related revenues smoothed*

12. Several countries benefit from sizeable revenues linked to commodity extraction, which raises issues of intergenerational equity insofar as allowance needs to be made for the eventual exhaustion of non-renewable resources. This is an argument for building up corresponding net financial assets.<sup>9</sup> The mining sector represents a substantial share of GDP in several OECD countries, especially in Norway, Mexico, Australia and Canada, and, to a lesser extent, Denmark and the Netherlands (Figure 3). Long-term prospects for commodity-related fiscal revenues differ substantially across countries. Norway and Denmark's proven oil reserves-to-production ratios are estimated at less than ten years (BP, 2007).<sup>10</sup> Though proven reserves usually underestimate the quantity of oil that countries will be able to extract, oil production in the North Sea is probably close to its peak and is expected to decline gradually. On the other hand, Australia enjoys huge reserves of a variety of commodities (including coal, natural gas, uranium, iron ore, copper, nickel and zinc), most of which at current extraction rates will not be depleted before hundreds of years. These differences call for specific fiscal provisions, especially from an intergenerational equity standpoint.

13. Fluctuations in the price of resources – both renewable and non-renewable – raise a second issue, relating to the treatment of “windfall gains”. The surge in oil and commodity prices from 2003 onwards has translated into sizeable additional fiscal revenues. In Norway, oil-related government revenues have amounted to about 20% of mainland GDP over the last three years compared with an average of less than 7% over the 1990s. In Mexico, oil-related revenues amounted to about one third of government receipts in 2007. Fiscal revenues from North Sea oil and gas have increased by around 1% of GDP in Denmark (OECD, 2008b) and about ½ per cent of GDP in the Netherlands since 2000 (OECD, 2006b and 2008c). Favourable terms-of-trade compared to their long-term average are also estimated to have improved the Australian surplus by 2.3% of GDP and the Canadian and New Zealand position by about 1½ per cent in 2007.<sup>11</sup>

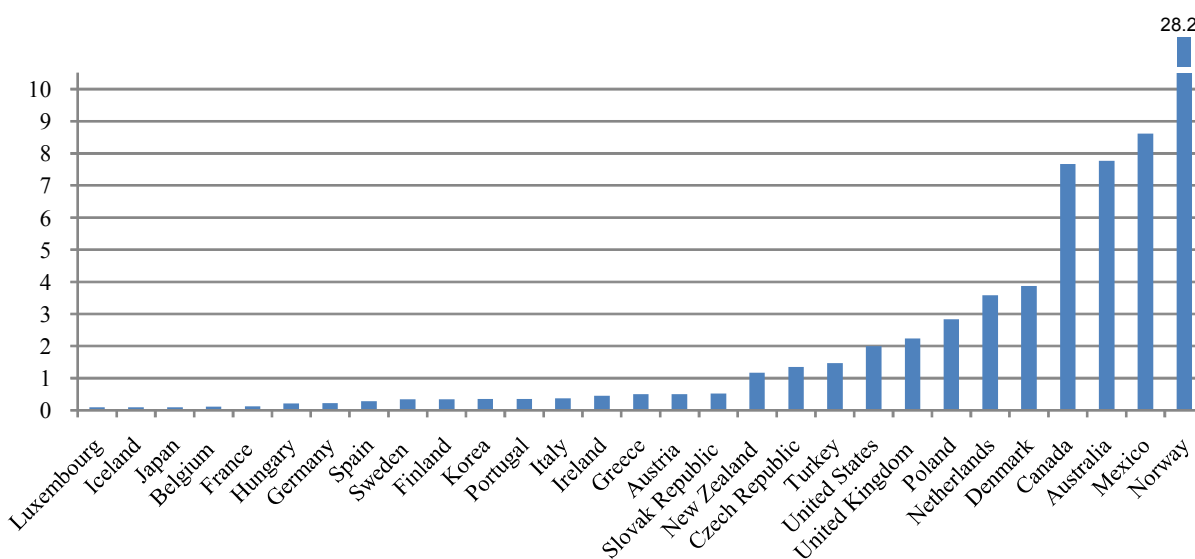
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8. OECD (2008a) provides more detailed information on the fiscal costs of past financial crises and the impact on public finances of rescue plans for financial institutions announced in 2008.

9. In principle, investment should produce returns sufficient to offset declining stocks of non-renewable resources, so that the standard of living does not fall as society moves into the indefinite future – Hartwick's rule (Hartwick, 1977). This requires that a nation invests all rent earned from exhaustible resources currently extracted, where “rent” is defined along paths that maximise returns to owners of the resource stock.

10. Norway has 33 years of reserves of natural gas. However, natural gas revenues are currently only a fraction of oil revenues.

11. To estimate the contribution of the commodity price boom to government revenues in countries where the terms-of-trade improvement is related to a variety of commodities, Turner's (2006) methodology has been applied. This methodology adjusts fiscal balances for deviations in the terms-of-trade from their long-term average, assuming that terms-of-trade for non-oil commodity producing countries revert to their long-term average in the medium-term, which has broadly been the case in the countries concerned over the last 30 years.

**Figure 3. Value added in the mining and quarrying industry**Per cent of total value added, 2006<sup>1</sup>

1. Or latest year available: 2005 for Denmark, Iceland, Portugal and the United Kingdom; 2004 for Canada and Sweden; 2002 for New Zealand.  
 Source: OECD National Accounts, Statistics Canada and INEGI for Mexico.

14. Countries whose revenues are sensitive to terms-of-trade changes have the problem of distinguishing temporary from structural changes in relative prices. Some, like Chile, Norway, Mexico, and Russia, have established stabilisation funds to deal with the possible windfall nature of such gains. In addition to transmitting natural resource wealth to future generations, these funds play a key role in stabilising the exchange rate and shielding the economy from overheating due to excessive spending during commodity price booms. Investing the bulk of wealth fund assets in foreign currencies helps to avoid real exchange rate appreciation induced by commodity booms and the associated loss of competitiveness in the tradeable sectors – the so-called Dutch disease.

***Allowing for a selection of key factors, fiscal prospects are highly differentiated***

15. Table 2 provides a qualitative overview of the strengths of each OECD country on the different criteria described above, based on positions in 2007.<sup>12</sup> The main features are:

- Among countries with surpluses and net asset positions or very limited government debt, budget positions differ substantially when long-term fiscal commitments and resource prospects are allowed for. The number of economies whose surpluses might be in excess of needs is rather small. Of those countries identified above as having a strong surplus-and-net asset position, Australia, Canada and Switzerland also enjoy relatively balanced long-term prospects, in

12. The aggregate OECD underlying balance to GDP ratio is projected to deteriorate in 2008 by around one percentage point, as some countries take discretionary action which it is assumed will be temporary. More difficult to assess is the extent to which underlying balances may have been overstated in 2007 because tax revenues have been particularly buoyant during the cyclical upturn, as a result of strong corporate profits, capital gains and rising house prices. The reversal of these factors may imply a larger adjustment in revenues than implied by the model elasticities used to calculate the underlying balances. Girouard and Price (2004) describe the effects of large asset-market related fluctuations in government revenues on underlying fiscal positions during the upturn and ensuing downturn of the 1995-2001 period.

particular because they have accumulated sizeable assets in pension funds. Australia and Canada are also likely to continue benefiting from natural resources which will deplete very slowly, but with some uncertainty attached to the long-run global price of such resources. In the Nordic countries, public spending on pensions and health care is expected to rise fairly moderately but be cushioned only modestly – or not at all in the case of Norway – by private pension funds. For Korea, New Zealand and Luxembourg, fiscal surpluses and net asset positions have to be seen in the context of relatively sharp prospective increases in public pension and health care expenditure. The Netherlands, which has a balanced budget, is better placed in that regard. Ireland has accumulated sizeable assets in pension funds.

- Those OECD countries whose budgetary starting point is less favourable face differing longer-term prospects and commitments. Of those economies where the net debt ratio is high and increasing, the United States and United Kingdom have smaller off-balance sheet pension liabilities than France or the smaller central European economies. Germany and Italy, where net debt has been falling, also have large implicit liabilities, though these have been reduced by recent reforms.

### ***Macro-economic rationales for keeping the underlying budget in balance or surplus***

16. Once longer-term liabilities are accounted for, what are the macro-economic rationales for governments to accumulate net debt or net assets? Contrary to monetary policy, where a broad consensus on the necessity to target low and stable inflation has emerged – even though operational definitions might differ across central banks – there is currently no clear consensus on the long-term objectives of fiscal policy. Various criteria can co-exist with potential conflicts among them. The standard approach, deriving from the government budget constraint as applied to government consumption, would argue for a budget in long-term balance. However, considerations of domestic saving (in)adequacy may argue for some adjustment to that rule: in principle, capital market imperfections may prevent individuals from translating future disposable income into efficient current spending decisions, leading either to a structural excess of saving in the economy if individuals are credit-constrained (so that there may be a case for compensating government borrowing) or to excessive national dissaving (visible in unsustainable current account imbalances), which would argue for structural budget surpluses. In either case, private saving behaviour may even be affected – or distorted – by taxes, transfers or government regulation.

Table 2. Relative positions of countries using various indicators

	Underlying fiscal balance <sup>1</sup>	General government net financial liabilities <sup>2</sup>	Long-term projections for public spending		Assets of pension funds <sup>5</sup>	Natural resources <sup>6</sup>
			Old-age pension <sup>3</sup>	Health and long-term care <sup>4</sup>		
Australia	***	***	***	**	***	***
Austria	*	*	**	**	*	
Belgium	**	*	*	***	*	
Canada	***	**	***	**	**	***
Czech Republic	*	***	*	*	*	
Denmark	***	***	**	***	**	*
Finland	***	***	**	**	***	
France	*	*	**	**	*	
Germany	**	*	**	***	*	
Greece	*	*	*	***	*	
Hungary	*	*	***	**	*	
Iceland	***	**	na	***	***	
Ireland	**	**	*	**	**	
Italy	*	*	***	**	*	
Japan	*	*	***	*	**	
Korea	***	***	*	*	*	
Luxembourg	***	***	*	**	*	
Mexico	na	na	na	*	*	**
Netherlands	**	**	**	***	***	*
New Zealand	***	***	*	*	*	
Norway	***	***	*	***	*	**
Poland	*	**	***	*	*	
Portugal	*	*	*	**	*	
Slovak Republic	*	**	na	*	*	
Spain	***	**	*	**	*	
Sweden	***	***	***	***	*	
Switzerland	**	**	**	***	***	
Turkey	na	na	na	*	*	
United Kingdom	*	*	***	***	***	*
United States	*	*	***	***	***	*

Note: na stands for "not available".

1. The underlying fiscal balance is the actual fiscal balance adjusted for one-off and cyclical factors.

\*\*\* corresponds to an underlying fiscal balances greater than 1, \*\* between -1 and 1, \* lower than -1 % of GDP in 2007.

2. \*\*\* corresponds to positive net financial assets, \*\* to net financial liabilities between 0 and 30 % of GDP, \* to net financial liabilities greater than 30% of GDP in 2007.

3. \*\*\* corresponds to an increase in public spending of less than 2% points of GDP between 2005 and 2050, \*\* an increase from 2 to 5% and \* an increase over 5 %.

4. \*\*\* Corresponds to an increase in public spending resulting from the pure demographic effect of less than 1.5% points of GDP between 2005 and 2050, \*\* to an increase from 1.5 to 2.4%, \* to an increase over 2.4%.

5. \*\*\* corresponds to assets amounting to over 60 % of GDP, \*\* between 60 and 20 % of GDP, \* less than 20 % of GDP.

6. \*\*\* and \*\* correspond to an estimated contribution of natural resources to fiscal revenues of more than 2% of GDP, with respectively huge and limited reserves (less than 40 years at current depletion rates), \* modest contribution from natural resources to the budget.

Source: See footnotes to Table 1 and Figures 2; OECD Economic Outlook 84 database and OECD Secretariat estimates.

### *Arguments for longer-run budget balance*

17. The principal argument for not allowing variations in the underlying budget balance to lead to a build up in net debt (in other words, for a budget which is balanced over the cycle) is one of intergenerational equity: government debt is equal to the net present value of future taxes required to



service debt, so it represents a transfer from future to present taxpayers. A government which financed spending by running a budget deficit would have to run a permanent primary surplus to finance the debt, so future public spending would have to be cut or taxes raised (Annex). In the (benign) Ricardian case, the perception of higher future taxes (accompanied by intergenerational altruism) may have immediate negative effects on private consumption expenditure, which would make debt-finance the equivalent of tax-financed expenditure (debt neutrality or Ricardo-Barro effect). On that issue, the evidence is unclear and controversial, but the effects seem to be country-specific and institutionally driven. OECD research (De Mello *et al.* 2004) suggests that changes in fiscal positions are often associated with inverse movements in private saving, but the picture is not uniform across OECD economies (Figure 4). One relatively robust conclusion in the literature is that Ricardian equivalence is more likely to hold where governments are highly indebted (Berben and Brosens, 2007).

18. Where the private saving offset is partial or incomplete, higher government consumption would push up interest rates and crowd out interest-sensitive private spending, including investment, so government borrowing influences the composition of both spending and the capital stock. There is a vast literature, often controversial, on the impact of government borrowing on interest rates. But the period since 2001 has been one of exceptionally low funding costs for governments, which has substantially eased both the government budget constraint and the danger of crowding out, at least in the short run: where the nominal implicit interest rate on public debt is lower than the growth rate, the government does not have to run future primary budget surpluses to service debt (Annex). The incentive for fiscal consolidation may have been reduced as a result. However, it does not mean that the government budget constraint has disappeared permanently, there being the possibility – even the probability – that interest rates may have been unsustainably low (Ahrend *et al.* 2006).

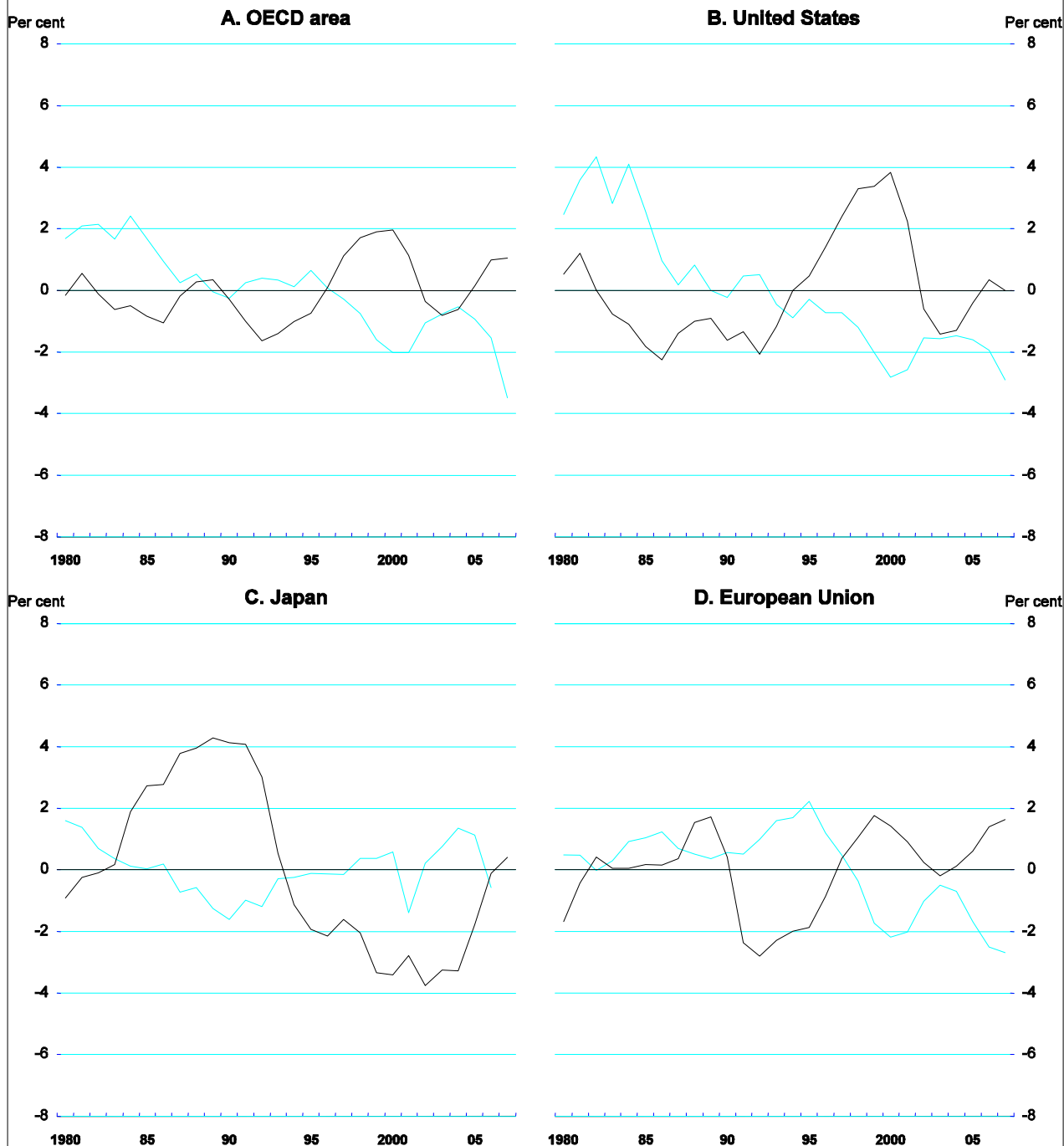
*Government saving may be needed if national saving is too low*

19. The traditional argument for deviating from a long-run budget balance rule has been that individuals may be credit constrained. Disregarding the current period of global financial turbulence, with liberalised capital markets that rationale would seem to have been weakened in recent years. Indeed, where interest rates are abnormally low, and that reduces private saving, there may be a case for governments to run underlying surpluses. That could be so where saving decisions are distorted by tax or regulatory incentives due to governments themselves or by artificially low risk premia. The outward manifestations of deficient domestic saving could emerge in inflation or the build-up of external debt which could threaten currency stability.

20. In Australia, New Zealand and Canada, strengthening budget positions has helped stabilise the national saving rate and external balance (Gruen, 2005). Loosening fiscal conditions in these countries could lead to deterioration in external accounts, which could be a concern, especially for Australia and New Zealand, which already have high net foreign liabilities (about 60% of GDP in Australia and more than 80% in New Zealand at the end of 2007). In these countries, high net external liabilities could partly explain a relatively high cost of capital compared to most other OECD countries (Cameron *et al.*, 2007).

**Figure 4. Private and public saving in the main OECD areas**  
Deviations from average

— Private saving in per cent of GDP  
— Underlying fiscal balance in per cent of potential GDP



Source: OECD EO84 Database.

*A government net asset position may facilitate stabilisation policy*

21. Building-up of net government assets may have stabilisation objectives. Some countries have created specific domestic stabilisation funds, in part to facilitate counter-cyclical fiscal policy and smooth taxes. The introduction of “buffer funds” for unemployment insurance and earnings related pension schemes in Finland, just before the country joined the euro area, is a case in point. Their main objective was to smooth social security contributions over the business cycle and to prevent the need for pro-cyclical changes. Most US states also have stabilisation (“rainy day”) funds. The size of counter-cyclical stabilisation funds tends to remain relatively small, however.<sup>13</sup>

22. How large net assets need to be for stabilisation purposes is difficult to judge going forward. In principle, built-in stabilisers should be symmetric, with surpluses at above trend output offsetting deficits below, obviating the need for any significant fund. However, in practice, governments trying to balance the budget at potential output would have tended in the past to build up debt, because there have been more years when the output gap has been negative than positive. If that were assumed to obtain in the future, there would be a case for a larger rainy day fund, or for the budget to be in slight surplus at potential output, to prevent net debt accumulation over the cycle.

**Options when surpluses are in excess of requirements***Using surpluses to reduce taxes*

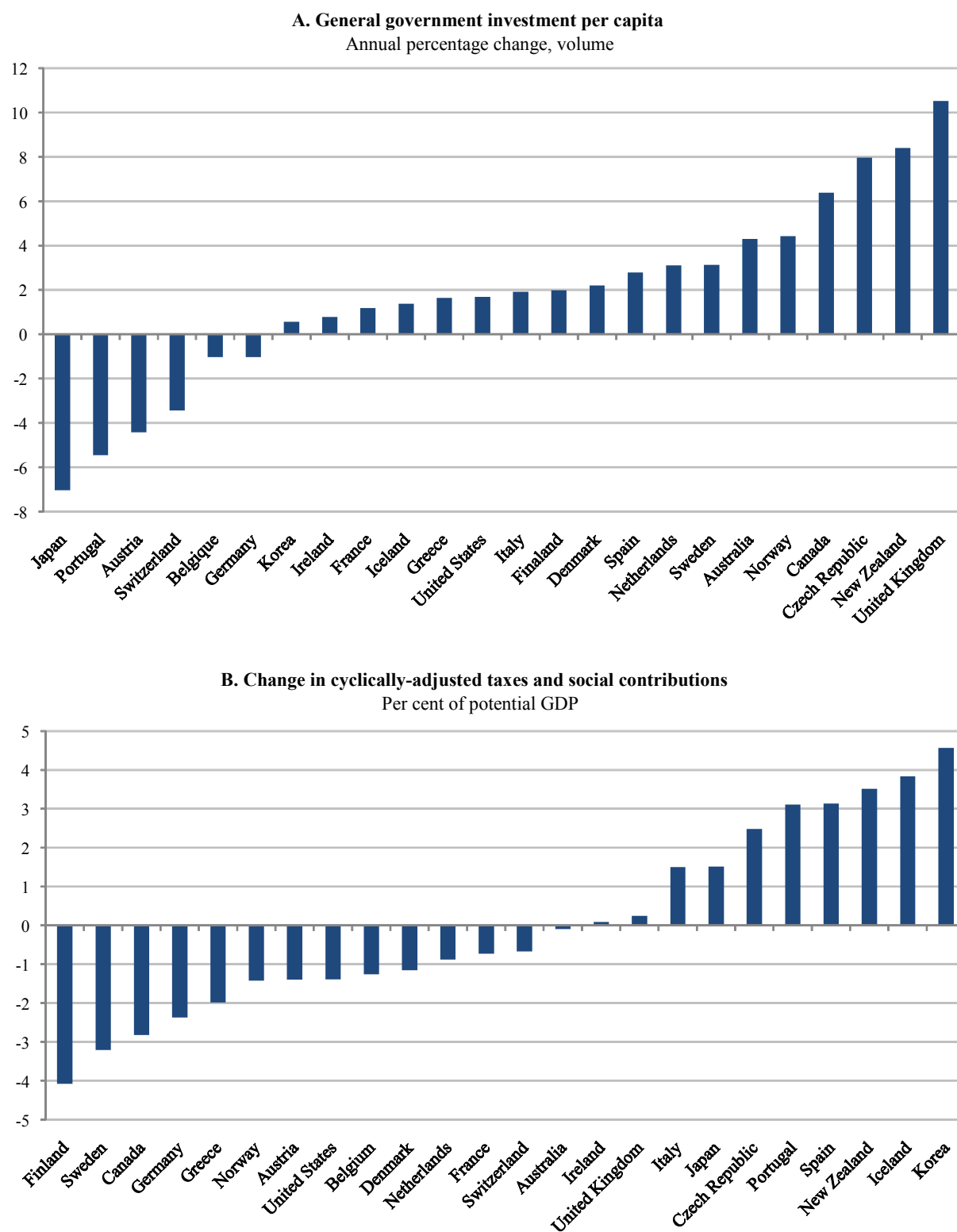
23. In choosing how to adjust excess government saving an important consideration is the opportunity cost of not reducing taxation. The theory lays down that the marginal cost of taxation should match the marginal social benefit of public spending, but that is easier to state than to apply.<sup>14</sup> Cutting taxes, especially those that are most distortive and detrimental to growth, could improve the growth potential of the economy. Since 2000, tax and social security contribution receipts – corrected for cyclical influences – have been reduced as a share of GDP in several of the OECD countries which have accumulated surpluses. Most Nordic countries and Canada have followed this option, while some others have resisted it (Figure 5, Panel B). Nevertheless, in many countries the level of taxation can be considered an obstacle to stronger economic growth (Afonso *et al.*, 2005; Feldstein, 2006).

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13. In Finland, the statutory authorised size was set at ½ per cent of GDP for both funds. Most rainy day funds in the United States are capped (often to below 2 to 10% of the state’s fiscal revenues).

14. In principle, cutting taxes reduces the marginal cost of public funds, which should price in marginal investment projects which were excluded at the original equilibrium cost (However, in practice, the original situation may not have been an equilibrium one).

Figure 5. Changes in government investment and taxes across OECD countries between 2000 and 2007



Source: OECD EO84 database.

24. In addition to the level of taxes, the structure of the tax system affects decisions of households to save, supply labour and invest in human capital and decisions of firms to produce, create jobs, invest and innovate (Johansson *et al.*, 2008). Hence, from an economic efficiency perspective, tax reductions should focus on the most distortive taxes. Here the empirical evidence suggests a “tax and growth ranking” with recurrent taxes on immovable property being the least distortive tax instrument in terms of reducing long-run GDP per capita, followed by consumption taxes (and other property taxes), personal income taxes and corporate income taxes. Corporate and capital taxes may affect productivity negatively, notably by reducing investment through a higher user cost of capital, while high marginal tax rates for personal taxes tend to discourage entrepreneurship and investment in human capital. Labour taxes have an adverse effect on labour supply, especially from low-skilled workers and second-earners. In an increasingly globalised economy, high taxes might discourage foreign direct investment and encourage off-shoring.

25. Modifying the tax system also involves equity-efficiency trade-offs as well as enforceability and compliance issues, which need to be taken into account (Van den Noord and Heady, 2001). Governments should also be cautious not to enact permanent tax cuts as a response to temporary tax windfalls (Joumard and André, 2008). Moreover, tax adjustments when the accounts are in surplus run the risk of being driven by political motives rather than efficiency considerations (a reason for eliminating surpluses but also one to exercise care in doing so). This is particularly true in pre-election years, when political pressures to redistribute surpluses by reducing taxes tend to be strong. The same political economy considerations apply to cuts in expenditure, so it is unclear which way the bias lies.

***Growth-enhancing public expenditure might be financed by borrowing***

26. The premise that fiscal policy should aim at zero net government debt or that future generations should not face a higher tax burden is debatable if future generations can be expected to have higher incomes on account of economic growth. Thus, for some countries the choice may exist of moving from a net asset to a positive debt-to-GDP ratio. In particular, there is evidence that spending on education, health, R&D and public infrastructure may be growth enhancing (Box 1). However, even though in this case the budget constraint might be relaxed, the fact that the government return is a function of the tax rate times the rate of return on investment means that there may eventually be an extra burden for taxpayers (see Annex). Moreover, non-economic benefits which may be included in the social rate of return on public spending (which may emerge from better health, more social cohesion and more informed and effective citizens for example) can only affect the budget constraint *via* their indirect effects on growth.

27. The funding of public investment is sometimes singled out for special treatment in terms of justifying government net debt issuance. Returns on public investment may be high and complementary to private investment (*e.g.* roads), as well as being distributed over time.<sup>15</sup> Bottlenecks in infrastructure have been identified in some countries as an impediment to growth, making a case for additional spending. For example, as a result of the recent commodity boom, Australia has seen an increase in tax receipts, while facing pressure on the infrastructure supporting the industries which have benefited from the relative price shock. Hence, the terms-of-trade shock has both provided additional revenues to the government and increased expected marginal social benefits from public investment, justifying targeted infrastructure spending.<sup>16</sup> However, recent OECD research suggests that the contributions of infrastructure to long-run

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15. Canning and Bennathan (2000) find that certain types of infrastructure capital are highly complementary with other physical capital and human capital, but have rapidly diminishing returns if increased in isolation. The complementarities on the one hand, and diminishing returns on the other, point to the existence of an optimal mix of capital inputs, making it very easy for a country to have too much – or too little – infrastructure.

16. Australia has created new funds to finance future collective expenditure: the Building Australia Fund for investment in national roads, rail and ports and broadband; the Education and Investment Fund for capital

output levels and growth are not homogenous across countries and in some countries infrastructure appears to have a lower impact on growth than ordinary private investment (Sutherland *et al.*, 2008).

### Box 2. Government spending and growth

*Education and childcare:* Better educated populations have more ability to innovate and use new technologies, and human capital is widely recognised as a major determinant of economic growth. However, several studies show that the quality of education – measured by test scores, such as PISA scores – is more important than the quantity – measured, for instance, by years of schooling (Barro, 2000; Hanushek and Wößmann, 2007). Whereas increases in public spending on education may be warranted in some countries – e.g. Australia, Ireland, Mexico (OECD, 2008e), Chile (OECD, 2008d) – education policies should generally focus on improving efficiency. Indeed, empirical evidence has revealed that significant improvements in educational outcomes could be achieved by adopting better policies (OECD, 2008e). Improving access to childcare is also an objective for several countries – Australia, Germany, Ireland, Korea and New Zealand – as it tends to increase female labour force participation (OECD, 2008e; Jaumotte, 2003).

*Research and development (R&D)* is also a key driver of growth and competitiveness. But several factors may preclude private investments from reaching socially optimal levels in this field: results are highly uncertain, firms often face difficulties in appropriating the economic benefits of investments and spill-over effects imply that the benefits to society generally exceed the private returns accruing to individual firms. Therefore government involvement in R&D is often important. Nevertheless, public spending is only one of the levers to promote innovation. Appropriate framework policies – including product market regulation, intellectual property rights and openness to foreign direct investment – are probably as important as public funding in determining R&D intensity in OECD countries (OECD, 2006c).

*Infrastructure:* adequate infrastructure – transport, energy, water, communication – is usually regarded as crucial for economic growth. High quality infrastructure increases private-sector productivity. This may lead to increased private investment (crowding-in effect). On the other hand, expanding public investment may cause crowding-out effects on private investment through higher taxation or interest rates. While empirical evidence on the overall impact of infrastructure investment on growth is mixed, shortages of particular types of infrastructure might exist in several countries. Indeed, improving infrastructure is considered as a priority in Canada, Ireland, New Zealand, Poland and the United Kingdom (OECD, 2008e and 2008f). Bottlenecks have also been identified in Australia (Exports and Infrastructure Taskforce, 2005). In practice, government investment *per capita* has increased substantially in real terms in several OECD countries – including many countries with surpluses and low debt – over the last economic cycle (Figure 5, Panel A). Though infrastructures are often publically-owned, a number of infrastructure companies have been privatised over the last two decades in some countries. Furthermore, Public-Private Partnerships have been developed in a number of countries (e.g. European Commission, 2003; Sutherland *et al.*, 2008). As well as reducing the need for public financing, allowing for more private investment in infrastructure can improve efficiency through increased competition and avoid potential misallocation of resources often associated with public investment (pork barrel spending). But it also raises challenging organisational and regulatory issues (OECD, 2007c).

1. Aschauer (1989) establishes a link between infrastructure investment and productivity growth in the United States. But subsequent research has questioned this finding (Gramlich, 1994). Afonso and St. Aubyn (2008) find both cases of crowding-in and crowding-out in a sample of OECD countries.
2. In this figure, government investment refers to the National Accounts definition, *i.e.* excludes items such as Education or Research and Development.
3. Infrastructure companies are often publically owned because of their natural monopoly characteristics – large fixed costs relative to marginal costs – which imply that it is only profitable for one company to operate in the market. But recently competition has been introduced on contestable segments of the markets, *i.e.* services as opposed to the network.

28. The treatment of government investment for the operation of fiscal policy is sometimes formulated in terms of the “golden rule” – the government can borrow only to invest and not to fund current spending. It is often claimed that the golden rule will allow benefit-yielding public investments to be carried out, where under a more traditional balanced-budget rule the burden of fiscal adjustment has tended to fall disproportionately on investment (Blanchard and Giavazzi, 2004). In practice, however, it is

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expenditure in higher education institutions; the Health and Hospitals Fund for hospital refurbishment and major medical research facilities and projects. The Future Fund brings together money from privatisation proceeds and the fund that pays for public servants superannuation liabilities.

not straightforward to single out these expenditures and some types of public investment may have a negative net present value. On the other hand, including investment in human capital or other types of spending which have a growth-enhancing effect would make the definition of investment impracticably wide (Fatás, 2005; Baumann and Kastrop, 2007).

29. Given the difficulty in identifying an operational golden rule, public investment choices need to be dealt with on an individual cost-benefit basis. The problem is to establish institutions which ensure that costs and returns are aligned properly, with respect to the public and private sector, with respect to the generations that will benefit and within the public sector itself, in terms of the different layers of government. Countries without well defined rules as to the financing of public infrastructure, or where the rules are biased in one way or another, can suffer from capital misallocation.

### ***Timing issues***

30. Timing issues are important to prevent a running down of surpluses from causing overheating, or to prevent an unwelcome ratcheting up of government spending or a pro-cyclical reduction in taxes. This is particularly true in countries facing positive terms-of-trade shocks – such as Australia recently – which boost fiscal revenues and private demand at the same time, fuelling inflationary pressures. Several mechanisms may help in keeping an appropriate stance within a stable fiscal framework, while adjusting the medium to long-term levels of revenues and spending. Earmarking exceptional receipts in special funds for progressive investment is one way of avoiding pro-cyclical spending (with the pros and cons discussed above).

31. Fiscal rules may also play a role, but again the rule needs to be specified carefully to prevent mistiming. The Norwegian rule of a central government non-oil structural deficit target of 4% of the assets of the Government Pension Fund (GPF) does not entail systematic countercyclical action. However, it may at times imply an expansionary fiscal stance, as recently when the GPF has been growing much faster than GDP. Alternative fiscal rules that avoid this, such as a growth adjusted rule or a permanent income rule have sometimes been recommended (Jafarov and Leigh, 2007).<sup>17</sup> Whatever the rule applied, there is the danger of misallocation, since the planning of programmes such as health care or education should not be conditional on surplus resources becoming available. Moreover, the experience of some OECD economies shows that additional resources can increase costs and impede efficiency.

## **Government portfolio choices**

### ***The case for paying back debt***

32. While the above discussion has been in terms of net debt, in practice the indicator which is monitored is often *gross debt*, as it is usually easier to measure given the uncertainty surrounding asset values. Moreover, managing gross debt is important for fiscal sustainability. First, gross debt appears to be more relevant than net debt for gauging the impact of public borrowing on financial markets (Fatás, 2005).<sup>18</sup> Indeed, according to the portfolio balance model, excessive public borrowing leads to higher

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17. The growth-adjusted rule aims at stabilising the wealth fund in terms of GDP, rather than in real terms (hence the 4% real return is replaced by a growth-adjusted return of 4% minus the real GDP growth rate). Under the permanent income rule, the central government non-oil structural deficit target is set at a level which allows deficits to remain constant as a share of GDP once oil reserves are depleted.

18. This was especially so in the era of high inflation and its aftermath. Bond issuance can be a source of government revenue, reducing pressure on ordinary taxes where it is matched by money creation by the central bank. The high inflation of the 1970s and early 1980s made the inflation tax substantial (OECD, 1988).

interest rates, adversely affecting the government budget constraint. Secondly, it would appear, also, that public perceptions of gross indebtedness are most relevant to the question of Ricardian responses to fiscal actions. Finally, it is gross debt that is subject to default risk, which has occurred in the past *via* the “inflation tax”: in that case, it is gross debt that would be expected to affect inflation expectations.

33. Fiscal consolidation thus most frequently focuses on gross government debt-to-GDP ratios (*i.e.* the ratio of total financial liabilities to GDP). Gross debt ratios have been stabilised or cut back in a majority of OECD countries since the mid-1990s, though this is not actually reflected in the OECD average (Figure 6). Japan, Norway and to a lesser extent Korea, Germany and France are the exceptions. Most of the OECD countries that have built up large asset portfolios since the early 1990s (Figure 7) have done so after, or while reducing gross liability ratios, usually to below average levels (Australia, Finland, Iceland, Korea, New Zealand and Norway). Some countries using surpluses to pay down debt (*e.g.* Denmark and the Netherlands) have also reduced their general government assets as a share of GDP (Figure 8).

34. While reducing their total debt ratio, most OECD countries also have significantly reduced the share denominated in foreign currency, making them less exposed to exchange rate risks. This development possibly reflects the fact that some benefits from issuing debt in foreign currency have become less important (Wolswijk and de Haan 2005). Most notably, while small countries with a narrow domestic investor base have tended to rely on bond issues in foreign currency to attract international investors (*e.g.* Iceland, Turkey), the introduction of the European Single currency has reduced this need for several countries (*e.g.* Finland).<sup>19</sup> At the same time, greater discipline in fiscal policy and increased credibility of monetary policy have reduced the need for foreign currency issuance as a device to safeguard investors from unexpected government-generated domestic inflation. Some countries, however, continue to issue limited amounts of foreign currency debt for the purpose of portfolio diversification and/or maintaining adequate foreign exchange reserves, as described below.

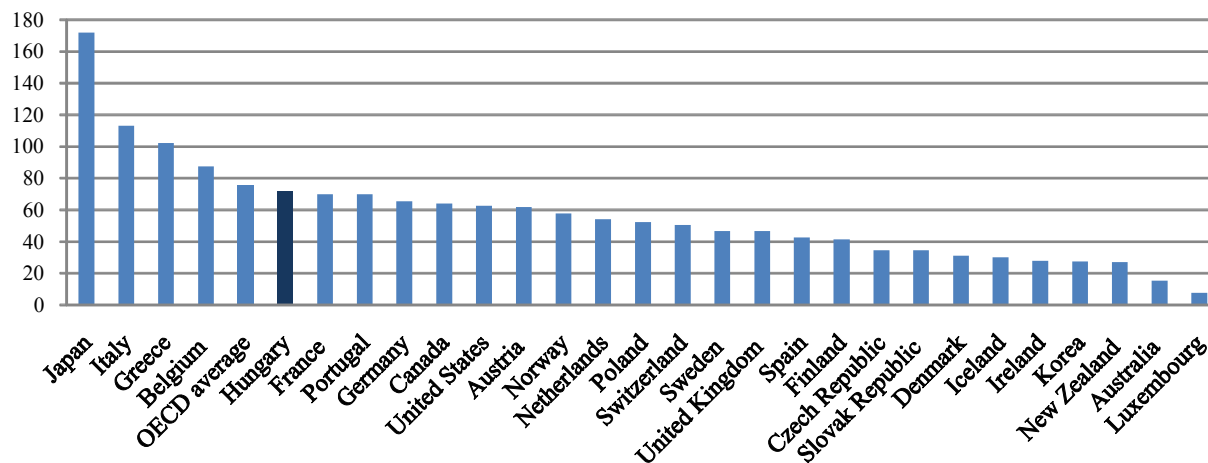
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19. The share of debt issued in foreign currencies has dropped, or even disappeared, in most euro countries. For instance, in 1995, 57% of the total government bonds outstanding of Finland were denominated in foreign currency. By the end of 2007, however, all of the foreign-currency bonds had been retired.

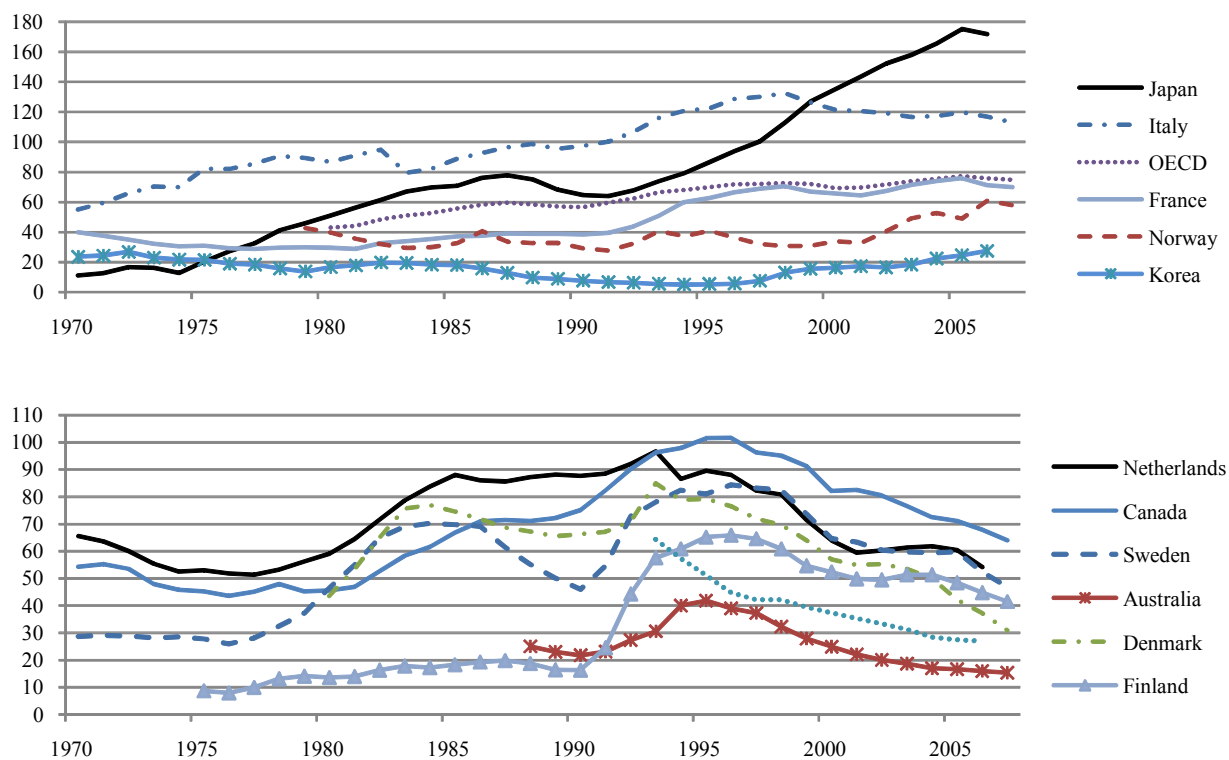


**Figure 6. General government gross financial liabilities**  
Per cent of GDP

A. 2007 level<sup>1</sup>



B. Trends in selected OECD countries



Note: Gross debt data are not always comparable across countries due to different definitions or treatment of debt components.

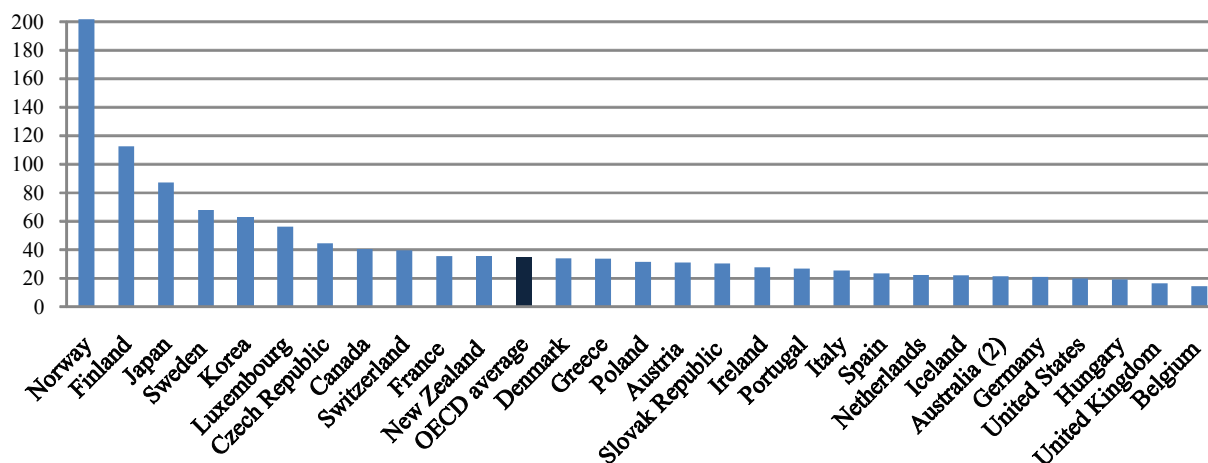
Notably, they include the funded portion of government employee pension liabilities for some OECD countries, including Australia and the United States. The debt position of these countries is thus overstated relative to countries that have large unfunded liabilities for such pensions, which according to ESA95/SNA93 are not counted in the debt figures but rather as a memorandum item to the debt.

1. Or latest year available: 2006 for the Czech Republic, Iceland, Japan, Korea, the Netherlands, New Zealand, the Slovak Republic and Switzerland; 2005 for Luxembourg.

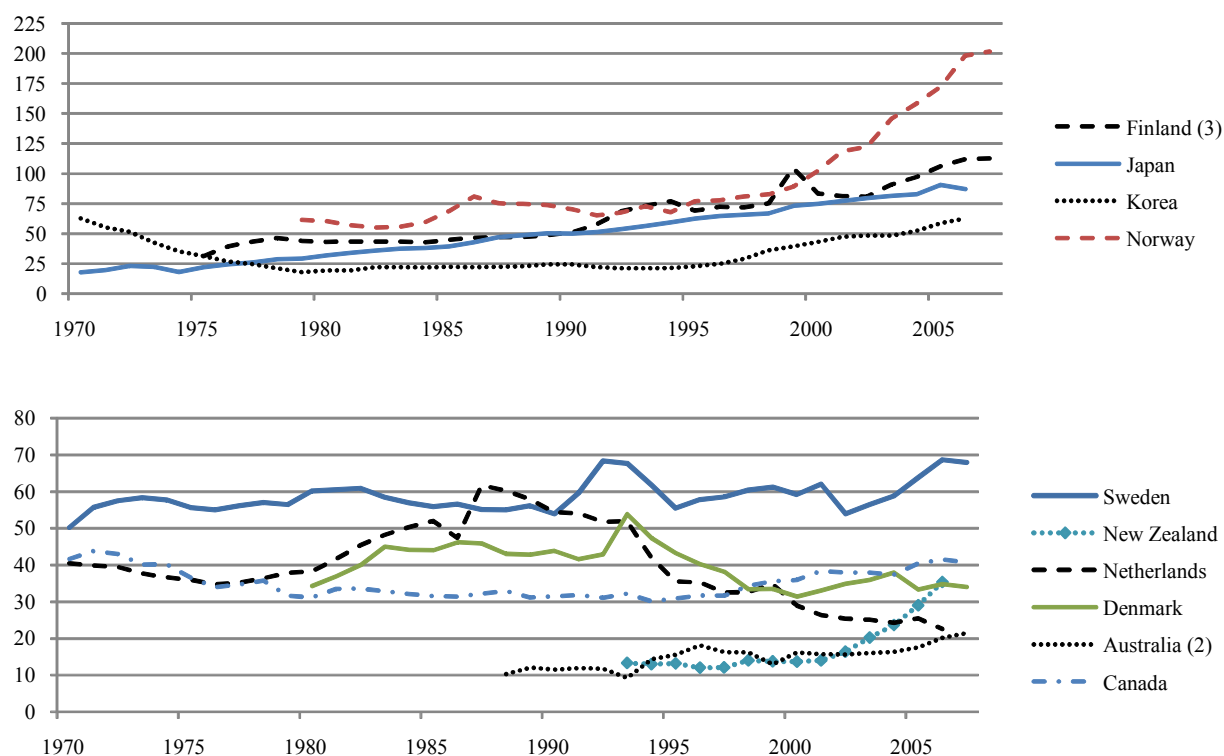
Source: OECD EO84 database.

**Figure 7. General government financial assets**

Per cent of GDP

A. 2007 level<sup>1</sup>

B. Trends in selected OECD countries



Note: Financial assets include cash, bank deposits, loans to the private sector, participation in private sector companies, holdings in public corporations and foreign exchange reserves. Data coverage and valuation methods may, however, differ across countries.

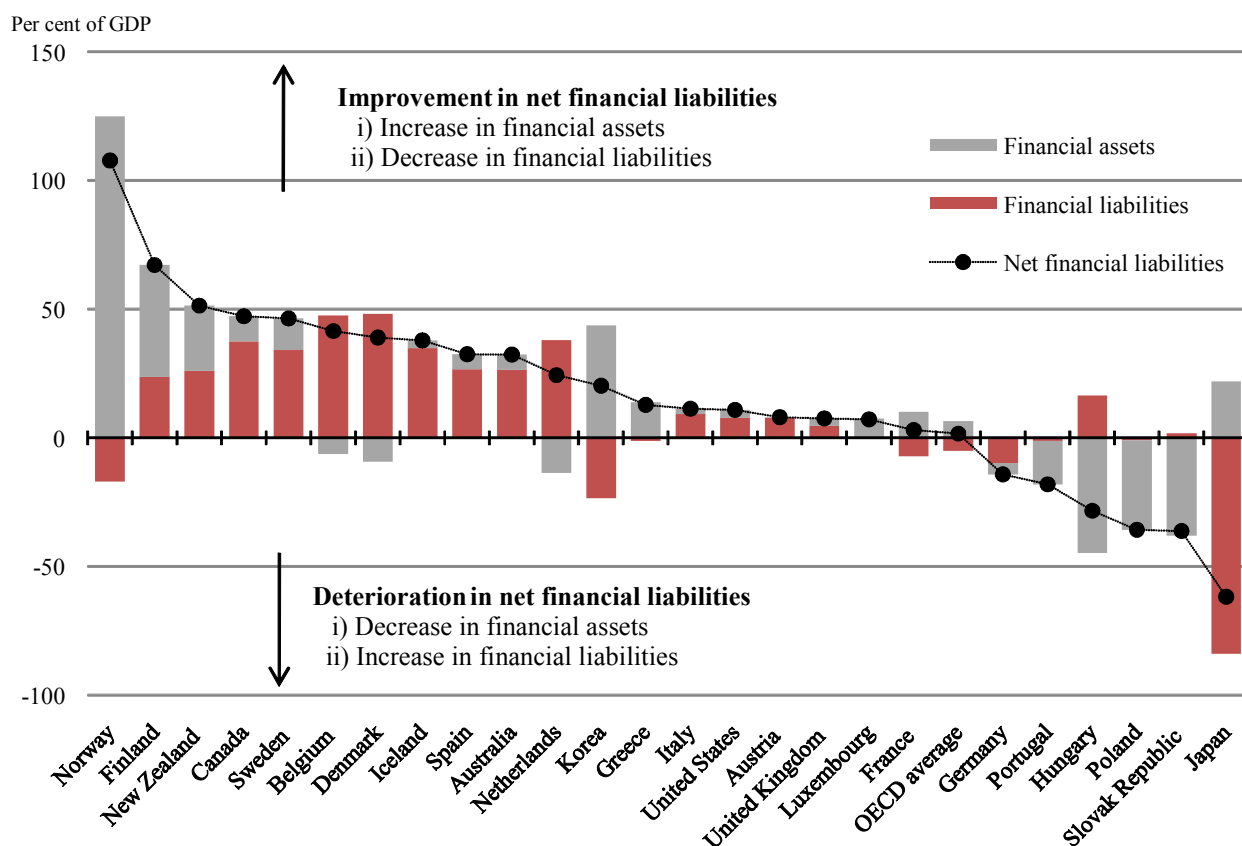
1. Or latest year available: 2006 for the Czech Republic, Iceland, Japan, Korea, the Netherlands, New Zealand, the Slovak Republic and Switzerland; 2005 for Luxembourg.

2. The government's equity participation in businesses is not included in government financial assets. It amounted to 20.4 % of GDP in 2007.

3. From 1995 onwards, housing corporation shares are no longer classified as financial assets.

Source: OECD EO84 database.

**Figure 8. Changes in net financial liabilities and their composition**  
1995 - 2007



Source: OECD EO84 database.

35. Financial market considerations may play a role in governments' decisions to continue issuing bonds.<sup>20</sup> Effectively backed by taxing powers, government bonds are generally the least risky financial instrument. They serve both as a benchmark for pricing other financial instruments and as a safe investment for portfolio diversification. Because they are highly liquid, they have traditionally been used for the conduct of monetary policy. And their derivative markets facilitate interest rate risk management. Substantial uncertainty exists as to how government bonds could be replaced by other financial instruments (e.g. government-backed securities or mortgage instruments) while maintaining efficient and smooth functioning of financial markets.<sup>21</sup> These instruments may not be fully available in some countries. Even when financial markets are well-developed, alternative instruments such as swap curves, credit default swaps and mortgage-backed securities often suffer from a lack of standardisation and in particular may be difficult to rely on during episodes of financial turmoil (Danish National Bank, 2007). In practice, many countries with fiscal surpluses (including Australia, Canada, Denmark and Sweden) have adjusted their bond issuance strategy to concentrate on key segments of the maturity with the aim of maintaining liquidity. Maintaining a certain level of bond issuance for financial market efficiency purpose is less

20. A discussion on the role government bonds play for financial markets is provided in Comley and Turvey (2005) for Australia and in Norges Bank (2003) for Norway.

21. This issue has been actively debated in the late 1990s for the United States, when continued fiscal surplus had appeared to have enabled the U.S. government to retire all federal debt. Mylonas *et al.* (2000) provide a summary of the discussion.

relevant for countries with surpluses which have joined the euro area, since bonds issued by other governments of the area can act as close substitutes.

36. Additionally, consideration should be given to a possibility that, with a generally much less favourable long-term fiscal outlook, governments may have to rely on borrowing in the future. If this is the case, it may be worthwhile to keep the windows of access to the financial markets with some continued issuance of debt. The cost of maintaining some debt management activity may be smaller than the possible costs of re-entering the market in the future.<sup>22</sup>

### ***How far can and should the government build up assets?***

37. Building up assets could, in principle, help in securing sustainability and intergenerational equity, but consistent information on the composition and quality of general government financial assets is scarce, calling for greater transparency.<sup>23</sup> And it should be recognised that setting aside funds entails some risks:

- *First*, from a public expenditure control viewpoint, the existence of pre-allocated assets (*e.g.* to pay for health care costs) may reduce incentives to improve cost-efficiency of public spending programmes. Pre-funding may generate new political demands for public spending, leading to an overexpansion of the public sector. Earmarking money to cover specific future spending items may also result in a too fragmented/sub-optimal allocation of funds.
- *Secondly*, government ownership of businesses may hold back entrepreneurship and deter potential entrants. It may further create a conflict between the government's role as a regulator and its role as an owner of shares in these companies.
- *Thirdly*, the quality and liquidity of some assets may be questioned, *e.g.* when loans to public and private enterprises have a large subsidy component and may not be fully paid back.<sup>24</sup> The composition of investments may be compromised where the rewards for good performance may be far outweighed by the penalties of bad performance, making for excessive risk aversion.

38. Government portfolio investment abroad also creates potential governance problems. It may be seen as an attempt to increase the return on stabilisation funds (see OECD, 2007b, Box 1.5) and may perform a stabilisation function *vis-à-vis* the exchange rate. However, the expansion of Sovereign Wealth Funds (SWFs) is inevitably subject to constraints. In some cases, such investment may be seen as distorting capital and trade flows, generating concerns in recipient countries which can result in a degree of protectionism and valuation risk. Managing these risks requires the observance by SWFs of high standards of transparency, disclosure, accountability and expertise.

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22. This point has been stressed in OECD (2008b).

23. OECD National Accounts (OECD, 2007a) provide interesting information on general governments financial assets by instrument, though not for all OECD countries and not on the same basis (some are consolidated across government levels and agencies, others are not). In addition, they do not allow to break down the category "shares and other equity" into domestic and foreign instruments, nor do they allow to distinguish between shares from public *versus* private enterprises.

24. In Japan, financial assets held by the central government include loans to the Fiscal Investment and Loan Programme (FILP) as well as investment in public corporations. The quality of some of these is doubtful. One of the seven principles of the 2006 *Integrated Expenditure and Revenue Reform* was to reduce the size of the government's balance sheet through a reduction of its assets and the government has set the numerical target to halve their size (as a ratio of GDP) in a decade FY2005-FY2015. The reduction of the FILP loan will be achieved by securitisation. In any case, the FILP loan will decline as the source of funds, such as Japan Post savings is cut, and borrowers (public corporations) are been forced to find finance by themselves. The second part of the reduction will be realised by selling securities, lands and buildings held by the government.

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## Annex. Government debt dynamics and the budget constraint

### Government debt dynamics and the underlying fiscal balance

The government net debt ratio ( $d$ ) must converge to a finite value for a fiscal stance to be sustainable, at which point it will be equal to the ratio of the deficit to the steady state nominal GDP growth rate ( $-b/g$ ). In this context, setting a fiscal rule in terms of budget balance is equivalent in the long term to setting a debt ceiling and the two have to be set consistently.<sup>1</sup> Countries where  $b < -g \cdot d$  will converge to a higher debt ratio than currently obtains (upper right quadrant of Figure 1 panel B); those where  $b > -g \cdot d$  will converge to a higher ratio of net assets than at present.

### Debt interest, primary surpluses and the government budget constraint

The level of future primary budget surpluses required to stabilise the debt ratio critically depends on the relative values of the nominal implicit interest rate on public debt ( $r$ ) and the nominal GDP growth rate ( $g$ ). The relation between the net financial debt ratio and the primary budget balance ( $pb$ ) is:

$$d_t = [(1+r_t)/(1+g_t)] d_{t-1} - pb_t \quad (1)$$

Assuming that  $r > g$ , the following government intertemporal budget constraint applies (Blanchard *et al.* (1990)), which states that the current level of debt should be equal to the sum of discounted future primary surpluses:

$$\sum_{t=1}^{\infty} pb_t [(1+r)/(1+g)]^{-t} = d_0 \quad (2)$$

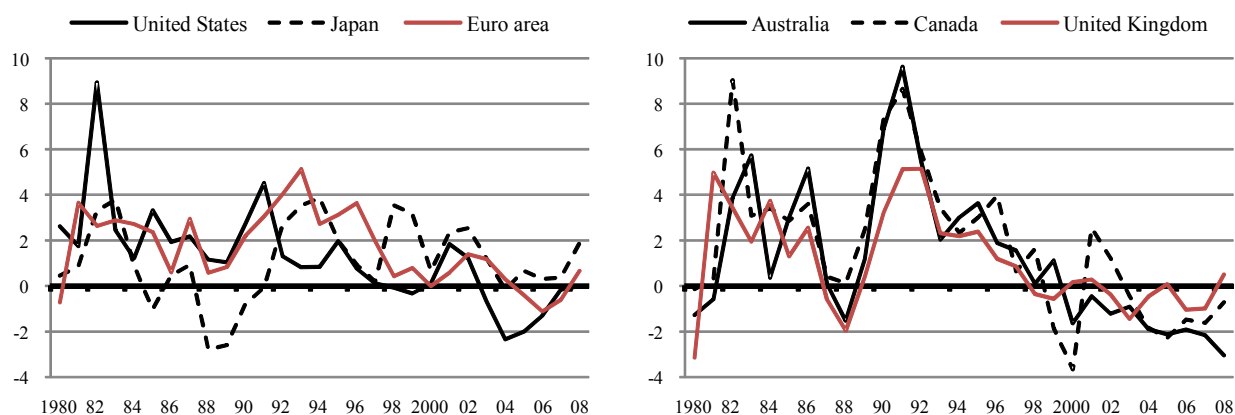
In the long run, taxes required to service interest payments converge to  $r(-b/g)$ . In this case, government debt is equal to the net present value of future taxes required to service debt: deficit finance is a pure transfer from future to present taxpayers.

Since the mid-80s, in OECD countries,  $r$  has generally been higher than  $g$ , up to the beginning of the 21<sup>st</sup> century. In this configuration ( $r > g$ ), governments will need to run primary surpluses to stabilise the debt ratio. The primary surplus which stabilises the debt ratio is  $pb^* = (r-g) d_0$ . With borrowing costs falling below the growth rate in a number of countries over recent years (Figure A), relying on debt financing has been attractive. The intertemporal budget constraint (2) shows that if  $r$  is less than  $g$  governments can issue debt without ever needing to run primary surpluses (Blanchard and Fisher, 1989).<sup>2</sup> Going forward, the severity of the government's budget constraint will thus depend on whether the interest rate on government debt recovers from its recent low level.

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1. For example the 60% limit on the debt-to-GDP ratio in the European Stability and Growth Pact corresponds to the 3% ceiling on the deficit, assuming a nominal GDP growth rate of 5%.
  2. The golden rule of the theory of economic growth shows that if the real interest rate is below the rate of economic growth, *all* generations can consume more if national savings are reduced.



Figure A. Gap between long-term interest rates and nominal GDP growth rates



Source: OECD Economic STEP84 database.

### The government budget constraint and government investment

The above constraint assumes that there is no return to government spending (*i.e.* government spending is consumption). The budget constraint is different in the case of public investment, since public spending would yield a rate of return ( $\rho$ , net of depreciation) to the private sector. The government would receive a share of the return equal to the tax rate ( $\tau$ ) – assuming a unique flat-rate tax. In this context, relation (5) can be expressed as:

$$d_t = [(1+r_t)/(1+g_t)] d_{t-1} - pb'_t - [\tau\rho/(1+g_t)] k_{t-1} \quad (3)$$

where  $k$  is the stock of public capital and  $pb'_t$ , the primary surplus excluding investment returns.

Assuming for simplicity that only investment is debt-financed and that the public capital stock is equal to public debt,  $pb'_t$  converges to  $pb'^* = (r-g-\tau\rho) d_0$ .<sup>3</sup>

If  $\tau\rho = r-g$ ,  $pb'^* = 0$ , implying that no surpluses beside those generated by investment returns are necessary to ensure sustainability. In other words, the investment pays for itself.

If  $\tau\rho > r-g$ , public investment generates more revenues than the cost of servicing debt. Hence, it can be debt-financed without requiring an increase in future taxes to finance interest payments.

If  $\tau\rho < r-g$ , the net present value of the investment is less than the net present value of the associated debt. The government budget constraint requires higher taxes to the extent that there is no direct return to the government from its investment, putting a burden on future generations.

3. In this relation,  $g$  and  $\rho$  are taken as exogenous. For a description of the debt dynamics under less restrictive conditions see *e.g.* Barro (1990) and Servén (2007).

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