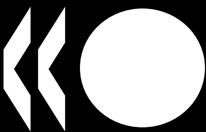
OECD Economic Surveys

United States



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This Survey is published on the responsibility of the Economic and Development Review Committee of the OECD, which is charged with the examination of the economic situation of member countries.

The economic situation and policies of the United States were reviewed by the Committee on 14 September 2005. The draft report was then revised in the light of the discussions and given final approval as the agreed report of the whole Committee on 30 September 2005.

The Secretariat's draft report was prepared for the Committee by Hannes Suppanz and Thomas Laubach under the supervision of Peter Jarrett.

The previous Survey of the United States was issued in May 2004.

BASIC STATISTICS OF THE UNITED STATES

THE LAND

Area (1 000 sq. km)	9 629

Population of major cities, including their metropolitan areas, July 1 2003 (thousands):	
New York-Northern New Jersey-Long Island	18 641
Los Angeles-Long Beach-Santa Ana	12 829
Chicago-Naperville-Joliet	9 334

THE PEOPLE

Resident population, July 1st 2004	293 655 404
Number of inhabitants per sq. km	30.5
Annual net natural increase (average 2000-04)	1 618 500
Natural increase rate per 1 000 inhabitants (average 2000-04)	5.6

Civilian labour force, 2004	147 390 167
of which :	
Unemployed	8 142 500
Net immigration (annual average 2000-04)	1 249 500

THE PRODUCTION

Gross domestic product in 2004 (billions of US$)	11 734
GDP per head in 2004	39 959
Gross fixed capital formation	
Per cent of GDP in 2004	19.1
Per head in 2004 (US$)	7 646

Origin of national income in 2004 (per cent of national income[1]):	
Manufacturing	11.9
Finance, Insurance and real estate	17.6
Services	28.3
Government and government enterprises	12.5
Other	29.6

THE GOVERNMENT

Government consumption 2004 (per cent of GDP)	15.7
Government current receipts, 2004 (per cent of GDP)	31.4
Federal government debt held by the public (per cent of GDP), FY 2004	37.2

Composition of the 109th Congress as of November 2nd 2004:

	House of Representatives	Senate
Republicans	231	55
Democrats	202	44
Independents	1	1
Vacancies	1	–
Total	435	100

THE FOREIGN TRADE

Exports:	
Exports of goods and services as per cent of GDP in 2004	10.0
Main exports, 2004 (per cent of merchandise exports):	
Foods, feeds, beverages	6.9
Industrial supplies	24.4
Capital goods	40.5
Automotive vehicles, parts	10.9
Consumer goods	12.6

Imports:	
Imports of goods and services as per cent of GDP in 2004	15.3
Main imports, 2004 (per cent of merchandise imports):	
Foods, feeds, beverages	4.2
Industrial supplies	15.0
Petroleum	12.1
Capital goods	23.0
Automotive vehicles, parts	15.3
Consumer goods	24.9

1. Without capital consumption adjustment.

Executive summary

Despite higher energy prices, the expansion has continued at a solid pace, driven by private domestic demand. With the output gap closing, stimulus is appropriately being withdrawn. However, monetary tightening since mid-2004 has not yet translated into higher long-term interest rates, and the recent decline in the federal budget deficit owes much to the recent buoyancy of revenues. Over the next 18 months, the economy is projected to grow at an annual rate of 3½ per cent, roughly in line with estimated potential output. Although such a soft landing is the most likely outcome, there are some risks. With little economic slack left, inflation could continue to pick up, in particular if oil prices keep rising. Insufficient public spending restraint or renewed dollar weakness associated with concerns about the external deficit might also add to inflationary pressures. On the other hand, an end to the house price boom, let alone a sharp correction, could entail a retrenchment of household expenditure that has been underpinned by rising household wealth.

The longer-term outlook also appears to be favourable. But addressing a number of issues would improve the chances of sustaining the recovery and good economic performance. They are mainly related to the lack of national saving and the associated large fiscal and external imbalances, but also concern some structural policy areas where progress in implementing reforms has been slow.

Ensuring fiscal sustainability and budget discipline

Further reducing the federal budget deficit requires spending discipline and a reform of major entitlement programmes. Efforts to eliminate the actuarial imbalance in Social Security should aim at strengthening work incentives for the elderly. Most likely, it will also be necessary to bolster revenues by broadening tax bases and relying more on indirect taxation.

Improving fiscal relations between levels of government

The significant degree of fiscal autonomy of the states appears to have had beneficial effects. But states' tax systems need to be improved and budgetary priorities reassessed, given impending age- and health-related pressures. Overly onerous conditions on federal grants to states for welfare and education should be avoided.

Coping with external adjustment

While a gradual adjustment of the external position is the most likely scenario, a credible macroeconomic policy reduces the risk of an abrupt shift in investor preferences. Policies that might increase national savings and ease inter-sectoral resource transfers would also be helpful in their own right, even though the economy's adjustment capacity is already impressive. Finally, global imbalances also need to be addressed by appropriate actions in other countries.

Addressing problems in the labour market

Expenditure on active labour-market measures (such as training) has been modest by international comparison, and the limited assistance available to job losers may be a factor contributing to rising protectionist sentiment. Trade adjustment assistance programmes (including wage insurance) could be expanded to cover displaced workers more generally. Moreover, to boost labour-force participation, programmes for the disabled should be reviewed so as to reduce work disincentives.

Dealing with energy and environmental issues

The electricity grid and its supervision need to be strengthened. Energy policies should not only focus on supply but also on curtailing demand through greater use of economic instruments that take account of externalities. Taxation of all carbon-based energy products would have a strong impact on greenhouse gas emissions, which are high by international comparison.

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Assessment and recommendations

The expansion has remained robust, and the near-term outlook appears broadly favourable

The economic upswing that began in late 2001 has continued at a solid pace, driven by domestic demand that has seemingly been little restrained thus far by energy-price or interest-rate increases. Rapid productivity growth and high corporate profits have contributed to strong business investment, thereby eventually raising employment and, in turn, underpinning household spending. At the same time, net exports have remained a drag on growth and the external deficit has kept widening. With resource slack diminishing and unit labour costs picking up, core inflation has moved higher. Although some stimulus has been removed, monetary tightening has been blunted by surprisingly low long-term interest rates, and further interest-rate increases are probably needed to prevent any further increase in underlying inflation. Government finances have improved thanks to unexpected buoyancy of revenues, which has outweighed additional spending, but the fiscal stance has turned only slightly restrictive. The near-term outlook is favourable: the macroeconomic effects of Hurricane Katrina are expected to be transitory; and the fundamental factors that have supported activity so far should carry forward to 2006, sustaining a continued expansion roughly in line with estimated potential output growth of 3½ per cent per year.

But important risks to this outlook remain

There are a number of risks to this scenario, even if a soft landing of the economy would still appear to be the most likely outcome, though a proper assessment of the impact of Katrina is still subject to substantial uncertainty. Yet it would seem that, with little economic slack left, inflation could continue to pick up, in particular if energy prices keep rising; this would surprise financial markets, which for the moment foresee only modest future short-term interest rate increases on the horizon. Stalling budget consolidation or dollar weakness resulting from renewed concerns about the external deficit might also add to inflationary pressures. And the huge expansion in household borrowing and investor leveraging over time might prove to have been excessive, with defaults surfacing quite suddenly. The policy choices facing the Federal Reserve might then be less favourable. For any attempt to protect the economy from a slowdown in activity might only serve to add extra support to housing and other asset prices. Conversely, a house price correction could entail a sharp deceleration in household expenditure, since such wealth is so widely held.

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Sustaining good economic performance over the medium term poses a number of policy challenges

The longer-term outlook looks auspicious, given the remarkable resilience and adjustment capacity the economy has shown. Nonetheless, there are a number of reasons for concern. The lack of domestic saving probably reflects in part policy-induced disincentives to household saving in addition to the large federal budget deficit. The lower level of national saving tends to restrain growth in the domestically owned capital stock and therefore reduces national income in the long run below what it would otherwise be. It also contributes to the large and growing current account deficit. Early attention by policymakers could avoid the need for more radical measures down the road. In addition, reforms in some structural policy areas would seem desirable. Chances for a sustained expansion and continued good economic performance would be enhanced by:

- Ensuring fiscal sustainability through spending discipline and entitlement and tax reform (Chapter 2).
- Improving fiscal relations between levels of government by revamping grant and tax systems as well as reconsidering sub-national fiscal rules (Chapter 3).
- Facilitating eventual external adjustment by appropriate macro and micro policy initiatives to boost saving and enhance the economy's ability to shift smoothly towards tradable goods and services (Chapter 4).
- Addressing problems in the labour market, such as those faced by workers subject to trade displacement and broader structural adjustment, as well as the decline in labour-force participation (Chapter 5).
- Dealing with energy and environmental issues, notably promoting electricity-market liberalisation and curbing rising greenhouse gas emissions (Chapter 6).

These challenges are discussed in some detail in this *Survey*. This does not mean, however, that there are not other areas that need attention and where reform efforts or policy changes should be considered. Clearly the most important among these is health care, which was treated in depth in the 2002 *Survey* but which still requires further attention. The education system, some aspects of which are covered, will also need more comprehensive treatment in future *Surveys*.

Spending restraint is essential to achieve fiscal sustainability but will not suffice

The improvement in federal finances has recently exceeded expectations, given strong growth in personal and corporate income tax receipts, and the deficit of the unified budget is likely to fall well below 3% of GDP in the 2005 fiscal year. Under plausible assumptions about future policies, however, further progress towards reducing the deficit is likely to be limited. Persistent unified budget outcomes near the current level would entail a substantial additional rise in public debt, with the attendant negative effects on national saving and long-run national income. Restraining discretionary spending, which had been growing at nearly 7% per annum in real terms over the previous four fiscal years, is a *sine qua non* but will probably make only a limited contribution unless defence spending can be curtailed. In any case, budgetary discipline needs to be reinforced, and reinstating fiscal rules in some form, such as the expired provisions of the Budget Enforcement Act, might

be helpful in this regard. This is all the more important in view of the looming spending pressures from the retirement of the baby boom generation. Unreformed, rising ageing-related entitlement spending would almost certainly lead to unsustainable future deficits. Unless the size of the government sector is significantly reduced, some increase in revenues will be necessary as well, highlighting the importance of tax reform to minimise the economic costs of raising revenues.

Overhauling the entitlement programmes is also crucial

The budget outlook beyond the next ten years is dominated by projected spending on entitlement programmes, which under current rules is set to rise from 8% of GDP at present to 18% in 2050. Although the uncertainty surrounding these projections is substantial, there is broad agreement that these programmes need to be altered so as to curb their tendency to consume an increasing share of national income and make the promises they embody to the poor, elderly and infirm affordable. While the fiscal imbalance of Medicare and Medicaid dwarfs that of Social Security, the current policy debate is focused on reforming the latter, perhaps because it is arguably more amenable to a solution. Indeed, partly for demographic reasons, Social Security's financial situation is less worrisome than that of most pay-as-you-go systems in the OECD. Thus, a combination of adjustments to programme parameters could eliminate its current actuarial imbalance in a manner that it will not resurface over time by:

- Speeding up the transition from 65 to 67 for the age at which full benefits are paid and indexing it to increases in longevity thereafter. Moreover, increasing the early retirement age from 62 to 64 and raising the financial penalty to taking early retirement and incentives to delaying exit beyond merely actuarially neutral amounts would stimulate participation in the labour market, thereby expanding the tax base and improving retirement incomes.
- Reducing replacement rates for higher earners. These reductions might be calibrated so as to offset the effect of their above-average gains in life expectancy on expected lifetime benefits.
- Reversing the rise in the share of earnings not subject to Social Security tax by increasing the taxable maximum, though this would engender some negative effects on incentives to work.

The addition of personal accounts would increase the pre-funding of Social Security only to the extent that they would be financed out of new saving. If such accounts were financed out of existing payroll taxes, pre-funding would arise only to the extent that the resulting higher *ex-ante* explicit government deficit would lead through the political process to a lower path for government current expenditures than otherwise. Moreover, because higher average returns in such accounts would be associated with greater market risks, eroding the existing defined-benefit structure beyond what is necessary to put it on a sustainable footing should be avoided. Increasing participation in existing defined-contribution plans outside Social Security, for example through automatic enrolment in employer-sponsored plans or a refundable saver's credit for low-income households, would be a more effective means to raise retirement savings among those mainly lower income groups that currently appear to provide insufficiently for their retirement.

The efficiency of the tax system needs to be enhanced

The complexity of the personal and corporate income taxes has steadily increased since the last major tax reform in 1986, largely due to the continued proliferation of deductions, exemptions, credits and tax shelters that have substantially narrowed the tax base and created many distortions, several of which harm incentives to save. The Administration has charged an advisory panel with submitting options for federal tax reform with the aim of making the tax code simpler, fairer and more conducive to economic growth. A number of measures should be undertaken, even if the basic structure of the current income tax is retained:

- The deductibility of interest on home equity loans (which are for consumption purposes) should be eliminated. The deductibility of interest on loans for the purchase, construction or improvement of houses should be limited to a much lower threshold and eventually phased out.
- The exclusion of employer-provided health insurance premiums should be capped. The deductibility on federal tax returns of state and local tax payments and the exemption of interest on public-purpose state and local government debt should be dropped.
- A more wide-ranging simplification of the personal and corporate income taxes with substantial base broadening and reduction in marginal rates as well as improved integration of corporate and personal income taxes would likely have substantial beneficial effects. The negative income tax for low-income workers (EITC) should be maintained, as should the current preferential treatment of major forms of retirement saving, even though its effect on household saving may be limited.

Beyond these reforms, further efficiency gains might be obtained through greater reliance on consumption taxation. The replacement of the grossly inefficient corporate income tax by a federal VAT should be considered. With a broad base, such a VAT would probably raise enough revenue to reduce reliance on income tax revenues and exempt an even larger share of the population from paying federal income tax; at the same time, retaining a personal income tax would allow the desired degree of progressivity of the overall tax system to be achieved. In addition, if states changed their own sales taxes to a VAT, jointly administered federal and state VATs could lead to substantial efficiency gains for economic decisions and tax compliance and administration.

The significant degree of state and local fiscal autonomy has had beneficial effects

In a country as economically and demographically diverse as the United States, the large degree of fiscal autonomy of the states and, to a lesser extent, local governments is appropriate. There is considerable variation in the scope and amount of government services provided, likely reflecting some degree of heterogeneity in local preferences. Indeed, there is some evidence that the provision of public goods and services at the local level is quite efficiently aligned with local tastes. While there are areas – notably education, welfare and public health – where externalities require involvement by higher levels of government in the form of grants and, within states, some revenue redistribution, such redistribution is weak for the most part, in particular across states. This implies a

comparatively close link between revenue-raising power and expenditure assignments, with attendant gains in accountability of each layer of government. Although fiscal relations across levels of government are thus producing positive outcomes overall, there is scope for improvement.

Some changes to the existing federal grants to states are warranted

Grants from the federal to state governments are not primarily motivated by redistribution concerns. Some are matching grants and hence seem to reflect efficiency considerations. However, matching rates often appear excessively high. Conversely, the recent expansion of earmarked block grants, notably in the welfare area, suggests that correcting spill-over effects is not always the dominant motive. In the light of the experience with state experimentation in the design of welfare programmes, greater authority for programme design and responsibility for financing in several areas should be given to the states; tendencies to restrict state flexibility through overly onerous conditions should be resisted. In particular:

- When renewing funding for Temporary Aid for Needy Families (TANF), states' ability to tailor programmes to their local needs should not be impeded by tightening work requirements in ways that prove impractical to implement.
- Given that a nation-wide highway network has been established, responsibility for highway funding should be turned over to the states, together with the right to charge tolls, and the federal highway trust fund should be dissolved.
- The costs of implementing the No Child Left Behind Act need to be more precisely quantified and adequate federal funding ensured.

The Medicaid programme is probably an exception to this trend of devolution. Its rate of expenditure growth is such that states would not be able to assume greater responsibility for financing the programme in view of their limited ability to raise revenues. Hence, a shift of all Medicaid expenditures for the elderly and disabled to Medicare should be considered, as it would concentrate responses to the nation-wide challenge of ageing at the federal level. Federal matching rates for the remaining Medicaid services could then be reduced. In any case, the states should curtail their improper use of intergovernmental transfers so as to strengthen the integrity of Medicaid financing.

State and local revenue systems and budget rules could be improved

States' autonomy over their taxation decisions in principle provides a high degree of independence on the expenditure side. However, it is constrained by taxpayer mobility, which limits the progressivity of the personal income tax and the potential yield of corporate income tax, and by states' inability to collect use (sales) tax on remote sales. To improve the efficiency of their revenue systems:

- States' efforts to co-ordinate sales tax policies through the adoption of joint definitions and rules of tax administration are worthwhile and should therefore be continued; assuming successful implementation of the Streamlined Sales and Use Tax Agreement,

Congress should authorise them to require remote vendors to collect use tax on their behalf.

- In view of the high administrative costs of the corporate income tax and the continued erosion of its base, as well as the inherent inefficiencies of the sales tax, states should consider replacing both taxes by a value-added tax (VAT), preferably jointly with the federal government. The experience with the Streamlined Sales Tax Project to co-ordinate the administration of the sales tax and facilitate information exchange might prove helpful to structure a VAT based on the destination principle.
- As previously noted, the deductibility of state and local taxes from federal income tax should be abolished, as it raises the burden of the latter by narrowing its base, thereby requiring higher rates, while at the same time it appears to distort state and local governments' financing and spending decisions.

The balanced-budget requirements under which almost all states operate appear on the whole to have effectively disciplined state fiscal policies, but there is some risk that this discipline may have been achieved at the cost of undesirable volatility in core service provision. The additional tax and expenditure limitations applying to many state and local governments are intended to impose even stricter discipline, but they are also more likely to cause undesired cyclical patterns of state and local spending and to erode local governments' fiscal autonomy. Fiscal rules at the sub-national level might benefit from the following changes:

- Based on the experience during the recent fiscal crisis, the states should quantify and accumulate rainy-day funds of sufficient size to avoid welfare-reducing cuts in core expenditures, except under extreme circumstances. Those states that have statutory caps on rainy-day funds should adjust them if necessary.
- Tax and expenditure limitations should be formulated in reference to desired spending levels, not by limiting the growth in revenues or expenditures to recent realised values of state income growth or similar characteristics, so as to account for changes in demand for public services due to demographic changes and to avoid ratchet effects in the aftermath of recessions.

Current account imbalances pose a risk both to the US and to the global economy

When the Committee last met to discuss the US economy in early 2004, the US current account deficit was below 5% of GDP and projected to stay in that range. However, the deterioration in the external accounts has continued, and the shortfall has now gone well beyond 6% of GDP, the largest in the nation's history. At the same time, net external debt reached some $2½ trillion or 22% of GDP at the end of 2004. Few other OECD countries have ever managed to sustain imbalances of that magnitude without eventually experiencing sharp downward pressure on the value of their currencies. Nevertheless, not only has the dollar's depreciation since 2002 been quite gradual, but this year it has reversed part of the decline, setting the stage for a further widening of the deficit in years to come. The reasons for this unexpected strength are to be found on the capital flows side of the ledger: global investors perceive the United States to be a more attractive investment location than most others, although they have preferred their financial positions to take the form of interest-bearing securities rather than equities and much has come from foreign public entities

such as central banks seeking to mitigate upward pressure on their exchange rates. How likely it is that such net inflows will continue to grow in line with US residents' strong demand for imported goods and services is impossible to predict with any degree of certainty. But the political and economic risks inherent in the current constellation of trade balances and currency values are great, both to the US and to the wider global economy: a disorderly adjustment, involving substantial strains in domestic financial markets, cannot be ruled out.

The best strategy to address the global imbalances includes strengthened US efforts to boost national saving

There is accordingly a natural urge to do something to lower the deficit. The problem is that anything that could be done that would directly target the current account would have heavy costs on economic performance by reducing growth at home and abroad. Protectionist measures to restrict imports, for example, would merely squeeze out exports too by putting upward pressure on the dollar and eliciting foreign retaliatory action. There is a legitimate question as to whether, in the context of a floating exchange rate and unrestricted capital flows, a strategy of benign neglect – leaving adjustment to the workings of the markets – would not be optimal. Nevertheless, there are actions that should be taken both by the United States and other nations for other reasons that would probably also lessen the US current account deficit, thereby easing the pressures on the system. Countries with weak economic performance and/or excess saving should seek faster growth of domestic demand, while those lacking exchange rate flexibility should move steadily toward that goal. As for the United States, there are measures that could be implemented to boost national saving that would be appropriate in their own right:

- As argued above, it would be prudent for the federal government to move more resolutely than is currently planned to bring down the federal budget deficit, even if the benefits for the external imbalance are far less than one for one.
- As also argued above, one of the key objectives of tax reform should be to remove the most obvious anti-saving biases in the tax code, whether or not income is retained as the primary basis for taxation. The most egregious is the deductibility of mortgage interest payments and the availability of that deduction for private consumption expenditure. Broadening the tax base in this way would eliminate the advantage currently given to residential investments over other forms of capital and, if implemented gradually, withdraw some of the current frothiness in housing markets. Health care spending is also given an inappropriate fillip by the unrestricted exclusion of employer-paid health insurance premiums: this should be capped.

Enhancing the economy's adjustment capacity will also help to cope with the transition to a reduced external deficit

Another set of relevant policy lessons derives from a recognition that whenever the trade deficit comes down, and by whatever means, the burden on economic agents will be lessened by enhancing the economy's flexibility in re-allocating resources from non-tradable to tradable goods sectors. Fortunately, the evidence is strong that the structure of

the US economy does shift comparatively smoothly between these types of industries in response to currency changes. No doubt this is at least partly attributable to the long list of structural policy settings where the United States is a leader in performance-enhancing reforms. First among these features is a high labour-market adjustment capacity by international comparison. Indeed, there are signs that its resilience to local or regional shocks improved sharply at the end of the 1980s. In addition, its product market regulations are also among the most conducive to competitive outcomes. Nevertheless, there are a few areas where the United States does not rank highly and could clearly do better:

- The education system is still underperforming, at least at the compulsory level, and the lack of skills is already causing adjustment problems for many individual workers. While enrolments are increasing, average attainment is falling, in contrast to many other member countries. More disturbing is the fact that quality shows no signs of improvement: standardised (PISA) test results show modest deterioration from 2000 to 2003. If the No Child Left Behind Act does not manage to turn things around, further reflection as to what ails the US system will be called for.
- Resources are held for too long in shrinking firms and industries due to the inefficiencies of the bankruptcy law. Chapter 11 of the code is not only costly, but it is biased against liquidation. The upshot is that too few firms emerge from the process as successful entities. At a minimum the time spent under court protection should be limited.
- The agriculture sector is also retaining a small amount of superfluous resources owing to public support. It is to be hoped that a successful completion of the Doha Round will involve the reduction of such assistance worldwide.
- Exporters are likely to become increasingly constrained by a lack of transport infrastructure, especially port capacity. The authorities should be urgently planning upgrades.

Labour market policies could play a greater role in assisting dislocated workers

Although job creation has finally gathered momentum, it has been atypically weak in the current business cycle. Non-farm payroll employment continued to contract for almost two years after the end of the 2001 recession and surpassed its pre-recession level only in early 2005. The strength of productivity growth can account for much of these developments. However, while in the short run greater productivity gains set the bar higher for employment growth, in the long run it leads to higher per capita income and can thus be expected to be at least neutral for employment. Nonetheless, the slow recovery of employment has reinforced concerns about job losses due to rising imports and "outsourcing", which are reflected in increased support for protectionist measures. Although fears about the impact of globalisation on employment are often exaggerated, trade-displaced workers do incur significant adjustment costs, including frequently large wage losses when they finally find a new job. Furthermore, certain regions, sectors and populations may be disproportionately affected. While active labour-market policies in the United States are modest by international comparison, the country is unique within the OECD for having operated a targeted programme for trade-displaced workers, although its coverage has in practice been relatively narrow. Since the implied costs and distorting

effects of such measures are probably minor compared to the potential adverse effects of rising protectionism:

- Trade-adjustment assistance programmes – including wage insurance and health insurance premium support – should be carefully evaluated and, if experience is positive, expanded to include younger and service-sector workers, if not all dislocated workers, regardless of the cause of dislocation.

Falling labour-force participation is a concern

Another unusual feature of the current cycle has been the protracted decline in the labour-force participation rate, which in the fourth year of the expansion still shows no clear signs of recovering. While this has kept the unemployment rate lower than otherwise, it would have adverse implications for potential output growth to the extent it turns out to be structural rather than cyclical in nature. One possible reason behind the fall in labour-force participation among youths is competition from low-skilled immigrants and older workers; another is a rise in school enrolment. However, it is unclear whether this added schooling results from a (temporary) deterioration in job opportunities or a long-term increase in the returns to education. Another factor that may have depressed labour-force participation as from the late 1980s is a tendency for the low skilled to take up disability rather than unemployment benefits. This would be problematic, because disability beneficiaries are less likely to return to the labour force when the economic situation improves. Hence:

- Efforts should be made to reduce work disincentives for the disabled that result from restrictions in, and inconsistencies between, various government programmes by tightening access, changing the benefit indexation formula and making greater efforts at vocational rehabilitation.
- It is worth trying to shift the composition of immigration more towards higher-skilled entrants who do not substitute for native youth in employment and represent a lower fiscal burden for society.

Energy policy should be geared to incentives for raising energy efficiency and the production of renewables

The continuing sharp rise in oil prices has focused attention again on energy markets. Although energy use relative to GDP has been on a downward trend, energy expenditures in the United States – both per unit of output and per capita – are much higher than in the other major OECD regions. Energy supply is dominated by fossil fuels, while renewable sources of energy remain relatively insignificant, with their share lower than in the mid-1990s. Despite California's earlier electricity crisis and the major blackout in the northeast of the country, progress in the area of energy policy reform has been slow, with the Energy Policy Act passed only this summer. The Act aims at improving the country's electricity grid, expanding the diversity of energy supply and enhancing energy efficiency, thereby reducing the reliance on foreign sources (the contribution of net imports to total energy

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supply having grown to more than one quarter). Relatively limited attention has been given to curtailing energy demand. In implementing energy reforms:

- Priority should be accorded to providing incentives for renewable energy production – which avoids the atmospheric externalities of fossil fuels – rather than traditional forms of energy, and to enhancing energy efficiency, in particular in the transport sector, using economic instruments where possible.
- To realise the benefits of improvements in energy infrastructure, in particular in electricity transmission and generation, the changes embodied in the Act should be monitored to ensure markets are contestable.

Policies to curb greenhouse gas emissions could be reinforced

While environmental quality in the United States has improved, both air pollution and greenhouse gas emission intensities are quite high compared to those of other OECD members. The average US vehicle produces almost twice as much carbon dioxide emissions as in most other countries, and fuel efficiency has stopped improving as the weight and power of the fleet has tended to increase. While most OECD countries rely to a greater extent on environmental taxes, the US approach to air pollution control focuses on tradable permit schemes for large-scale emitters. By contrast, the Administration's climate change policy relies primarily on voluntary and non-regulatory actions. Meanwhile, however, many states and localities look likely to move beyond the federal approach, limiting carbon dioxide emissions from new cars and light trucks or introducing a cap-and-trade system for fixed source emissions. To further improve environmental quality:

- Since voluntary approaches to environmental control have been shown to be less effective in general, measures should be taken to stabilise and then reduce greenhouse gas emissions in an economically efficient manner. This could be done by introducing some mixture of a domestic cap-and-trade system, as exists for air pollutants, and a carbon tax on all carbon-based energy products. Such a move would not only reduce air pollution and combat global warming, it would also promote energy independence and – in the case of a tax – provide valuable public revenues.
- Greater use should be made of economic instruments to integrate environmental concerns in transportation. While an increase in fuel taxes would be justified, so as to take on board the external costs of the carbon produced, a further tightening in CAFE (corporate average fuel economy) standards, as proposed by the Administration, would be a second-best solution.

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Chapter 1

Challenges facing the US economy

This chapter discusses challenges facing the US economy over the short and medium term against the backdrop of the current economic situation, which is quite favourable by international comparison. With the gradual withdrawal of monetary and fiscal stimulus and much higher oil prices, growth has slowed slightly as output has approached capacity limits and inflation pressures have begun to build. Although the impact of Hurricane Katrina is still subject to substantial uncertainty, prospects for a soft landing are good. Nonetheless, policy action in some areas would be helpful in unwinding imbalances that have emerged and sustaining favourable economic performance. While spending restraint will be an essential part of any federal budget deficit reduction, reform of the major entitlement programmes and the tax system is important as well. States' tax systems are also in need of attention, especially in view of increasing age- and health-related pressures, which strain their limited ability to raise taxes. Bringing down the large external deficit requires policies that support a rise in national saving and the eventual sectoral adjustment. In the labour-market area, there is a role for public policy to facilitate re-employment of and provide income support to displaced workers as well as to encourage labour-force participation. Finally, especially at a time of rising dependence on costly foreign oil and gas, the introduction of a tax on all carbon-based products should be given much fuller consideration.

The economic situation

The recovery from the 2001 recession gained considerable momentum in 2003-04. With stimulatory fiscal and monetary policies and favourable financial conditions, household spending on both current consumption and housing remained buoyant, suffering only temporarily from oil price hikes. At the same time, against the backdrop of robust productivity growth and high profits, business investment began to contribute substantially to economic growth (Table 1.1), driven by increased spending on equipment and software. Although exports accelerated, the foreign balance continued to be a drag on growth since imports picked up even more. The economy has kept growing at a solid pace into 2005, as employment and wealth gains have been underpinning domestic demand. However, given the gradual withdrawal of monetary and fiscal stimulus since mid-2004, the expansion has slowed somewhat, with the four-quarter increase in real GDP edging down from a peak of 4¾ per cent in the first quarter of 2004 to 3½ per cent more recently. In the early part of the summer, activity seemed to be regaining momentum, but the impact of Hurricanes Katrina and Rita (see below) has frustrated expectations of stronger growth in the third quarter.

Despite this modest slowdown, economic growth has so far remained above its potential rate, which is estimated by the OECD to be about 3¼ per cent per year. As a result, the estimated output gap, which had reached around 2½ per cent of aggregate supply in early 2003, has gradually narrowed since then (Figure 1.1). At the same time, unemployment has drifted down towards the OECD's estimate of its structural rate of 4¾ per cent (without reaching it thus far), notwithstanding some rise in September due to the adverse effects of the hurricanes. With some economic slack persisting until recently, it is not surprising that underlying inflation pressures have remained subdued. Much of

Table 1.1. **Contributions to GDP growth**

Percentage points, volume terms, chain 2000 prices

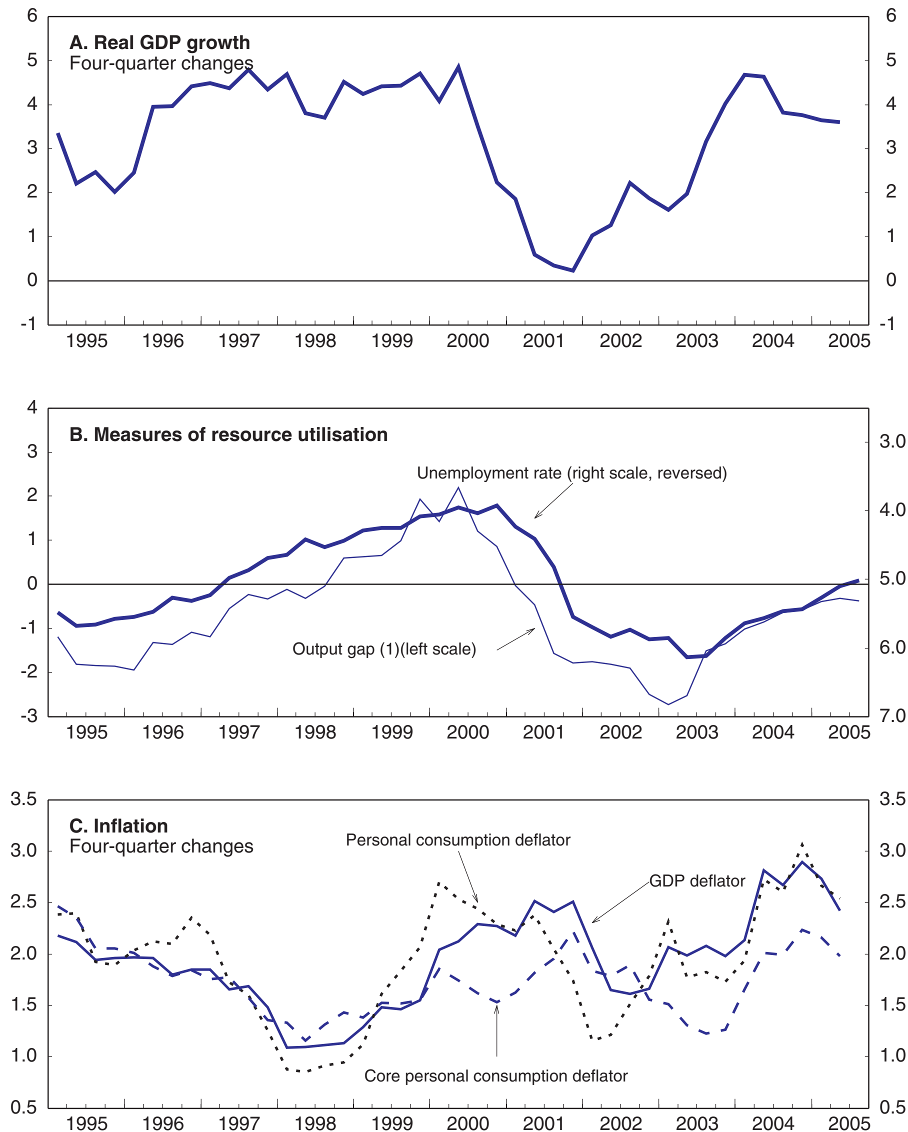
	2000	2001	2002	2003	2004	2005 Q1[1]	2005 Q2[1]
Private consumption	3.2	1.7	1.9	2.1	2.7	2.4	2.4
Private residential investment	0.0	0.0	0.2	0.4	0.6	0.5	0.6
Private non-residential investment	1.1	–0.5	–1.1	0.1	0.9	0.6	0.9
Government consumption and investment	0.4	0.6	0.8	0.5	0.4	0.4	0.5
Final domestic demand	4.6	1.8	1.9	3.1	4.6	3.9	4.3
Stockbuilding	–0.1	–0.9	0.4	0.1	0.4	0.3	–2.1
Total domestic demand	4.5	1.0	2.3	3.2	4.9	4.2	2.2
Net exports	–0.9	–0.2	–0.7	–0.5	–0.7	–0.4	1.1
GDP	3.7	0.8	1.6	2.7	4.2	3.8	3.3
Memorandum items:							
Growth rate of:							
Private consumption	4.7	2.5	2.7	2.9	3.9	3.5	3.4
Private non-residential investment	8.7	–4.2	–9.2	1.3	9.4	5.7	8.8
Core PCE inflation	1.7	1.9	1.8	1.3	2.0	2.4	1.6
Output gap	1.4	–1.0	–2.0	–2.0	–0.8	–0.4	–0.3

1. Quarterly changes at an annual rate.

Source: Bureau of Economic Analysis and OECD calculations.

Figure 1.1. **Aggregate economic indicators**

Per cent



1. Per cent difference between actual and estimated potential output.

Source: Bureau of Economic Analysis, Bureau of Labor Statistics and OECD calculations.

the observed acceleration in overall consumer prices reflects the sharp increase in petroleum-based energy costs (see Chapter 6). The earlier moderate rise in core inflation (*i.e.* excluding food and energy) was attributable to second-round effects of the energy price increases as well as rising commodity and import prices more generally as the exchange rate weakened until the end of 2004; labour costs have begun to contribute only in recent quarters (see below). Though unaffected by import price increases in the first instance, the GDP deflator has moved much like the private consumption deflator, given a marked rise in construction prices for business and, in particular, residential structures. Home prices have grown at double-digit annual rates since the second quarter of 2002, as mortgage interest rates have been at their lowest levels since the late 1960s (Box 1.1).

Box 1.1. **A housing bubble?**

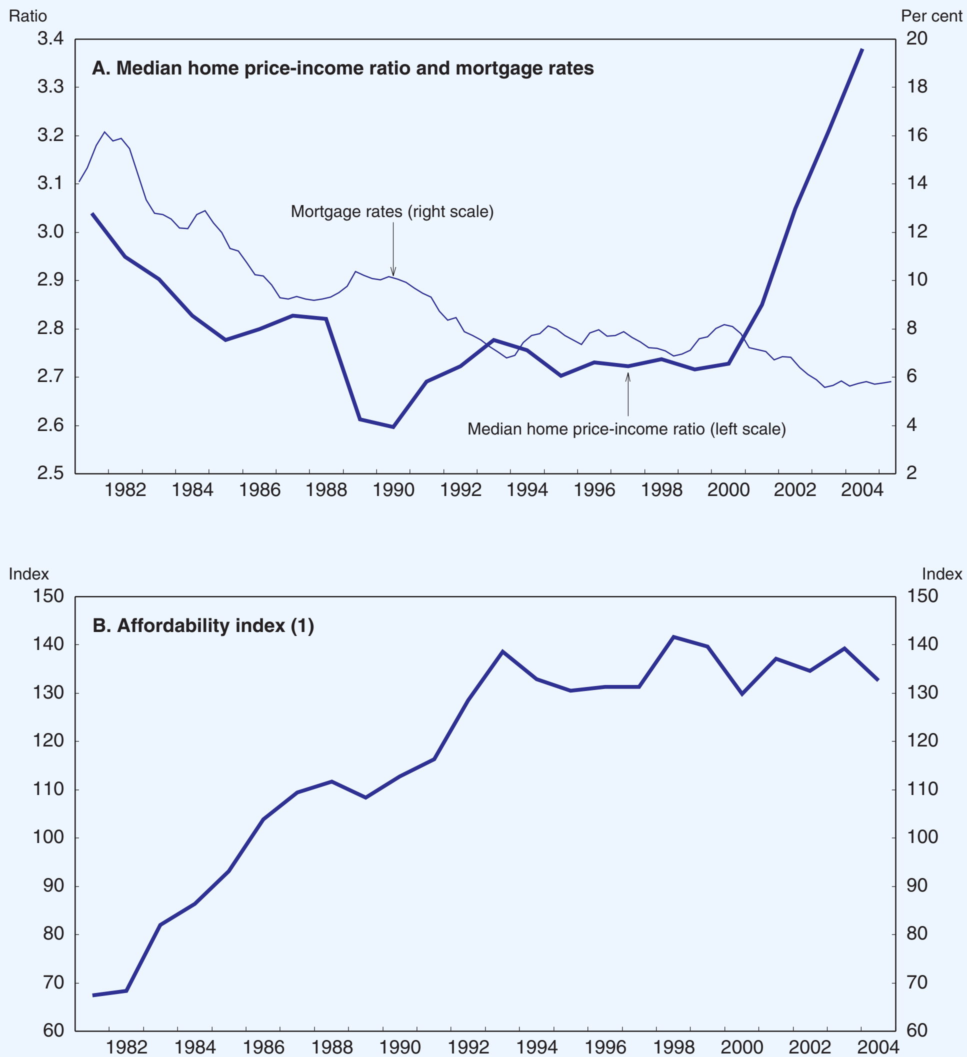
House prices at the national level have risen by a cumulative 70% since 1997 when they started to advance notably more rapidly than overall inflation. These price increases have also outstripped by a wide margin the growth in household income and rents. The typical existing home now costs nearly 3½ times the median family's income, almost one-third more than the historical average (Figure 1.2). By contrast, housing affordability – basically the ratio of mortgage payments to household income – has hardly changed and is favourable by longer-term historical standards. That said, in a few "hot" markets, such as southern California and Florida, affordability is already almost as poor as in 1981 and 1989, the prior two housing-market peaks, which is remarkable, given the much lower level of mortgage rates prevailing now. The Federal Reserve's financial obligations ratio for homeowners confirms this relatively benign picture at the national level, still falling short of its previous peak in 1991, although the overall ratio for households, including consumer debt, has been at the highest level since the beginning of the 1980s over the past two years.

Affordability estimates imply that, despite the sharp increase in the price/income ratio, house prices have not decoupled from their traditional main determinants: income and interest rates. Hence, there is no conclusive evidence for a housing bubble. Indeed, Federal Reserve officials have preferred to talk about "froth". Nonetheless, the risk of a sharp home price slowdown, and outright declines in some regional markets, is significant. Along with the easy availability of home equity loans in the context of the tax deductibility of mortgage interest payments (see Chapters 2 and 4), the increase in housing wealth in recent years has been one of the driving factors behind the strength of consumer spending (*via* mortgage equity withdrawal, which exceeded $600 billion in 2004). Thus, the impact of a house price correction on economic activity could be significant, although it is, on its own, unlikely to trigger a recession. OECD estimates suggest that the long-term impact of a 10% decline in real housing wealth would reduce the level of private consumption in the United States by ¼ to ½ percentage point, although for various reasons this might understate the scale of the immediate adjustment triggered by a sharp fall in house prices.

While the monetary authorities have stressed the local nature of excesses and insisted that price declines, if they were to occur, probably would not have substantial macroeconomic implications, they have nonetheless noted some troubling aspects of the booming housing market. It appears that a substantial part of the acceleration in turnover of existing homes reflects the purchase of second homes, which could mean that speculative activity may have had a greater role in generating the recent price increases than it has customarily had in the past. Another concern is the dramatic increase in interest-only loans or other relatively exotic forms of adjustable-rate mortgages, given that rates are so low. Nearly a fourth of the mortgage loans made nationally this year have been of an interest-only form, and in the Washington, D.C. area more than a third of homebuyers are using such mortgages, up from 2% just five years ago. Considering that these developments, along with the vulnerability to interest rate increases, involve considerable risks, in a joint statement in May 2005, the Federal Reserve and other banking regulators warned banks that they should tighten controls on home equity loans that they said are too often offered with no documentation of a borrower's assets, employment and income.

Box 1.1. **A housing bubble?** *(cont.)*

Figure 1.2. **House prices and affordability**



1. 100 is defined as the point where a median-income family can afford a median-priced home with a 20% down-payment, with 25% of income going to mortgage principal and interest. Higher index values indicate higher affordability.

Source: National Association of Realtors.

The above-mentioned decline in unemployment over the past two years initially reflected an unusually protracted and pronounced fall in labour-force participation (see Chapter 5). It was only in 2004, the third year of the recovery, that employment rebounded after three years of contraction (Table 1.2). The counterpart of weak net hiring was unusually strong labour productivity growth (Figure 1.3). The factors underlying this

Table 1.2. **Labour market and household indicators**

Per cent

	1999	2000	2001	2002	2003	2004	2005
Unemployment rate	4.2	4.0	4.8	5.8	6.0	5.5	5.1[3]
Labour force participation rate	67.1	67.1	66.8	66.6	66.2	66.0	66.0[3]
Private non-farm employment growth[1, 2]	2.5	2.1	–0.3	–1.7	–0.4	1.3	1.9[3]
Personal income growth[2]	5.1	8.0	3.5	1.8	3.2	5.9	6.4[4]
Disposable personal income growth[2]	4.7	7.5	4.1	4.6	4.3	6.1	5.0[4]
Personal saving rate	2.4	2.3	1.8	2.4	2.1	1.8	0.3[4]
Household net worth change[2]	13.1	–1.8	–2.1	–4.2	12.8	9.6	9.4[4]

1. Establishment survey.
2. Year-on-year.
3. First three quarters.
4. First two quarters.

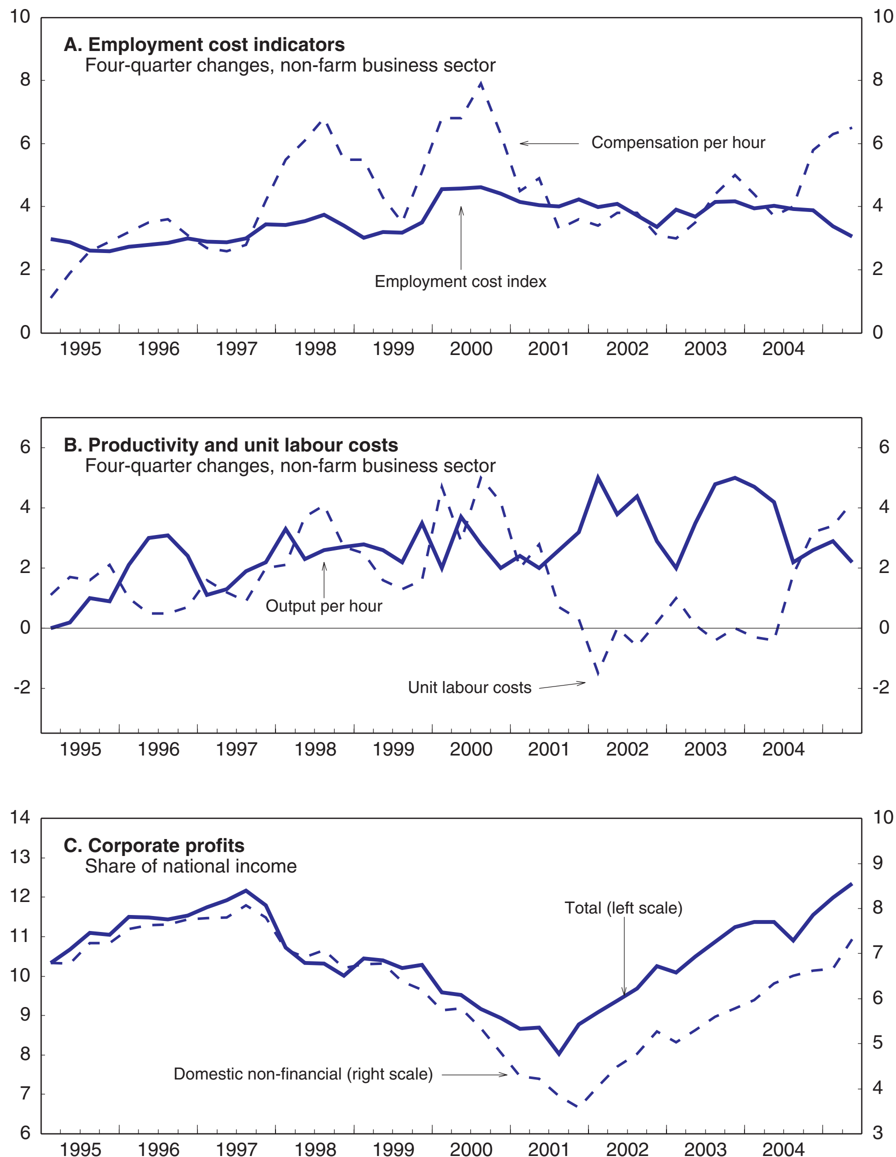
Source: Bureau of Economic Analyses, Bureau of Labor Statistics and Board of Governors of the Federal Reserve System.

development are still not well understood. To a large degree, the gains seem to have been related to more effective use of capital equipment that had been acquired earlier and to organisational innovations induced by firms' reluctance to commit to increased hiring in the face of uncertainties. Over the past year or so, productivity growth has slowed sharply, but at around 2% it has been in line with the pace of the late 1990s and well above rates that had prevailed during the preceding two decades. Still, the deceleration has entailed a pick-up in unit labour costs, following about two years of decline, although wage increases have changed little despite higher headline inflation. The renewed rise in unit labour costs has not stopped the increase in the profit share, which has regained its previous 1997 peak, since businesses have been able to pass on higher input prices. Still strong growth of corporate profits has allowed firms to finance higher capital spending with internal funds. Higher corporate net lending, which has lasted for longer than in previous cyclical upswings, along with unprecedented borrowing from foreigners (see Chapter 4), has offset a record-low household saving rate and a large fiscal deficit (see below).

Financial conditions have remained relatively easy (Figure 1.4). Long-term Treasury yields and mortgage rates are only a little above prior lows, and the same is true for spreads of corporate yields over Treasuries. At the same time, despite the run-up in oil prices, the stock market has remained robust, although the upward trend of stock prices has petered out this year, and they are far from their 2000-01 peaks. According to survey evidence, commercial banks have eased terms and standards on business loans both in response to the improving economy and increased competition from other banks and non-bank lenders. The effective exchange rate had been on a downward trend since the beginning of the recovery, though with some interruptions, before strengthening again this year. Despite the lower valuation of the dollar, the current account deficit has reached new record levels, as both the real foreign balance and the country's terms of trade have deteriorated. As discussed in Chapter 4, even if it resumes, exchange-rate depreciation would likely need to be accompanied by supportive policy moves – both in the United States and in other countries – to achieve a smooth and sustained reversal in the US external position (absent a crisis scenario).

Figure 1.3. **Labour costs, productivity and profits**

Per cent

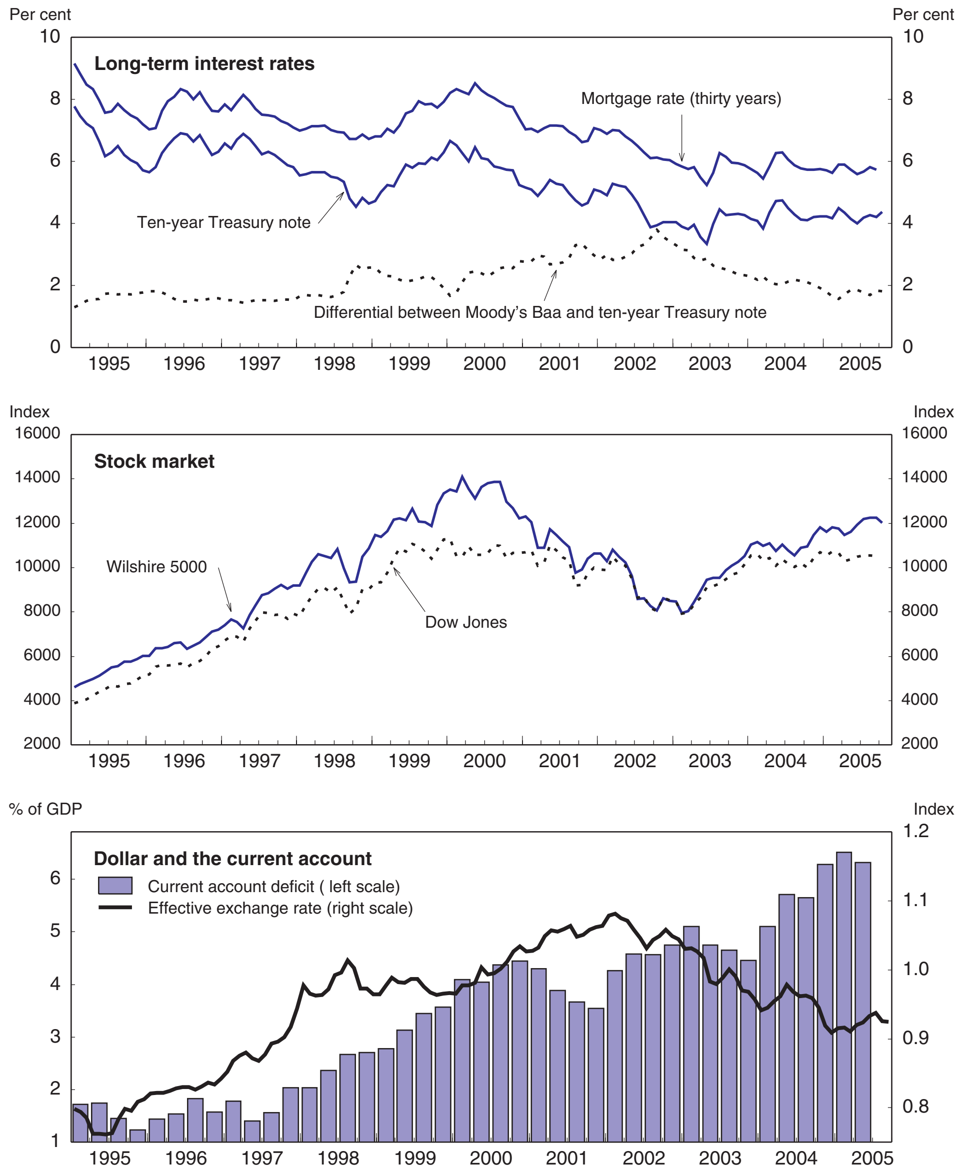


Source: Bureau of Economic Analysis and Bureau of Labor Statistics.

The macroeconomic policy stance

Monetary policy has successfully balanced the need for supporting activity and preserving price stability. After having injected extraordinary amounts of stimulus over the downturn, the Federal Reserve appropriately reversed course in mid-2004 as the expansion became increasingly self-sustained and deflation risks receded, and it has since raised the federal funds rate in 25 basis-point steps from 1 to 3¾ per cent. The authorities' commitment to price stability has ensured that inflation expectations have remained fairly well anchored in the face of substantial shocks to energy and other commodity prices (Figure 1.5). Measured by the difference between nominal and index-linked bonds, they

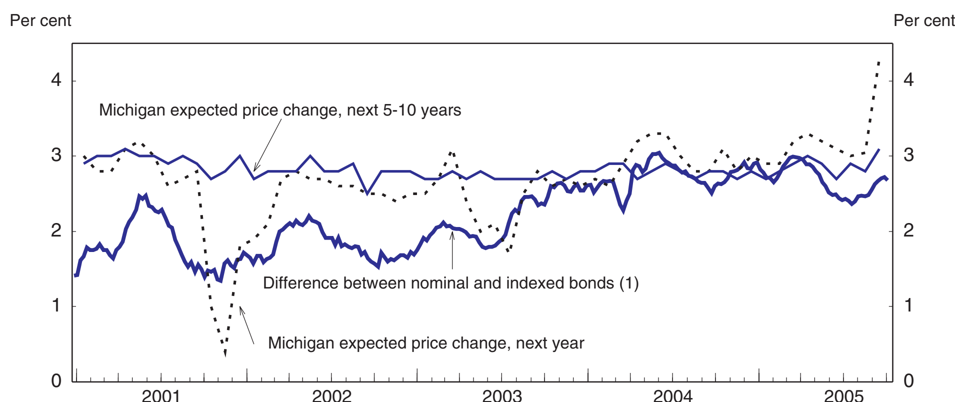
Figure 1.4. **Financial indicators and current account**



Source: Board of Governors of the Federal Reserve System, Bureau of Economic Analysis, Thomson Financial.

moved upward through mid-2004 but have fluctuated in a narrow range since then. According to survey data, they have been even more stable, showing little variation over the past five years (except for a jump in short-term expectations following Hurricane Katrina). Although a great deal of the stimulus has been removed since mid-2004, the federal funds rate is still low in real terms and remains below most estimates of its neutral level. Moreover, monetary tightening has been blunted by persistently low long-term interest rates (Box 1.2), augmenting the need for further policy moves. Another problem complicating the task of policymakers is uncertainty regarding remaining slack in labour markets associated with unusual behaviour of labour-force participation (see Chapter 5).

Figure 1.5. **Inflation expectations**



1. Difference between the 10-year constant-maturity Treasury bond and Merrill Lynch Treasury index-linked bond. The indexed bond used in the calculation changes in January each year to maintain a constant maturity.

Source: Board of Governors of the Federal Reserve System and Thomson Financial and University of Michigan.

Fiscal policy has become slightly restrictive in terms of the change in the structural budget balance. The federal budget position stabilised in FY 2004, with the unified deficit amounting to 3½ per cent of GDP as in the year before. This outturn was significantly better than expected, and recent data suggest renewed better-than-expected performance in FY 2005, when the deficit appears to have fallen to just over 2½ per cent of GDP. This reflects the unanticipated buoyancy of personal and especially corporate tax revenues, outweighing higher-than-planned spending. Cyclically adjusted, the budget deficit has changed relatively little since 2003, following a negative swing of more than 5 percentage points of GDP from 2000. OECD projections suggest a renewed rise in both the cyclically-adjusted and actual deficit in FY 2006, even with unprecedented restraint in non-defence discretionary spending as budgeted. This is attributable to the introduction of the Medicare prescription drug benefit, the assumptions of further (albeit declining) supplemental defence appropriations and of a continuation of the current limited relief from the Alternative Minimum Tax and, last but not least, spending related to recovery following the recent hurricanes (Congress has already appropriated $62 billion, about ½ per cent of GDP). State and local budgets have also improved somewhat. Including them, the general government financial deficit (NIPA definition) has probably fallen by 1 percentage point to 3½ per cent of GDP from calendar-year 2003 to 2005, but it is now likely to widen again somewhat in 2006.

Near-term prospects and risks

The near-term outlook for the US economy is favourable (Table 1.3). Despite the significant disruption of energy production and related price increases, the macroeconomic consequences of Hurricanes Katrina and Rita are likely to be transitory. Real GDP is expected to grow about half a percentage point less over the second half of 2005 as a result of the hurricanes, with most of that slowing occurring in the third quarter. It should return to its previous trend by early 2006 and subsequently rise above that trend as rebuilding raises economic activity, despite the adverse effect of higher energy prices on households' disposable income and spending. At the same time, the fundamental factors that have supported activity so far should carry forward into 2006, sustaining a continued

Box 1.2. **Why are long-term interest rates so low?**

While in all previous tightening periods since World War 2 long-term interest rates had increased noticeably after one year, this time, abstracting from some fluctuations, they have even fallen since the Federal Reserve began to raise the federal funds rate in mid-2004. This is particularly surprising, since there are several factors that should be putting upward pressure on long-term yields: the US government is projected to continue to run a sizeable fiscal deficit over the medium term (see Chapter 2), implying significant issuance of government bonds; and technological change seems to have raised the trend growth rate of productivity, increasing the rate of return on capital and hence equilibrium interest rates. A number of explanations have been put forward for this conundrum. Low bond yields are a global phenomenon (possibly associated with a "savings glut", see Chapter 4), but in the United States they also reflect monetary conditions that are still easy albeit decreasingly so, and the gradual expected pace of tightening made possible by a high level of monetary policy credibility. As noted, in contrast to earlier episodes of monetary tightening, expectations of future inflation have remained well anchored, even as markets project a slow withdrawal of stimulus. As long-term rates reflect the expected future path of short-term rates (plus a premium for liquidity and risk), the slow pace of anticipated tightening should have helped to hold long-term rates down, but that tightening should still have been accompanied by some rise, unless long-term inflation expectations change, which has not been the case, or the premium changes. Indeed, low term premia in distant forward rates seem to be a particularly important contributor.

Beyond the expected path of monetary policy, and the possibility that markets are simply mispricing these securities, current yields could signal that market participants have marked down their view of economic growth going forward, although this interpretation does not mesh well with the development of stock and exchange markets and credit spreads. Some analysts have emphasised the subdued overall business demand for credit in the United States and the apparent eagerness of lenders, including foreign investors, to provide financing. In particular, heavy purchases of longer-term Treasury securities by foreign central banks have often been cited. Recent Federal Reserve research concludes that, controlling for various macroeconomic factors, the yield on 10-year US Treasury notes would be 150 basis points higher had there been no foreign flows into US bonds over the past year, 60 basis points of which is attributable to official inflows. But this raises the question why yields on non-US debt instruments are also so low. Greater risk aversion since the 2000-01 equity market decline may also have contributed to increasing demand for, and moderating yields on, government bonds, although spreads between corporate and government bonds have tended to narrow. In addition, regulatory changes such as those encouraging a closer match between the duration of assets and liabilities of pension funds may have bolstered demand for long-term bonds. Finally, it has been pointed out that globalisation has meant a decline in "home bias"; that is a larger share of the world's pool of savings is being deployed in cross-border financing, although this is a longstanding trend and can probably not do much to explain the behaviour of long-term interest rates over the past year in the face of rising short-term rates.

healthy expansion slightly above potential output growth. Monetary policy is still accommodative, albeit decreasingly so, and financial conditions more generally continue to be advantageous for households and firms. The fiscal stance is likely to become somewhat expansionary again, given government support for recovery and rebuilding following the hurricanes. Profits have been rising briskly, and corporate borrowing costs

Table 1.3. **Near-term projections**

Percentage change over previous period, volume terms (chained 2000 dollars, saar)

	2004 Q4	2005 Q1	2005 Q2	2004	2005	2006
Private consumption	4.3	3.5	3.4	3.9	3.4	2.9
Government consumption	–0.1	2.8	0.2	2.1	1.7	1.5
Gross fixed investment	7.0	5.4	10.4	8.4	6.9	5.9
Private residential	1.6	9.5	10.8	10.3	6.7	2.1
Private non-residential	10.4	5.7	8.8	9.4	8.0	7.6
Government	6.0	–2.5	14.6	2.3	3.8	7.7
Final domestic demand	4.1	3.7	4.2	4.4	3.8	3.3
Stockbuilding[1]	0.0	0.3	–2.2	0.4	–0.3	0.2
Total domestic demand	4.1	4.0	2.1	4.7	3.5	3.4
Exports of goods and services	7.1	7.5	10.7	8.4	7.3	8.2
Imports of goods and services	11.3	7.4	–0.2	10.7	5.8	6.0
Foreign balance[1]	–1.0	–0.4	1.1	–0.8	–0.2	–0.1
GDP at market prices	3.3	3.8	3.3	4.2	3.5	3.5
GDP price deflator	2.7	3.0	2.6	2.6	2.6	2.5
Private consumption deflator	3.1	2.3	3.3	2.6	2.9	2.7
Output gap	–0.6	–0.4	–0.3	–0.8	–0.3	0.0
Potential output	3.1	3.0	3.0	2.9	3.0	3.2
Unemployment rate	5.4	5.3	5.1	5.5	5.1	4.9
Federal funds rate	2.0	2.5	2.9	1.3	3.2	4.5
Ten-year Treasury note rate	4.2	4.3	4.2	4.3	4.3	4.4
Net lending of general government						
$ billion	–513.4	–451.0	–421.0	–553.8	–443.0	–519.0
Per cent of GDP	–4.3	–3.7	–3.4	–4.7	–3.6	–3.9
Current account balance						
$ billion	–753.4	–794.7	–782.6	–668.1	–813.8	–920.0
Per cent of GDP	–6.3	–6.5	–6.3	–5.7	–6.5	–7.0
Household saving rate[2]	2.3	0.5	0.1	1.8	0.2	0.8

1. Contribution to GDP volume growth.
2. OECD definitions.

Source: Bureau of Economic Analysis and OECD estimates.

are low. Household net worth has increased with the sharp rise in house prices and the rebound in equity prices, exceeding its previous 1999 peak level, and this should help support consumer demand, although households might want to rebuild their savings rate somewhat. Absent a significant further increase in oil prices, the drag from their recent run-up should wane. The lagged effects of the decline in the exchange rate until late 2004 should underpin exports for a while, though probably not enough to prevent a further deterioration in the foreign balance, the more so since surging energy prices are raising import costs. Economic growth will likely be sufficient to generate substantial increases in employment, but a reversal of the decline in labour-force participation since 2001 would tend to hold up the unemployment rate. While tighter resource utilisation may put modest upward pressure on core inflation, with the effects of higher oil prices and exchange-rate depreciation diminishing, the prospects for headline inflation returning to the 2 to 2½ per cent range appear good.

Even though such a soft landing of the economy is the most likely outcome, there are a number of risks to this favourable scenario. With little economic slack left, both underlying and headline inflation could continue to pick up, requiring more pronounced monetary tightening, in particular if oil prices continue to rise. Moreover, a lack of progress

in unwinding major economic imbalances – in particular the fiscal and external deficits – that have persisted for some time may have adverse side effects. Stalling budget consolidation due to insufficient public-spending restraint and a further rise in the large external deficit and associated debt could lead to a backup in long-term interest rates. On the other hand, an end to the boom in house prices, let alone a sharp correction, could entail a retrenchment in household expenditure that has been underpinned by rising housing wealth. This could lead to a loss of investor appetite for dollars.

Challenges over the short and medium term

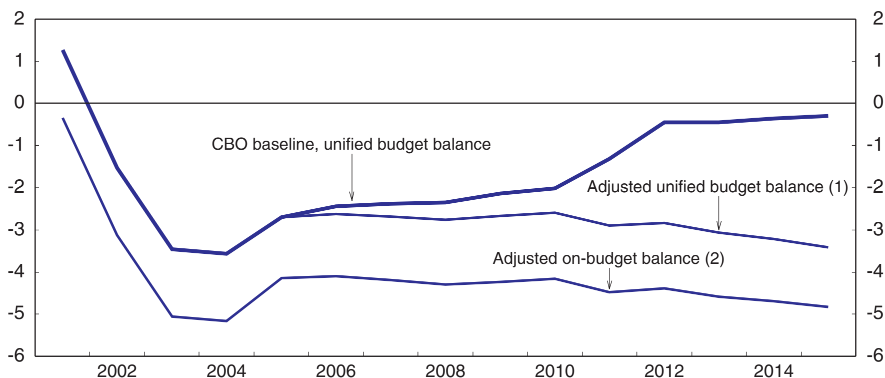
The medium-term outlook for the economy also looks auspicious, given the economy's remarkable capacity to adjust. Nonetheless, there are a number of challenges that should be addressed to ensure a sustained recovery and continued good economic performance. They are related primarily to the lack of domestic saving in the context of the large imbalances mentioned above and also concern some structural policy areas where reforms would seem desirable. Some of these challenges are reviewed below and then discussed in more detail in the following chapters of the *Survey*.

Ensuring fiscal sustainability and budgetary discipline

As noted, federal finances have improved more rapidly than projected. This reflects the unanticipated buoyancy of personal and corporate tax revenues. However, after adjusting the latest baseline scenario of the Congressional Budget Office for plausible policy outcomes (except for the short-term effects of hurricane-related spending), the unified budget deficit is likely to remain close to 3% of GDP for the coming ten years (Figure 1.6). Beyond that horizon, the outlook deteriorates rapidly due to the spending pressures emanating from entitlement programmes as the baby boom generation retires. The projections illustrate how difficult it will be to prevent a further increase in public debt relative to GDP. The Administration has emphasised discretionary spending restraint, although options are limited as long as defence-related expenditure continues to grow, and reform of the entitlement programmes, which are clearly in need of restructuring. But spending restraint alone is unlikely to suffice. How to raise adequate revenues in an

Figure 1.6. **Baseline and adjusted federal budget surplus**

Fiscal years, per cent of GDP



1. Adjusted for alternative policies; see Chapter 2.
2. Adjusted surplus excluding Social Security trust fund surplus.

Source: Congressional Budget Office (2005), *The Budget and Economic Outlook: An Update*, Washington, D.C., August.

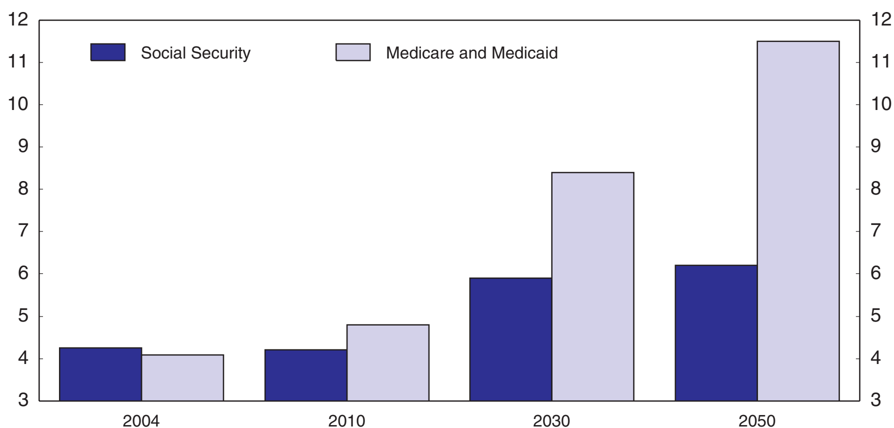
efficient and equitable way remains an area of policy concern (Chapter 2). Fiscal rules of some form, such as the expired provisions of the Budget Enforcement Act, may also help restore budget discipline and fiscal sustainability.

Beyond the next ten years, the federal budget outlook is dominated by the increases in spending on the three large entitlement programmes, Social Security, Medicare (for the elderly) and Medicaid (for the indigent). As shown in Figure 1.7, under current programme rules, expenditure on Social Security is likely to rise from 4¼ per cent of GDP at present to about 6¼ per cent from 2030. The outlook for Medicare and Medicaid is considerably worse. Federal spending on these two programmes is expected to nearly triple, from 4% of GDP currently to 11½ per cent by 2050, in no small part due to the addition of the prescription drug benefit to Medicare. The present focus of official attention is nonetheless on Social Security reform, postponing the arguably more pressing and complicated matter of health system reform. One issue in the context of Social Security is how to address the present actuarial imbalance, which is worth nearly 2% of taxable payroll on average over the next 75 years, but about three times as much at the end of that horizon. With the predicted change in demographics, it is inevitable that the returns in a pay-as-you-go system decline, and the challenge is to maintain the safety net role of the system without making it increasingly unattractive for higher-income workers and thus eroding its political support. Beyond that, the basic drawbacks of a pay-as-you-go system, *i.e.* its low rate of return under current projections and the fact that it permanently reduces the nation's capital stock and hence national income (see Chapter 2), have led to a search for alternative ways to partially pre-fund the programme. Pre-funding, if it were to occur, should aim at increasing national saving, while providing the strongest incentives to those populations most in need of increasing their retirement provision.

At the same time as the aging of the population is beginning to put upward pressure on spending, deficiencies in the federal tax system are becoming more severe. Over the nearly two decades since the tax reform of 1986, the base of the personal income tax, which accounts for 40% of federal revenues, has been narrowed while, until 2001, marginal rates were rising. The reductions in statutory rates in 2001 and 2003, while beneficial in

Figure 1.7. **Long-term projected entitlement spending**

Per cent of GDP[1]



1. Intermediate spending path.

Source: Congressional Budget Office (2003), *The Long-Term Budget Outlook*, Washington, D.C., December.

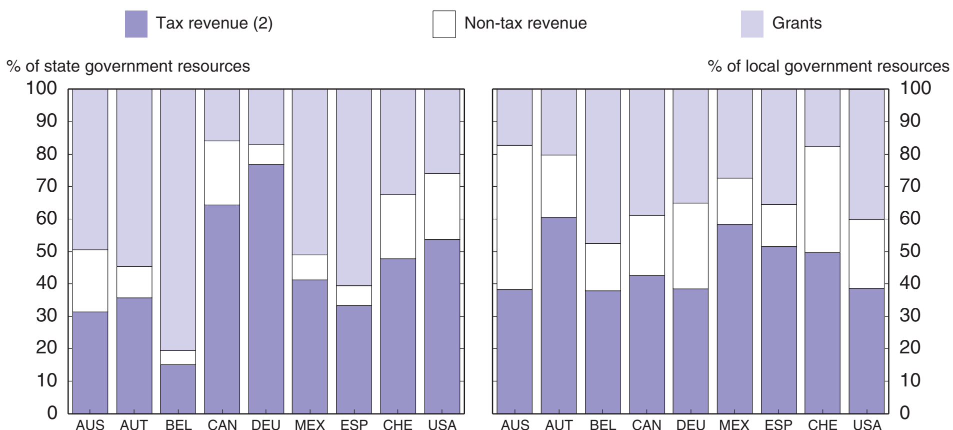
themselves, were not accompanied by any base broadening, leaving all the existing distortions and complexities in place. One of the most obvious is the favourable treatment of residential over alternative forms of investment, but numerous other exemptions and deductions are also of questionable merit. The current unequal treatment of different kinds of investment, as well as the recent attempt to partially integrate the treatment of capital and labour income, raises the more fundamental question whether taxation should focus on income or consumption as the base. The current system has elements of both. Efficiency considerations point to the superiority of exempting capital income from taxation, thus shifting towards a consumption base, but this could be accomplished in numerous ways, with quite different implications for revenues. Another pressing issue is the personal alternative minimum tax (AMT), a parallel tax code to the personal income tax that was intended to prevent a few wealthy taxpayers from avoiding tax altogether but is now affecting increasing numbers of middle-income households. The AMT blunts numerous provisions of the regular tax code, effectively rescinds some of the recent statutory tax reductions and increases the costs of compliance. The taxation of corporations has also become increasingly distorting, with statutory rates remaining high by international comparison, while the proliferation of tax shelters has narrowed the base and complicated compliance and administration enormously. Tax reform will therefore have to aim at making the tax code more efficient, notably by simplifying it, so as to raise the necessary revenue at minimum economic cost.

Improving fiscal relations between levels of government

Fiscal autonomy of sub-national governments in the United States is considerable: the share of states' own revenues in their total revenues is the third-highest among the nine OECD countries with a federal structure (Figure 1.8). Although the states enjoy a large degree of fiscal autonomy on both the revenue and expenditure side, there are nonetheless substantial linkages between the federal and state governments, mostly in the form of grants. One particular characteristic of fiscal relations between levels of government in the United States is that there is relatively weak redistribution across states (within states,

Figure 1.8. **Sub-national government financial resources in federal countries**

Percentage of total financial resources, 2002[1]



1. 2000 for Mexico; 2001 for Switzerland and United States.
2. Tax revenues include social contributions.

Source: IMF, *Government Finance Statistics*.

redistributive aspects are stronger). There exist, for example, no fiscal equalisation schemes among states, nor between the states and the federal government. Federal grants to the states are all earmarked. One innovation over the past decade has been the use of lump-sum grants in the welfare area in exchange for greater devolution of programme design subject only to strict federal work requirements. This has sparked a wave of experimentation among the states, which is thought to have been instrumental in the remarkable decline in caseloads. Because the initial size of the lump-sum grants was based on (higher) pre-reform caseloads, the programme has remained well funded so far; but an important issue going forward is how to adjust those funding levels over time. In stark contrast, Medicaid has posed tremendous strains on both federal and state budgets. The current structure of the matching grant has repeatedly led to tensions between the two levels of government, and, as age-related spending pressures are intensifying, the question arises whether the states can continue to carry so large a share of what inherently is a redistributive programme. The federal role of financing primary and secondary public education is relatively minor, but recent changes to grant conditions have had a surprisingly strong impact on states' education systems, causing controversy over whether the states' costs of complying with these conditions are adequately funded. Nevertheless, the goals of those changes – to improve transparency in measuring schooling outcomes and ultimately outcomes themselves – are widely shared, and given the externalities usually thought to characterise the field of education, an increased federal role might be called for.

The marked decline in state revenues during the period of economic weakness in the early part of this decade highlighted the vulnerability of state finances which, besides federal grants and user fees, rely largely on personal income and sales taxes. The substantial reliance of state and local governments on their own tax revenues has the advantage of improving accountability through the link between their revenue and expenditure decisions as long as the burden of their taxes does not fall on other jurisdictions. However, sub-national governments' ability to raise taxes is proscribed by the inter-state mobility of tax bases. For example, household mobility limits the progressivity of states' personal income taxes. Moreover, although personal income-tax receipts have historically grown in line with the size of the economy, their run-up during the boom of the late 1990s may have led states to overestimate their permanence when they cut tax rates. Under the fiscal rules discussed below, these tax cuts were difficult to reverse once receipts started to decline. Even more problematic are states' corporate income and sales taxes. Tax-base mobility has meant that the corporate income tax has increasingly become a discretionary, and hence distorting, tool for states to use to attract businesses, while its yield has declined and administration and compliance are very costly. The existing sales taxes are intended to cover final consumption, but the fact that little is known about the ultimate use of many goods and services has led to substantial and arbitrary narrowing of tax bases, most importantly by the exclusion of almost all services. Apart from an associated sharp fall in revenue relative to GDP since the 1980s, the resulting relative price distortions combined with tax cascading are likely to have caused substantial welfare losses. The property tax, which is the most important revenue source for local governments, is often considered to be an ideal tax for the latter on the basis of the benefits principle of taxation. In practice, however, local property taxes have met strong resistance, which has led to stringent tax limitations in many states, eroding local governments' fiscal

positions. The various problems associated with sub-national taxes call for fundamental reforms.

Nearly all states operate under balanced budget requirements, but there is great variation in their stringency. In the strictest cases, they prohibit issuing general obligation debt, which forces state governments to keep their operating budgets in continuous balance as the fiscal year progresses or else rely on reserves, such as "rainy-day" funds, to absorb shocks. The desirable size of such funds and the political feasibility of accumulating sufficiently large reserves during periods of strong revenues are important questions for state governments. Recent experience shows that the funds accumulated prior to the revenue drop in 2001-03 were in many states insufficient to protect them from having to cut core services, notably on Medicaid, during the very period when demand for such services rose sharply. In some states, the ability to accumulate rainy-day funds is restricted by limitations that force them to return budget surpluses to taxpayers instead of saving them as buffers. Tax and expenditure limitations are intended to address the problem that balanced budget requirements alone do not curtail the size of the state budget. However, rules in place in several states that limit the growth of revenues and appropriations to some fixed threshold are prone to having undesired effects on spending outcomes. Hence, fiscal rules at the sub-national level are probably also in need of improvement.

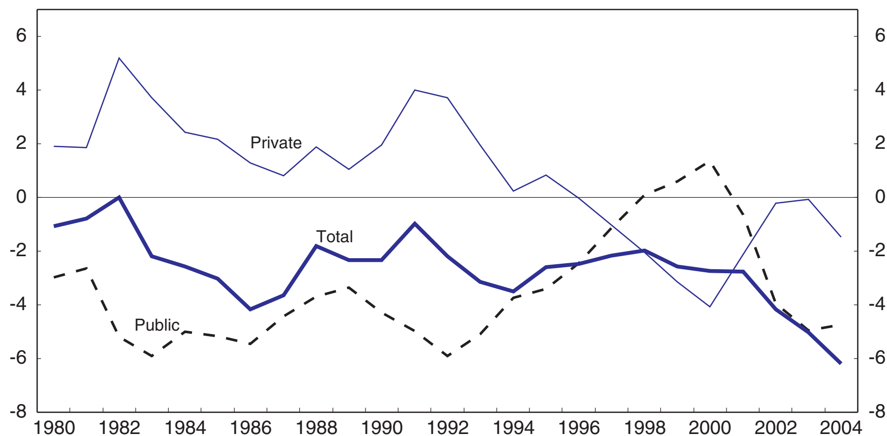
Coping with current account adjustment

Having broken historical records already some time ago, the current account deficit has continued to widen unabated. In the first half of 2005, it reached nearly 6½ per cent of GDP and is projected to climb to around 7% before the end of 2006. The unprecedented magnitude of these deficits raises the question for how much longer they can be sustained. To some extent, the external balance reflects good news: contrary to previous cyclical experiences, throughout the 2001 recession and the ensuing expansion the United States has enjoyed robust productivity growth, and the implied prospects for real returns on capital mean that the country has remained one of the most attractive destinations for foreign investment. Indeed, despite the record deficit, the dollar has recently strengthened, presumably in part driven by disappointing economic performance in other countries relative to the United States. Moreover, with the vast increase in the size and integration of global capital markets, the financing of a deficit of even this magnitude has progressed without any difficulties so far. Nonetheless, the external imbalance reflects not only attractive returns on investments in the United States, but also a profound lack of domestic saving in both the public and the private sectors, insufficient to cover their investments (Figure 1.9). Net national saving, which averaged about 5% of GDP from 1980 to 2000, fell to nearly zero in early 2003 and has recovered only a little since. On present trends, therefore, the benefits accruing to capital of the strong productivity performance will be reaped less and less by US residents, with an increasing share flowing abroad as factor payments.

The imbalances have persisted for some time and could well continue for a while. There are examples of countries that have maintained substantial current account deficits for long periods: the United States itself in the 19th century is one, Australia more recently another. However, the present configuration is probably not sustainable indefinitely. At some stage, global investors will require higher expected rates of return as their portfolios become increasingly concentrated in dollar assets. Nonetheless, there are reasons to believe that the ensuing adjustment process will be orderly. The world's regions are co-dependent on the United States as a consumer and borrower of last resort in a period of

Figure 1.9. **Saving/investment balance**

Per cent of GDP



Source: Bureau of Economic Analysis.

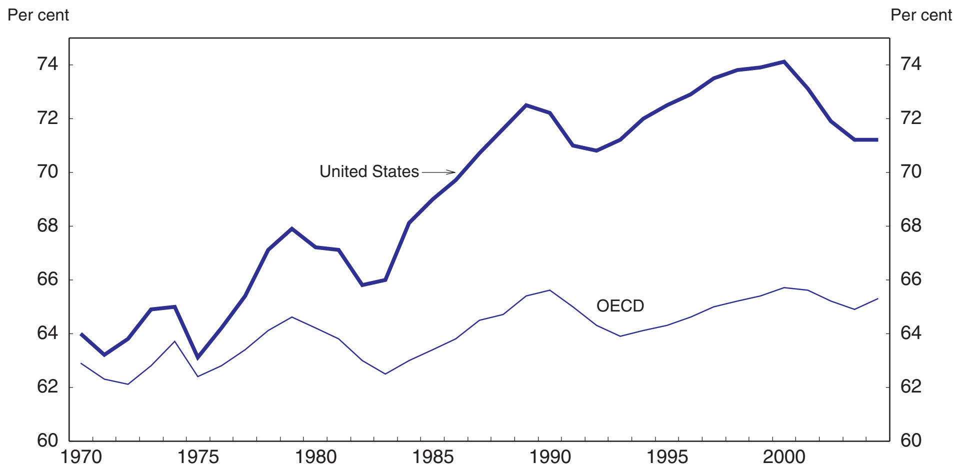
excess desired savings (see Chapter 4), and changes in the demand for dollar assets are more likely to occur gradually, given the scarcity of alternatives and favourable features of the US economy (such as deep capital markets, flexible factor markets, a healthy investment climate and robust productivity growth). The challenges for policymakers are, therefore, to seek out and remove all anti-saving biases in public policies and to avoid any actions that would undermine these advantages. In particular, the economy's impressive adjustment capacity is likely to prove particularly important, since an unwinding of the current account deficit will imply moving a substantial amount of resources from the non-tradables to the tradables sector. This would be facilitated by upgrading average skill levels and reforming the corporate bankruptcy law, for example.

Addressing problems in the labour market

From the early 1970s to 1990, the share of the working-age population that was employed rose sharply in the United States, while it increased only modestly in the OECD as a whole (Figure 1.10). This reflected a decline in the inactivity rate rather than reduced unemployment. Following a further cyclical rise during the sustained expansion of the 1990s, the employment rate peaked in 2000 but has since fallen back to about the level recorded 15 years ago. While the gap against the OECD average remained broadly stable over that period, the number of member countries with higher employment rates than the United States increased significantly (to about one-third). Although job growth resumed in 2004, it has begun to lift the employment rate only in the past few months. Weak employment growth is the reflection of stronger productivity growth. While the acceleration in productivity should not impinge on employment in the long run, the atypical weakness of labour-force participation is a matter of concern. The issue is to what extent it reflects cyclical or structural developments. This has implications for the economy's growth potential, and related uncertainties will present a challenge to monetary policy. If the workers who dropped out of the labour force during the recession begin returning to it in substantial numbers in the period ahead, then considerable gains of output and employment will be associated with little further tightening of the labour

Figure 1.10. **Employment rates**

Share of persons of working age in employment (15 to 64 year-olds)



Source: OECD, Employment Outlook 2005 database.

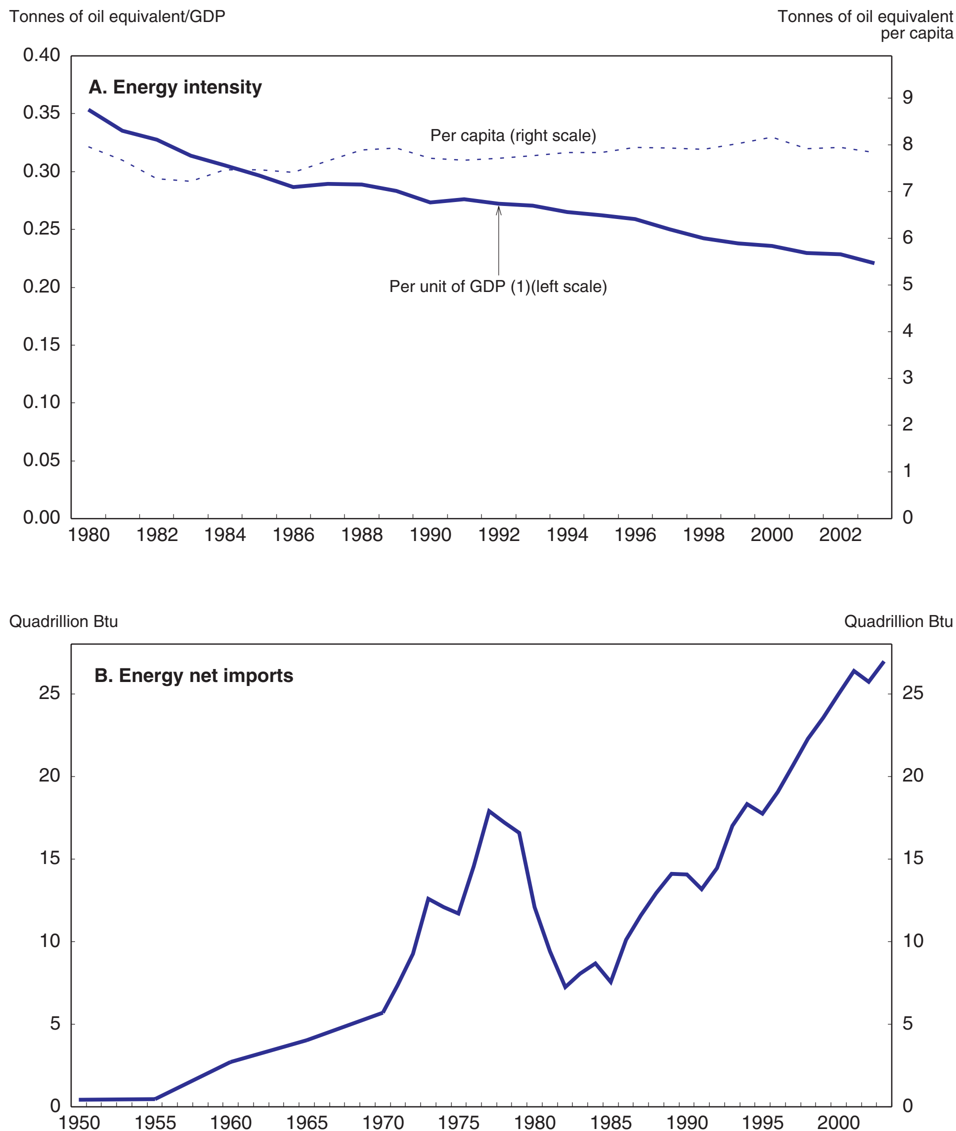
market and limited pressures on costs and prices. If, in contrast, the labour market attachment of those out of the labour force is weak, then they will be less likely to seek jobs, which means that gains in output and employment could be associated with greater resource scarcity and a step-up in labour cost pressures.

The development of labour-market participation is also a challenge for structural policies. One reason for depressed participation rates seems to be that there are incentives for the low skilled to take up disability rather than unemployment benefits. This is problematic, since disability beneficiaries are less likely to return to the labour force when the economic situation improves. Over time, disability application rates appear to have become more responsive to adverse cyclical shocks, partly because of a gradual increase in the replacement rate associated with the benefit for low-skilled workers. The issue is how to reduce the work disincentives for the disabled that result from the design of and the interaction among various government programmes. In general, US labour market policy has been quite flexible and innovative. Spending on active labour-market measures is low by international comparison, but the participation in such programmes is relatively high, although there are some concerns that local operators may be "gaming" the system in order to improve their recorded performance. In the field of trade-adjustment assistance, a new programme provides wage insurance but limits this option to older workers. If the impact of this programme proves to be positive, there may be a case for extending it to younger and service-sector workers, if not all dislocated workers.

Dealing with energy and environmental issues

After a period of broad stability, oil and gas markets have been subject to a degree of strain not experienced for a generation. This has focused attention again on the need for tackling problems in this area. A major concern in the United States has been the increasing reliance on foreign sources of such energy. Although energy use has been on a downward trend relative to GDP and has broadly tracked population growth, net imports have risen strongly again after a temporary decline in the early 1980s (Figure 1.11). They now account for about one-quarter of overall energy use and two-thirds of oil

Figure 1.11. **Energy intensity and net imports**



1. Total energy consumption per unit of GDP, tonnes of oil equivalent, $2 000, 2000 purchasing power parities.

Source: Energy Information Administration, *Annual Energy Review* 2004; OECD Environment database and OECD Annual National Accounts.

consumption. As shown in Chapter 6, energy intensity in the United States – both per unit of output and per capita – is much higher than in the other OECD regions. The Administration's strategy and the energy bill recently passed by Congress focus on encouraging domestic energy supply, with relatively limited attention placed on curtailing demand. Energy supply is dominated by fossil fuels, while renewable sources of energy remain relatively insignificant, with their share falling since the mid-1990s. This is problematic both for energy security and environmental reasons. Moreover, it is difficult to see how reliance on energy imports can be reduced without stronger use of economic instruments, notably taxation, on the demand side. Another concern is the state of the

electricity sector. Among OECD countries, the United States ranks only 19th in surveys of the quality of electricity supply (in terms of interruptions and voltage fluctuations), and the 2003 blackout in the northeast of the country (and Canada) highlights the need for improving the electricity grid and strengthening regulation and supervision.

In some respects, environmental quality in the United States has improved noticeably. This is above all the case for air pollution, which has been reduced dramatically since the 1970s. That said, air pollution intensity (both relative to GDP and per capita) is still quite high compared to other OECD countries, and coal-fired power stations and motor vehicles contribute to persistent regional pollution problems. The more than 200 million light vehicles on US roads produce on average almost twice as much carbon emissions per vehicle as in most other OECD countries, due in part to higher vehicle use. Indeed, low taxes on motor vehicle fuels translate into lower prices at the pump, and thus create little incentive for energy conservation. Overall, greenhouse gas emissions intensity is very high, with the United States accounting for over one-fifth of world emissions. While reducing emissions, the challenge for the United States is to stabilise and then reduce its greenhouse gas emissions. It is questionable whether this will be possible by relying primarily on voluntary and regulatory actions and the promotion of technological progress, while keeping the use of economic instruments – such as tradable permits or taxation – to a minimum.

Continuing challenges in health care, education and other areas

There are number of other areas that need attention and where reform efforts or policy changes should be considered. While the resilience of the economy in the face of repeated shocks has been remarkable by international comparison and structural indicators in general show the United States in a favourable light, there are some areas where performance is sub-par (Table 1.4).

- In particular, despite spending much more on *health care* than most other member countries, both per capita and in relation to GDP, many measures of health outcomes are only average, partly reflecting the fact that insurance coverage is among the lowest in the OECD (some 45 million residents are uncovered), despite the positive effect of the introduction of Health Savings Accounts. As noted, although much of the recent debate has been on Social Security, federal health care expenditure has been rising at a much faster pace, reflecting cost pressures in the broader US system. Given the new prescription drug benefit and the rise in the elderly population in coming decades, the unfunded liability of the Medicare programme is several times that of Social Security. Further measures are thus needed to improve the efficiency of the health system,

Table 1.4. **Structural performance**[1]

	Ranking among	
	G7 countries	All 30 OECD countries
Productivity per hour, level	2nd	7th
R&D intensity	2nd	6th
Infrastructure (Global Competitiveness Report)	3rd	6th
Upper secondary graduation rates	5th	15th (out of 20)
Health care coverage	5th (out of 5)	23rd (out of 23)

1. 2003 or last available year.

Source: OECD and *Global Competitiveness Report 2004-2005*, World Economic Forum.

including malpractice reform which, according to some studies, could reduce cost pressures significantly.

- Another area where progress is needed is *education*. The outcomes of the compulsory education system are only average, despite much higher spending per pupil than in most other OECD countries; rising school enrolment notwithstanding, upper-secondary graduation rates are relatively low by international comparison; and there is evidence that the productivity of the system has fallen.

Even though several aspects of the health and education systems are dealt with in the following chapters, these two areas, in particular, need to be closely monitored and will deserve a more comprehensive treatment in future surveys. Annex 1.A1 gives an overview of progress in structural reform, which shows that unfinished business also exists in other fields, such as agricultural support and corporate governance.

ANNEX 1.A1

Progress in structural reform

Labour markets

Previous recommendations

- Avoid increasing the federal minimum wage.
- Identify strategies to increase employment of the disabled.
- Tighten work requirement for welfare recipients.

Action taken

- The federal minimum wage has remained unchanged, but a number of states have raised their minimum wages.
- Pending legislation proposes to tighten work requirements under TANF, but without sufficient funding of child care.
- The Trade Adjustment Assistance programme has been expanded in a number of ways, including by offering older workers a temporary wage subsidy if they start a new full-time job within 26 weeks.

Education

Previous recommendations

- Bring more schools up to the standards now in place.
- Expand competition in primary and secondary schooling.
- Reduce funding disparities across school districts and reconsider the design of state programmes.

Action taken

- The 2002 No Child Left Behind Act, which provides for nationwide annual testing in grades 3 to 8, greater accountability requirements for states to remain eligible for federal grants, and increased parental choice if public schools are found to be in need of improvement, has now been implemented by the states, which have called for substantially increased federal funding for the law.

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Ageing and health care

Previous recommendations

- Take appropriate steps to secure the future of the Social Security system.
- Introduce savings accounts to complement Social Security.
- Ensure that any enrichments of Medicare (such as prescription drug benefits) do not jeopardise the programme's long-run solvency.
- Address over-consumption of health services by promoting cost-conscious decisions (*e.g.* by rolling back the unlimited tax exclusion of employer-furnished health benefits and through individual health savings accounts).

Action taken

- The Administration has made proposals to restore the Social Security programme to actuarial balance (including the "progressive indexing" of initial benefits).
- The Administration has also proposed to allow workers to divert part of their Social Security contributions into a personal account, which would lead to substantial additional federal borrowing during a transition period of several decades.
- The 2003 Medicare Modernisation Act included initiatives to introduce competition and increase efficiency in health care delivery, but these measures will be only gradually implemented and are not expected to fully offset the costs of adding an outpatient prescription drug benefit to the programme (from 2006).
- The Health Savings Accounts also introduced by the above Act have been taken up at a fast rate.

Product markets

Previous recommendations

- Improve competition in the local telephone industry. Continue mandatory unbundling for the foreseeable future and develop national standards to help states assess whether incumbents have met their unbundling obligations.
- Improve energy infrastructure, in particular in electricity transmission and generation. Make further efforts to increase regional integration of electricity markets.
- Roll back extra support given to farmers in recent years, and reverse the move away from market-based outcomes implied by the 2002 Farm Act. Ensure that the agreement on a framework for continuing the Doha trade round – including notably the commitment to eliminate export subsidies – results in reforms.

Action taken

- Unbundling of network elements has boosted competition for local voice services and provided incentives for investment and new services. A national goal of universal, affordable broadband access for all Americans by 2007 has been established, and the authorities are working to prevent inappropriate legacy regulations from applying to Internet telephone (Voice Over Internet Protocol) service.
- The Energy Policy Act of 2005 aims at improving the country's electricity grid, expanding the diversity of energy supply and enhancing energy efficiency, thereby reducing the reliance on foreign sources (see Chapter 6).

- The Administration has proposed legislative changes to reduce assistance to farmers under the 2002 Farm Act and remains committed to eliminating export subsidies in the context of the Doha trade round. It has also agreed to eliminate an import subsidy scheme for cotton exporters that the WTO found to be illegal.

Financial markets

Previous recommendations

- Reassess bankruptcy and patent laws with the aim of curbing abuses.
- Break links of government-sponsored enterprises with the federal government.
- Create independent board for and limit consulting services by auditors.
- Consider move towards principles-based accounting rules.
- Guarantee the independence of corporate boards and enhance shareholder rights.
- Require the expensing of stock options.

Action taken

- The 2005 Bankruptcy Abuse Prevention and Consumer Protection Act imposes a means test, increases barriers to householders filing repeated bankruptcies and makes it more difficult to shelter assets.
- The new rules and regulatory infrastructure to implement the 2002 Sarbanes-Oxley Act, which established an accounting oversight board, limited consulting work of audit firms and increased accountability of company executives, are still bedding in. Small firms and foreign companies have been given more time to comply with the provisions concerning internal controls and financial reporting.
- The Financial Accounting Standards Board has approved a rule requiring companies to report stock options as an expense and the Securities and Exchange Commission has issued technical guidelines for valuing options. However, the deadlines for compliance with the new rules have recently been extended.

Taxation

Previous recommendations

- Increase the limits for contributions to tax-free savings accounts.
- Eliminate deductions for mortgage interest and state and local income tax.
- Reform indirect taxation.

Action taken

- Tax-free health savings accounts were expanded by recent legislation (see above), and the creation of new tax-preferred lifetime and retirement savings schemes (that would allow to simplify and consolidate existing ones) has been proposed by the Administration.
- The President has appointed an Advisory Panel on Federal Tax Reform that is to make recommendations on how to improve the tax system in a revenue-neutral manner by 30 September 2005.

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Environment

Previous recommendations

- Consider introducing a domestic cap-and-trade system for CO_2 emissions.
- Evaluate environmental costs and benefits when providing support to agriculture.
- Increase fuel taxes in lieu of tightening CAFE (fuel economy) standards.
- Consider a carbon tax on all carbon-based energy products, including coal and natural gas.

Action taken

- While opposing efforts to reduce GHG emissions through the Kyoto protocol, the Administration has implemented policies to slow the growth of such emissions, including technology investments in carbon sequestration, hydrogen and fusion energy.
- The Administration has implemented a tightening of CAFE standards for light trucks and SUVs for the model years 2005 to 2007 and has proposed a further tightening thereafter as well as the introduction of a size-based system for such vehicles by 2011.
- The Administration's "Clear Skies" initiative sets new environmental targets for NO_x, SO_2 and (for the first time) mercury emissions from power plants with a view to cutting atmospheric emissions by one-half and two-thirds by 2010 and 2018, respectively. As the proposed legislation has stalled in Congress, the initiative is now being implemented by means of regulations, which are likely to be subject to court challenges.

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Chapter 2

Ensuring fiscal sustainability and budgetary discipline

This chapter discusses several major challenges facing fiscal policymakers in the United States. Despite recent improvements in revenues, a return to surpluses in the federal unified budget is still unlikely to materialise before age-related spending pressures gather strength in the next decade. The chapter starts by presenting the budget outlook over the next ten years under alternative scenarios and assesses the need for reviving budget rules in some form. It then examines the current debate about Social Security reform and improvements to the retirement system more broadly. Finally, it considers how the efficiency of the tax system could be strengthened.

The persistence of large budget deficits, predominantly at the federal level, and the looming budgetary pressures due to the ageing of the population have raised awareness that US fiscal policymakers have to make several fundamental choices to set public finances on a sustainable path for the coming decades. In the near term, achieving spending restraint in the annual process of discretionary appropriations has proved difficult. Some return to fiscal rules limiting new spending and revenue measures to budget neutrality, as discussed at the beginning of this chapter, may reinforce current efforts to improve the budget process. Over the longer term, however, the spending outlook is dominated by the major entitlement programmes. The projected spending increases in the Social Security programme are modest compared to those in Medicare and Medicaid: the present value of Social Security's infinite horizon shortfall is currently estimated at $11.1 trillion, as compared to $68 trillion for Medicare alone. More than one-quarter of the latter is due to the Medicare prescription drug benefit legislated in 2003. Nonetheless, Social Security reform is currently at the forefront of the US policy debate; options for reform are the subject of the second section. Even if it were possible to restrain growth in entitlement spending such that federal outlays would remain near their current level of about 20% of GDP, it would still be necessary to raise revenues in relation to GDP so as to rein in the accumulation of public debt. The current debate about federal tax reform, which is reviewed at the end of the chapter, should be an opportunity to bring federal revenues into line with projected needs while at the same time improving the efficiency of the tax system.

The federal budget outlook and budgeting process

Recent data on federal finances have surprised on the upside. The deficit in the unified budget (including trust fund surpluses) for fiscal year (FY) 2004 was 3.6% of GDP, more than ½ percentage point better than projected as of the beginning of 2004. This better-than-expected outcome was entirely due to more buoyant personal and corporate income tax receipts, a pattern which continued into the following fiscal year. Based on current projections, it is now likely that the deficit in FY 2005 will fall below 3% of GDP for the first time since 2002 before rising again in FY 2006 reflecting hurricane-related expenditures. The Congressional Budget Office's (CBO) baseline, which does not take account of the recent hurricanes, projects the deficits to decline through 2015, as shown in Figure 2.1.

By statutory requirement, however, the baseline is predicated on the continuation of current policies and other assumptions that may not be realistic predictions of future outcomes. Figure 2.1 also shows the effects of some alternative policy assumptions.[1] Whereas the CBO's baseline extrapolates current spending on military operations in Iraq and Afghanistan into the future, the first alternative shows a phase-down of military activities. This includes the $82 billion supplemental appropriations passed by Congress in May 2005 and is thereafter based on a scenario constructed by the CBO that assumes a gradual phase-down of force levels and operations from 2007 on. This scenario reduces the deficit by about ¼ per cent of GDP in 2008, and by more than ½ per cent beyond 2010.

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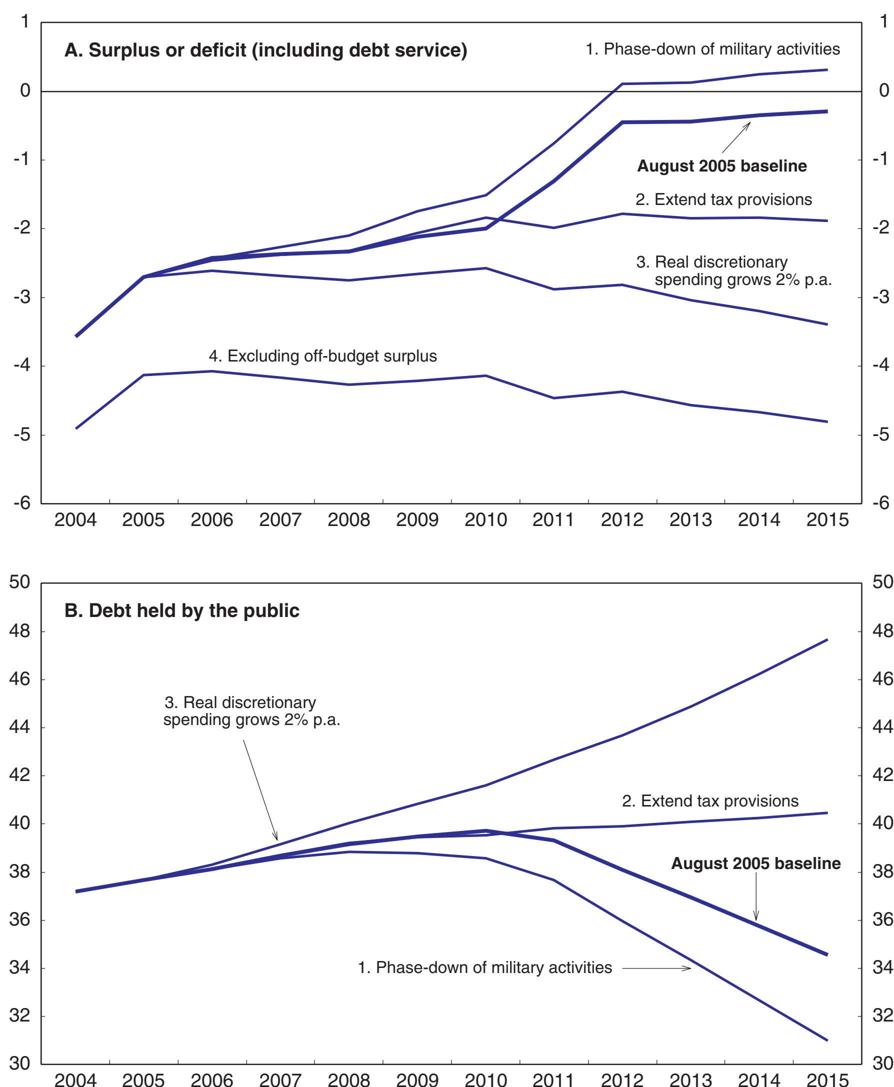
Figure 2.1. **Federal budget outcomes under alternative policies**[1]

Fiscal years, per cent of GDP



1. The alternative budget outcomes shown in the figure are cumulative; for example, the outcome for scenario 2, "Extend tax provisions", assumes the realisation of scenario 1, "Phase-down of military activities".

Source: Congressional Budget Office (2005b), *The Budget and Economic Outlook: An Update*, Washington, D.C., August and OECD calculations.

The Administration has made clear its intention of extending indefinitely the tax cuts legislated in 2001 and 2003, most of which are scheduled to expire at the end of 2010.[2] As shown by the third line, before 2010 the effects of extending the tax cuts is modest, but from 2012 on this would reduce revenues by about 2 percentage points of GDP. Although the reduction in marginal tax rates has undoubtedly had a beneficial effect on economic activity, it is unlikely that feedback effects are sufficiently strong to completely offset the substantial economic costs resulting from the increase in public debt.[3]

In view of these costs, the Administration has proposed unprecedented spending restraint in discretionary outlays outside of defence and homeland security spending.

These have decelerated, from a 9% real growth rate in FY 2002 to 2% in FY 2004, and the Administration has called for keeping them constant in nominal terms through 2009, which would imply reductions in real terms of about 2% per annum. Defence outlays, however, are still growing rapidly, even abstracting from the supplemental appropriations. Limiting the growth in discretionary spending outside of the supplemental appropriations to the rate of inflation, as assumed in the CBO's baseline, will therefore be a challenging task. The line labelled "real discretionary spending grows 2% p.a." shows the outcome if real discretionary spending excluding the supplemental appropriations were to rise at its post-1975 average pace, a rate far below the nearly 7% real growth in discretionary outlays over the past four fiscal years.

The final line, labelled "excluding off-budget surplus", shows that the *on-budget* deficit excluding the trust fund surpluses under the three aforementioned policy assumptions remains between 4 and 5% of GDP. Extending these projections beyond the 10-year window would show a rapid deterioration of the *unified* budget balance soon after 2015 as the combined trust fund surpluses diminish and turn into deficits from 2018 forward. Such projections would be increasingly meaningless, as it is widely recognised that the entitlement programmes will have to be adjusted so as to prevent the ratio of public debt to GDP from moving along an explosive path. The adjusted projections through 2015 illustrate, however, the need to bring spending and revenues into line irrespective of entitlement reform, either by curbing discretionary outlays or by raising revenues. Based on historical experience, an approach involving adjustments on both sides of the budget is likely to be the most promising.

One tool that could be helpful in this process would be a renewed commitment to budget rules in some form. The key provisions of the Budget Enforcement Act (BEA) – annual limits on discretionary appropriations and the so-called pay-as-you-go (PAYGO) requirement that new mandatory spending and revenue laws may not increase current deficits – expired in September 2002. Under those provisions, the Congress periodically established multi-year discretionary spending caps. These caps and the PAYGO requirement were enforced by "sequestration": a breach of the caps for discretionary spending would trigger an executive order reducing discretionary outlays, and a breach of the PAYGO requirements would similarly trigger cuts in certain mandatory programmes. However, with the emergence of unified budget surpluses in 1998, the political consensus for spending control weakened, and subsequently the BEA's restrictions were circumvented in a number of ways. Beginning in 1999, and in particular following the terrorist attacks of September 2001, lawmakers enacted emergency appropriations exempt from budget enforcement procedures. Moreover, for 2001 and 2002 the caps on non-emergency discretionary spending were raised by $99 billion and $134 billion, respectively, and the use of devices such as advance appropriations led to further erosion of spending discipline. Mindful that reinstating all provisions of the BEA would make it effectively impossible to make the 2001 and 2003 tax cuts permanent, the Administration proposed in its FY 2004 budget to renew all BEA provisions, but only for two years, whereas in its FY 2005 budget it proposed a five-year renewal of the discretionary caps and the PAYGO requirements for mandatory programmes, but not for revenue legislation. Attempts by the Senate in March 2004 to reinstate the PAYGO requirements for revenue legislation as well did not survive negotiations between the House and the Senate. While renewing the expired provisions would be useful, doing so would not address the problem that, in the

absence of reform, the entitlement programmes will consume an increasingly larger share of GDP.

Strengthening the retirement income system

Social Security is projected to start running cash-flow deficits around 2018 and to be unable to pay the full amount of currently scheduled benefits starting at some time between 2042 and 2052 (Congressional Budget Office, 2005a; Social Security Administration, 2005b). These projected shortfalls have been a catalyst for the current debate about how to reform the programme. The Administration has made Social Security reform its top domestic priority, and hearings are under way before the relevant committees in both the House of Representatives and the Senate. This section starts by reviewing a variety of proposals that have been made to restore the programme to actuarial balance within the existing structure. However, the Administration has argued that programme reform should be more far-reaching. It has proposed the development of personal retirement accounts so as to offer younger workers a higher return on their contributions and to strengthen beneficiaries' sense of ownership of their retirement provision (Bush, 2005). Several alternatives of changing Social Security in part to a pre-funded defined-contribution system are summarised below. Arguments about the desirable structure of Social Security need also to take into account the other existing elements of the retirement system, including employer-sponsored defined-benefit and defined-contribution plans and other tax-preferred retirement savings vehicles, which are reviewed at the end of this section.

Restoring the Social Security programme to actuarial balance

From its inception in 1935, the Social Security programme was always designed to pursue multiple and sometimes conflicting goals (see Box 2.1 for a brief description of the current programme structure). It has been remarkably successful in achieving what is probably the most important of these, namely to reduce old-age poverty. However, at its core has always been a delicate balancing act between providing a sufficient level of benefits to the poorest recipients (the "adequacy" objective) and distributing benefits in a way that recognises the different amounts of payroll taxes paid by different workers (the "equity" objective). The financing of the programme through dedicated payroll taxes rather than income taxes or other sources of general revenues was intended so that beneficiaries would feel some form of entitlement to their benefits, and therefore the programme not be seen as a welfare programme (Congressional Budget Office, 2001). While the average rate of return on the programme has declined substantially as it has matured from its inception, the impending retirement of the baby-boom generation will cause further declines. This will worsen the trade-off between the programme's social insurance objectives and maintaining benefits for higher-income workers. An important criterion in assessing alternative proposals for reducing the present actuarial imbalance is therefore how they would safeguard the social insurance aspect of the programme without eroding political support for it.

Historical data and 100-year projections for Social Security's revenues and currently scheduled outlays are shown in Figure 2.2.[4] In 2004, revenues from payroll taxes and the taxation of Social Security benefits amounted to 4.9% of GDP whereas outlays were 4.3%. The resulting cash-flow surplus, plus net interest earned on the Social Security trust fund's holdings of Treasury securities, meant that the trust fund balance rose by 1.3% of GDP over

Box 2.1. **The current structure of Social Security**

Today's Social Security programme is much more than a retirement pension programme, as its official name – Old Age, Survivor and Disability Insurance (OASDI) – makes clear. Of its two components, the old-age and survivor part (OASI) is by far the larger, accounting for about 85% of total Social Security benefits. As of May 2005 it provided benefits to 30.2 million retired workers and 9.7 million family members of retired or deceased workers. The disability part (DI) currently covers 6.4 million disabled workers and 1.8 million family members. OASDI is mainly financed by a 12.4% payroll tax, split evenly between workers and their employers, on earnings (*i.e.* labour income) up to a maximal annual amount, which is indexed to average wage increases and stands at $90 000 in 2005; earnings above this taxable maximum are not taxed, but are not included in the benefits calculation either (see below). A minor contribution to the financing is made by income taxes on Social Security benefits of beneficiaries with high retirement incomes.

The first step in determining a worker's retirement benefit is to calculate his or her average indexed monthly earnings (AIME). This is based on the highest 35 years of earnings on which the worker paid Social Security taxes. Earnings before age 60 are indexed to compensate for past growth in average nominal wages. Dividing the total earnings by 420 (35 years times 12 months) yields the AIME. The primary insurance amount (PIA) is the monthly amount payable to a worker who begins receiving retirement benefits at the full benefits age, currently 65 years and 6 months for those turning 65 in 2005 (see below). The PIA formula consists of three replacement factors (currently 90%, 32% and 15%) and two "bend points" which are indexed to average annual earnings for the whole labour force. The PIA formula for 2005 is:

PIA = (90% of the first $627 of the AIME) +
(32% of the AIME between $627 and $3 779) +
(15% of the AIME over $3 779)

The lower replacement factors at higher AIME levels introduce progressivity into the retirement benefits, although this is partially offset by the longer expected life of higher income individuals and their greater use of spousal benefits.* Moreover, the income taxation of a portion of Social Security benefits for higher-income retirees also effectively introduces additional progressivity into the Social Security system. For a worker with average earnings, the current PIA formula leads to a replacement rate (the ratio of PIA to AIME) of 42%. Once the initial level of benefits has been determined, it is indexed to consumer price inflation over the course of the worker's retirement.

At present, workers can elect to start receiving retirement benefits at any age between 62 (the initial benefits age) and 70. The PIA formula presented above determines initial benefits for those who first claim benefits at the full benefits age; initial benefits for those first claiming benefits before or after that age are adjusted by factors that are by now close to actuarially neutral. For example, the initial benefit of someone born in 1940 who would have attained full benefits age at 65 years and 6 months but decided to claim benefits at age 62 would have been 22.5% below the PIA. Since benefits after the initial benefits claim are indexed to consumer prices, the decision to claim benefits at 62 would have resulted in a permanent reduction of benefits of 22.5% compared to retirement at the full benefits age. The latter is currently scheduled to rise by 2 months per year until it reaches 66 for those born in 1943, then remain unchanged for 11 years and thereafter rise again by 2 months per year until it reaches 67 for those born in 1960 or later. As a result, the average replacement rate *at age 65* is scheduled to decline from 42% at present to about 36% by 2034, about the same rate as at the inception of the programme.

Box 2.1. **The current structure of Social Security** *(cont.)*

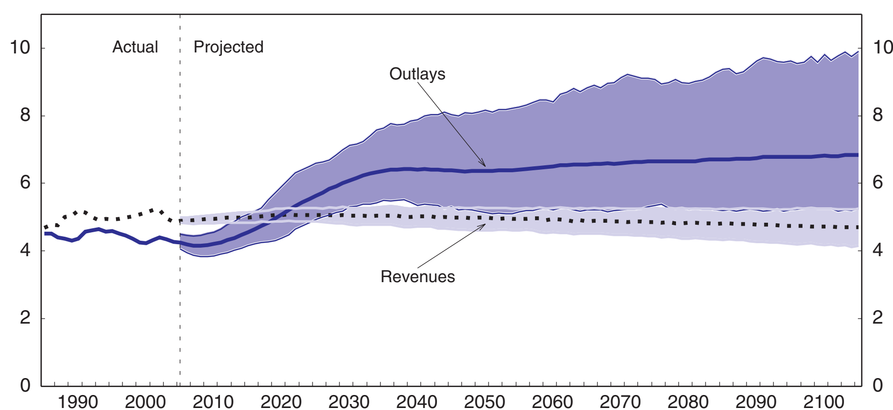
The determination of benefits under the disability insurance (DI) programme is similar to that for retired workers. To qualify as disabled, a worker must be so severely impaired as to be unable to perform any gainful work. To be eligible for disability benefits, the disabled worker must also have worked and been covered by Social Security for a minimum number of years. The main difference to retirement benefits is that the AIME is calculated over the period from age 21 until the worker became disabled. The initial monthly benefit is equal to the PIA and, unlike retirement benefits, is not adjusted for the age of claiming and is indexed to average wages. Once they reach the full benefits age, DI recipients move into the retired-worker category and their benefit is increased thereafter each year for inflation.

A related but separate programme, Supplemental Security Income (SSI), provides monthly cash payments to low-income people who are 65 or older or disabled (the eligibility criteria for disability are similar to those used to determine eligibility under DI). In May 2005, there were 7.1 million SSI beneficiaries, 2.5 million of whom also received Social Security benefits. Because SSI is a means-tested programme, people must have income and assets below specified amounts to be eligible for benefits. SSI is a shared programme between the federal and state governments, and benefits vary from state to state. In New York, the maximum monthly SSI benefit in 2004 for an individual with no other income was $639; for a couple, it was $933. Federal SSI outlays in 2004 were $34 billion, as compared to $492 billion for Social Security. The links between SSI and Social Security are important to consider when evaluating Social Security reform proposals. Reductions in Social Security benefits would partly be offset by increased SSI spending and *vice versa*.

* The spouse of a retired or disabled worker is eligible for a spousal benefit, equal to 50% of the worker's PIA, if the spouse has reached the full benefits age or is caring for a disabled child or a child under age 16. If both the worker and the spouse claimed benefits and the worker dies, the surviving spouse's benefit equals the PIA of the deceased worker. If a spouse is eligible both for a spousal benefit and for a benefit based on his or her own earnings records, he or she receives the higher of the two.

Figure 2.2. **Social Security revenues and scheduled outlays**

Per cent of GDP, 1985 to 2105[1]



1. Shaded areas present 80% confidence intervals.

Source: Congressional Budget Office (2005a), *Updated Long-Term Projections for Social Security*, Washington, D.C., March.

the course of the year. The cash-flow surpluses are projected to turn into deficits by 2020. These deficits are then expected to rise rapidly until 2035, by which time the shortfall would reach 1.3% of GDP. Thereafter the deficits are projected to increase more gradually, to 1.9% by the end of the Social Security Trustees' current 75-year projection window of 2079, and continue to do so thereafter. As indicated by the shaded areas, there is considerable uncertainty around these projections, in particular those for outlays, but the likelihood of persistent cash-flow deficits in the programme beyond 2025 is very high.[5] These shortfalls reflect the basic problem of the sharp projected increase in the old-age dependency ratio (defined as the ratio of those aged 65 and above to those age 20 to 64), which will nearly double from about 0.20 in 2010 to 0.37 in 2030 due to the retirement of the baby-boom generation, and to ongoing increases in longevity. Because of the projection of sizeable cash-flow surpluses over the next 15 years and of the interest income accruing to the trust fund until its expected exhaustion in 2052, it is important to distinguish between the contribution that reform measures make to closing the 75-year *average* imbalance *vs.* the contribution they make to closing the imbalance in the 75th year, which is typically more demanding. Moreover, at least some caution should be attached to proposals that would rely more heavily on accumulations of Treasury securities in the trust fund, as the latter is already expected to redeem these securities at an annual rate of close to 1½ per cent of GDP in the 2030s and 2040s. Whether an even larger drain on the rest of the budget would be politically feasible at a time when other age-related programmes are likely to be putting additional pressure on federal finances is unclear. Therefore, reform proposals should aim to narrow the gap between the outlays and revenues lines shown in Figure 2.2, even though doing so might create some tension in terms of inter-generational burden sharing.

The impact of several alternative reform measures on the 75-year imbalance and the imbalance in the terminal year of the 75-year horizon are shown in Table 2.1. There are, of course, numerous other alternatives that could be pursued, such as whether the current level of spousal benefits should be curbed because it creates inequities in the programme, but the alternatives discussed here provide information on the magnitude of changes that might be needed to restore the programme to actuarial balance. As mentioned above, while the one-off decline in fertility associated with the end of the baby boom is largely responsible for the swing in outlays between 2010 and 2035, the longer-term pressure is the secular increase in longevity, with life expectancy at age 65 having increased by four years

Table 2.1. **Impact of alternative reform measures on Social Security's solvency**

	Percentage improvement in	
	75-year imbalance	75th year cash-flow debit
Accelerate increase in full benefit age (FBA) to 67, index FBA by 1 month every 2 years until FBA = 70	36	29
Replace wage indexing of initial benefits with price indexing	101	116
Hybrid indexing	71	70
Change benefit formula: multiply 32 and 15% factors by 0.987 each year, to reduce to 21 and 10% in 2035	85	57
Subject 90% of earnings to payroll tax and credit them for benefit purposes	40	14
Raise payroll tax rates by 2 percentage points effective in 2005 (employer + employee)	104	34

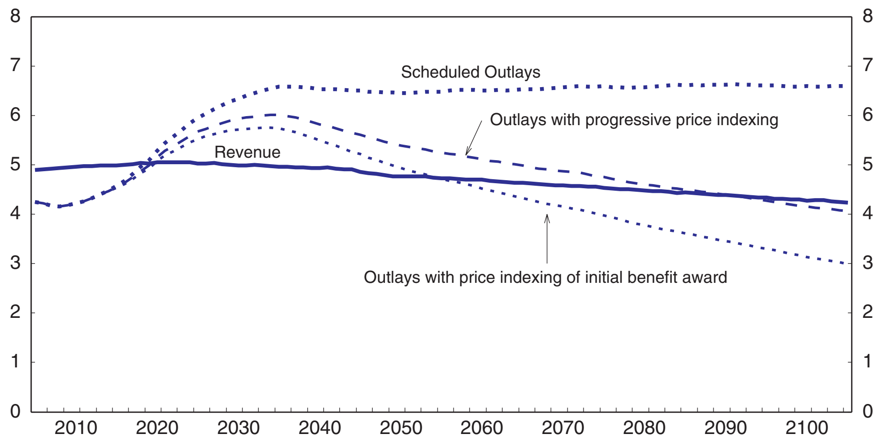
Source: Orszag, P. and J. Shoven (2005), "Social Security", in A. Rivlin and I. Sawhill (eds.), *Restoring Fiscal Sanity*, Brookings Institution, Washington, D.C.

for men and by six years for women since 1940. The projections for outlays assume that this trend will continue. The 1983 Social Security reform addressed this issue by gradually increasing the full-benefits age over two six-year periods (2000-05 and 2017-22) by two months per year, first from 65 to 66 and later from 66 to 67 see Box 2.1). The first reform option shown in Table 2.1 would eliminate the 11-year gap between the two six-year periods, so that the full-benefits age would rise to 67 already by 2011. Thereafter it would increase more gradually by one month every two years until it reaches 70 by 2083. Doing so would eliminate about one-third of both the 75-year and terminal year imbalances. As under the currently scheduled changes to the full-benefits age, the reductions for early retirement or credits for later retirement, in the range between 62 and 70 years, would have to be adjusted to remain actuarially neutral. Given that the average retirement age of 68 years in the 1940s would correspond to a retirement age of 74 today, an increase in the full benefits age larger and sooner than currently scheduled seems warranted. One argument cautioning against indexing the full-benefits age to *average* life expectancy is that mortality rates among lower earnings and education groups have declined much less than those among people with higher earnings and education.[6] Nonetheless, after an initial adjustment for past longevity gains, the full benefits age might be automatically increased by some fraction of further gains in average life expectancy. Although the actuarially neutral reductions for early retirement imply that raising the minimum age at which benefits can be drawn would not improve Social Security's finances *per se*, doing so would have beneficial effects on national income and general tax revenues by discouraging early retirement. The early retirement age should therefore be raised from 62 to 64 (OECD, 2005). Back-loading initial benefits, by reducing them before the full-benefits age beyond the actuarially neutral amount and correspondingly increasing them for late retirement, would strengthen work incentives for workers in their 60s further and progressively move benefits to later ages when people have less ability to work (Steuerle, 2005).

An alternative approach to reducing benefits is by indexing *initial* benefits either completely or partially to consumer prices instead of to wages. Model 2 of the report of the Commission to Strengthen Social Security (2001) proposed price indexation of initial benefits for all beneficiaries. As shown in Table 2.1, this proposal is sufficiently powerful to eliminate the entire 75-year shortfall of the programme, and would indeed lead to a substantial surplus at the end of the 75-year horizon. It does so by perpetually cutting replacement rates: for example, benefits for new retirees in 2050 would be about 40% lower than under currently scheduled benefits, and their average replacement rate would be approximately 25%, compared to 42% at present or the 36% rate to which it is currently projected to decline by 2034 (Box 2.1). As shown in Figure 2.3, the effect of price indexing is initially muted, but because the difference between wages and prices grows over time, so does the effect of price indexing of initial benefits on Social Security outlays. By continually eroding replacement rates, price indexing imparts a downward trend to outlays relative to GDP. A proposal called "hybrid" or "progressive" indexing (Pozen *et al.*, 2004), which the Administration has endorsed, would retain wage indexing for low lifetime-income earners, but would index initial benefits for those with lifetime earnings equal to the taxable maximum to prices. Initial benefits for those with earnings in between these two points would be indexed to some mixture of prices and wages.[7] As shown in Table 2.1 and Figure 2.3, this proposal, while maintaining replacement rates for low-income earners, is similar to price indexing insofar as it reduces the 75-year average imbalance and the

Figure 2.3. **Social Security revenue and outlays**

Per cent of GDP, various options

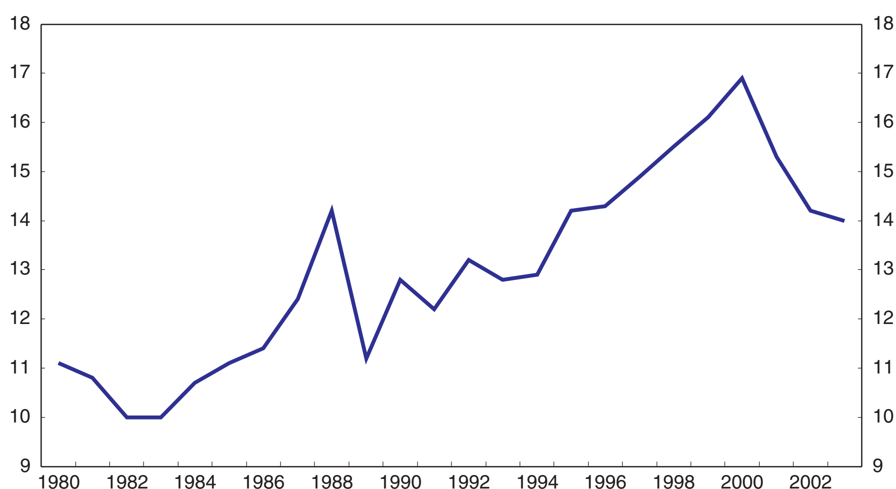


Source: Holtz-Eakin, D. (2005b), "Options for Social Security: Budgetary and Distributional Impacts", statement before the Committee on Finance, US Senate, 25 May.

imbalance in the 75th year by similar amounts by tilting the ratio of benefits to GDP beyond 2035 downwards. However, because this proposal leads to continuous declines in replacement rates for higher earners, it would fundamentally change the nature of the programme by leading in the long run to one flat benefit for all beneficiaries independent of their lifetime earnings and contributions to the programme. A proposal that would circumvent this problem (labelled "change benefit formula" in Table 2.1), but would also contribute slightly less to the reduction of the imbalance in the 75th year, would be to gradually reduce the two upper replacement factors, from 32% to 21% and from 15% to 10%, respectively. This approach might be calibrated such as to offset the effect of the above-average gains in life expectancy of higher earners discussed above on their expected lifetime benefits to maintain the existing degree of overall progressivity.

The final two alternatives shown in Table 2.1 consider ways of raising revenues. At present, the maximum annual earnings which are subject to the payroll tax dedicated to Social Security is $90 000. This taxable maximum has been indexed to average wage growth since 1977. However, because over the past decades earnings have risen more rapidly at the top of the distribution, the share of earnings above the taxable maximum has risen from 10%, the target value of this share in the 1983 Social Security reform, to 14% as of 2003 (Figure 2.4). Raising the taxable maximum such that this share would be brought back to 10% would reduce the 75-year average imbalance by 40%, but because doing so would amount to a parallel shift up in the revenues schedule in Figure 2.2, the reduction of the imbalance in the terminal year would be much smaller. In any case, raising the taxable maximum would amount to a tax increase for those with earnings above the current threshold of $90 000, with associated negative effects on incentives to work. The same would hold true for an increase in the payroll tax rate, a policy that the Administration has ruled out. A rise of 2 percentage points would be enough to eliminate the entire 75-year imbalance. But, with two-thirds of the terminal imbalance remaining, it would not permanently put Social Security on a sounder footing; to do so would require a permanent payroll tax increase of 3.5 percentage points, even without considering the likely negative effects of higher payroll taxes on taxable income. Because of the potentially adverse effects

Figure 2.4. **Share of aggregate earnings above the taxable earning base**



Source: Social Security Administration, Annual Statistical Supplement, Table 4.B1.

on labour supply of a payroll tax increase, an increase in contributions to Social Security should probably be linked to partial pre-funding of the programme in a way that is clearly perceived as being different from a tax increase. Another revenue-raising measure, which is difficult to quantify, would be to devote more resources to combating payroll tax evasion, principally in the form of under-reported income from self-employment.

The debate about pre-funding Social Security

While the pay-as-you-go structure of Social Security was attractive during the decades when the population was growing rapidly, with the projected permanent reduction in population growth the rate of return that such a system can deliver is necessarily lower.[8] The projected near-doubling of the dependency ratio has been the main argument for accumulating large balances in the Social Security trust fund from the mid-1980s on in order to achieve a fairer sharing of the burden across generations. Besides providing for demographic shifts, a more fundamental rationale for pre-funding as opposed to pay-as-you-go is that it raises national saving and, through the accumulation of a larger capital stock, long-run national income (Feldstein and Liebman, 2002). Hence, pre-funding may strengthen the case for a social insurance programme by reducing its macroeconomic cost (Feldstein, 2005a). In assessing various proposals for at least partial pre-funding of Social Security, the key question therefore is how they would affect national saving, especially given its current low level (see Chapters 1 and 4).

A vigorous, though inconclusive, debate surrounds the question whether the substantial increase in trust fund balances, from 1% of GDP in 1985 to 14% in 2004, has raised national saving. The Treasury securities held by the trust fund, represent assets that are backed by the full faith and credit of the United States. However, although the trust fund represents budget authority that the Social Security system has over general tax revenues, it does not represent real economic assets. From a macroeconomic perspective, the beneficial effects of this pre-funding depend on whether the trust fund surpluses affect spending in other parts of the federal budget, *i.e.* whether the focus of policymakers is the *on-budget* balance, or instead the *unified* budget balance, in which case policymakers ran

larger on-budget deficits than they would have absent trust fund surpluses.[9] It is impossible to answer this question conclusively. Nevertheless, there are indications that the unified budget balance receives most of policymakers' attention, and hence that the presence of trust fund surpluses somewhat relaxes the perceived constraint on spending. For example, except for the year 2000, the on-budget balance was negative over the entire period since the mid-1980s despite repeated efforts at deficit reduction. Similarly, the recent stated goal of the Administration is to reduce the *unified* budget deficit by 2009 to half its 2004 value. This provides an argument for pre-funding to take place within an entity outside of the government. Alternatively, some have suggested that the trust fund should be allowed to invest in assets other than Treasury securities.[10] In this case trust fund surpluses would no longer be automatically available to finance deficits in other parts of the government. However, given the enormous size of the current trust fund, which is projected to peak at about 25% of GDP in 2018, allowing the trust fund to invest in corporate equities, for example, might give rise to complex corporate governance and financial supervision issues.

The debate on pre-funding Social Security has therefore focussed on whether, and if so how, some form of personal investment accounts should be made part of the Social Security programme. These accounts would add to, or convert part of, the current defined-benefit programme into a defined-contribution plan, a feature which is conceptually separate from the issue of pre-funding. For the effects on national saving, an important consideration is whether these accounts would be financed out of new savings or by placing funds out of reach of current public expenditure. The Administration's proposal is to allow workers below a certain age to divert up to 4 percentage points of their payroll tax into personal accounts if they so elect (Bush, 2005). In the first year of account availability, 2009, annual contributions would be capped at $1 000. This cap would rise over time until everybody would be able to divert up to 4% of their earnings subject to Social Security tax. Several crucial aspects of the proposal have not yet been specified by the Administration and can only be inferred from calculations performed by the Social Security Administration (2005a). According to these, in return for the reduction in contributions to the defined benefit system, future benefit reductions would be equal to the contributions made to the worker's individual account, accumulated at a fixed annual real rate of interest of 3% and converted upon retirement into a hypothetical CPI-indexed monthly annuity. In terms of investment options, the Administration's proposal is based on the current Thrift Savings Plan (TSP) available to federal employees, which offers five stock and bond index funds. Because this fund would be centrally administered and would offer few marketing and other services, the Social Security Administration assumes low annual administrative costs of 0.3% of assets. The shortfall in Social Security finances during the years between the reduction in contributions to the defined benefit system and the eventual reduction in outlays would be substantial. The Social Security Administration estimates that over the first seven years (2009-15) it would be $784 billion, including interest expenses, should the transition cost be financed by debt. The costs would be lower if the participation rate in the personal accounts were less than the assumed rate of 66%; they would be higher, if the rate used for calculating the offsetting future benefit reductions were less than 3% above inflation.

Because the Administration's proposal is of a "carve-out" nature, national saving would not initially change much, with higher personal saving in the form of personal accounts contributions offset by lower public saving. It therefore would not address the

basic criticism of pay-as-you-go systems and undo the initial transfer of resources to the first generation that permanently reduces the economy's capital stock and therefore long-term income. Alternative proposals have advocated "add-on" personal accounts to Social Security by financing them through contributions above the current payroll tax. Given the current availability of private retirement savings plans such as 401(k) and individual retirement accounts (IRA), such add-on accounts would only be meaningful if mandatory. These accounts would therefore add to national saving, although only to the extent to which they do not replace other savings. The small number of individuals who contribute to their private defined-contribution plans up to the limit suggests that replacement effects may indeed be large. Moreover, the desirability of mandatory add-on accounts rests in part on the assumption that they would have less severe labour supply effects as compared to payroll taxes because account contributions would be perceived as personal savings rather than as taxes. Nonetheless, they would have the advantage of pre-funding Social Security without reducing the defined-benefit component of the system beyond the measures needed to restore actuarial balance (Gramlich, 1996). A legislative proposal introduced in Congress in June 2005 would chart an intermediate course by establishing personal accounts which would be financed exclusively out of the surpluses Social Security is projected to run until 2017. Whether those accounts would receive any contributions beyond that date is an open question.

An important issue for the design of carve-out personal accounts is the rate used for calculating the offsetting future benefit reductions. A benefit offset rate above Treasury yields, such as the 3% rate used in the Social security Administration's cost estimates of the proposal, improves programme solvency, but at the cost of reducing expected returns of the personal accounts relative to participation in the defined-benefit programme. Letting the benefit offset rate vary over time with the safest return obtainable under the personal accounts would make them more attractive. For example, the yield on inflation-indexed Treasury securities currently stands at 1.7%. A benefit offset rate equal to actual Treasury yields would also imply that personal accounts have no effect on infinite-horizon programme solvency. Returns in excess of Treasury yields would presumably be associated with higher risk. Especially in view of the gradual decline in worker coverage by private defined-benefit plans, it will be important to ensure that retirees are left with sufficient income, should the risky component of their personal accounts yield disappointing investment results.

There are a number of other important issues relating to the design of personal accounts. One is whether account holders would be allowed to switch between contributing to their accounts and contributing to defined-benefit Social Security. The Administration's proposal does not allow them to do so: once a worker has opted to contribute to a personal account, he or she continues to do so until retirement. This issue, too, could be addressed by assuring that the rate used for calculating the offsetting future benefit reductions equals the safest return obtainable in the personal account, in which case account holders can always obtain the same return as if all their contributions went to defined-benefit Social Security. Another question is whether balances have to be annuitised or can be withdrawn lump-sum in part or in total. The Administration has made it clear that account balances should be inheritable, which would imply that annuitisation cannot be forced. Unlimited ability to withdraw lump-sum, however, would raise the risk that retirees end up with insufficient income after rapidly spending down their account balance. The solution taken in the Swedish design of personal accounts is to

offer account holders a choice between full annuitisation and a so-called "flexible annuity", under which the balance is paid out as an annuity based on the owner's actuarial life expectancy, similar to a reverse mortgage (Weaver, 2004). Should the account holder die prematurely, the account balance could then be inherited; should he or she live unexpectedly long, however, retirement income would decline once the account balance is exhausted. The Swedish experience also suggests that central administration of the accounts, including collection of contributions, keeping the accounts, executing investment choices and administering annuitisation and payments is crucial in keeping administrative costs low, which could otherwise be substantial (Congressional Budget Office, 2004a; Whitehouse, 2000).[11] Perhaps one of the most challenging and potentially most costly aspects would be to collect contributions together with individualised information from millions of employers. In the Swedish system, employers pay contributions only once a year. Because this leads to a lag of up to 16 months between the time contributions are earned and the time they are posted to the account, during this period they accrue interest at a government bond rate.

Improving incentives for private retirement provision

While Social Security is probably the single most important provider of retirement income, it was never intended to be the only source of pensions for the majority of the population. Indeed, 80% of retirees draw income from other sources in addition to Social Security, and for one-third of retirees Social Security provides less than half of their retirement income.[12] Over time, defined-contribution plans have replaced defined-benefit plans as the most common type of private pension. In 1999, the latest year for which data are available, 29% of private wage and salary workers participated only in a defined-contribution plan, 7% only in a defined-benefit plan and 14% in both (Department of Labor, 2004). It is likely that participation in defined-benefit plans has declined further since 1999, and the under-funding problems that have surfaced since 2002 in many large defined-benefit plans will probably accelerate this trend as steadily fewer employers are offering defined-benefit plans to new employees. Legislation recently introduced in the House of Representatives would address some of the weaknesses that beset the current private defined-benefit plans as well as their regulation.[13] The Administration and several public and private sector actors have also proposed plans for strengthening the defined-benefit pension system. This system is the current focus of congressional pension reform efforts.

The federal tax code plays an important role by providing incentives to both employers and workers in the form of exempting contributions to, or distributions from, pension plans and individual retirement accounts from income taxes.[14] For example, in a 401(k) plan, both employer and employee contributions up to 6% of the worker's salary are excluded from the employee's taxable income, but distributions from the plan, including investment returns, are subject to income tax. Alternatively, employees can choose to contribute from after-tax income, in which case distributions are tax-free. These tax incentives are most valuable for households facing the highest marginal tax rates, which are usually high-income households. They are therefore not very well targeted to those populations which may be in most need of increasing their retirement saving. When comparing wealth-to-earnings ratios suggested by a stochastic life-cycle model of consumption and saving to survey data of household finances, households at the 25th percentile of the wealth-to-earnings ratio and below have accumulated insufficient

saving relative to the model calculations. Households above the 25th percentile seem to be saving adequately (Engen *et al.*, 2004).[15] As shown in Table 2.2, only one-third of all households in the second income quintile have any assets in a defined-contribution plan or an IRA, and while this share is higher among households in this quintile with a household head age 55-59, their assets in these plans are modest. To strengthen the incentives of low- to moderate-income households for retirement saving, it will be important to reconsider the treatment of savings accounts in asset tests under several assistance programmes. Currently, workers with sufficient balances in their retirement savings accounts are disqualified from programmes such as food stamps, Medicaid and Supplemental Security Income (Neuberger *et al.*, 2005). These asset tests thus act as steep implicit taxes on retirement savings.

Table 2.2. **Ownership of defined-contribution and IRA assets, 2001**

Income percentile	Number of households (thousands)	Median income (dollars)	Share with DC or IRA assets (per cent)	Median assets in DC plan or IRA (dollars)		Share of total assets in DC plans and IRAs (per cent)
				All house- holds in range	Households with DC plan or IRA	
A. Households						
Below 20	21 296	10 300	13.3	0	4 500	1.1
20-39.9	21 295	24 400	33.3	0	8 000	3.5
40-59.9	21 300	39 900	53.4	800	13 500	8.8
60-79.9	21 298	64 800	74.4	16 000	31 000	18.9
80-89.9	10 645	98 700	84.9	36 000	52 000	17.3
90 and above	10 660	169 600	88.3	102 000	130 000	50.4
All	106 496	39 900	52.2	600	29 000	100.0
B. Households with household head age 55-59						
Below 20	1 665	–	25.0	0	8 000	1.1
20-39.9	1 560	–	49.6	0	12 000	4.2
40-59.9	1 661	–	61.6	7 200	28 000	8.6
60-79.9	1 507	–	91.0	50 000	54 000	16.7
80-89.9	825	–	95.4	148 000	190 000	18.8
90 and above	769	–	92.1	215 000	299 000	50.6
All	7 986	–	63.6	104 000	50 000	100.0

Source: Diamond, P. and P. Orszag (2004), *Saving Social Security*, Brookings Institution, Washington, D.C.

Several proposals have been made that would probably improve participation of low- to middle-income earners in defined-contribution plans. One proposal notes that the current default when taking up a new job is not to enrol in a defined-contribution plan. Without an (even minor) effort by the employee, non-enrolment is the norm. Making enrolment the norm instead, with the employee having to make an effort in order to opt out, could have a surprisingly large effect on plan participation and hence on retirement saving (Gale *et al.*, 2005a). Experimental results of such a change in the default suggest not only that enrolment increases significantly, but also that a substantial fraction of participants retain the default contribution rate and fund allocation (Madrian and Shea, 2001).[16] While the evidence is clear that automatic enrolment raises participation, it is unclear whether this raises total net saving by these new participants. However, results in Engen and Gale (2000) show that traditional 401(k) plans appear to have a more positive effect for low-wage workers as compared to median- or higher-wage workers, which suggests that there might be a positive saving effect. A second proposal is to expand the

scope and improve the effectiveness of the saver's credit enacted in 2001 (Gale *et al.*, 2005b). The saver's credit is a non-refundable tax credit for voluntary individual contributions to defined-contribution plans. Like other tax subsidies, the saver's credit provides no benefit for households that owe no income tax; for those who do, the effective match rate is higher for low-income households, thus offsetting the incentive effects of the preferential tax treatment of plan contributions. An important improvement would be to make the credit refundable so as to provide incentives for many of the lowest-income households without income tax liability. The revenue cost of doing so is estimated to be approximately $10 billion a year, less than 0.1% of GDP.

Options for federal tax reform

The last major tax reform in the United States, the Tax Reform Act of 1986, made sweeping changes to the personal and corporate federal income taxes. Its main goals, to quote the title of a November 1984 report by the Treasury Department, were "Fairness, simplicity and economic growth". It sought to achieve these goals through wide-ranging base-broadening and simplification. Nearly two decades later, most of these gains in simplicity and efficiency have been lost through continuous expansion of tax exemptions and deductions, which in turn required statutory rate increases to compensate for the revenue losses. While some of the marginal rate increases in the personal income tax were reversed in 2001 and 2003, both taxes remain enormously complicated, generating huge compliance and administrative costs for the economy as a whole as well as significant inefficiencies by distorting a large range of economic decisions through tax preferences. The complexity of the tax code also generates ample opportunities for tax evasion and avoidance, such as in the form of abusive tax shelters, which in turn necessitates higher spending on enforcement activities. The goals of the tax reform effort that the President initiated in January 2005 are exactly the same as they were 20 years earlier: simplicity, fairness and economic growth. An Advisory Panel on Federal Tax Reform is scheduled to submit to the Secretary of the Treasury this Autumn revenue-neutral policy options for tax reform which achieve these goals.[17] Some important proposals made in the voluminous literature on US tax reform are summarised below to provide an impression of the available options without necessarily endorsing any of them. The proposals can be usefully divided between those that keep income as the tax base and aim to achieve reform through simplification and the removal of distortions, and those that shift the tax base to consumption. As discussed below, however, this distinction is somewhat blurred by the fact that the existing tax code is already a hybrid between an income tax and a consumption tax, and most proposals for reform within the current structure do not advocate changing this fact.

Reform within the existing structure

The size of the revenue losses from income tax expenditures, some of the most important of which are shown in Table 2.3, provides an impression of the narrowing of the personal income tax base.[18] Measuring the deviations of the current income tax system from a pure income tax does not imply that these expenditures are inherently undesirable. In fact, one of the largest expenditures, the exclusion of pension contributions and earnings, is an important reason why the current tax system is not completely different from a consumption tax and why it may be justified on efficiency grounds by reducing the taxation of saving. One method to assess how far the current tax code is from a

Table 2.3. **Selected personal income tax expenditures, 2004**

	Per cent of GDP
Net exclusion of pension contributions and earnings	
Employer plans	0.41
401 (k) plans	0.41
Deductibility of mortgage interest on owner-occupied homes	0.53
Capital gains exclusion on home sales	0.26
Exclusion of net imputed rental income on owner-occupied homes	0.21
Exclusion of employer contributions to health plan premia	0.88
Deductibility of state and local taxes	0.56
Exclusion of interest on public purpose bonds	0.17
Deductibility of charitable contributions	0.28
Child tax credit	0.19

Source: Office of Management and Budget (2005), *Budget of the US Government, Fiscal Year 2006, Analytical Perspectives*, Washington, D.C., February.

consumption tax is to compute the revenue from both the personal and corporate income taxes if capital income were completely tax exempt and all business investment was expensed fully upon acquisition. Whereas the tax reform of 1986 moved the tax code substantially in the direction of a pure income tax, the changes in the law since the mid-1990s have resulted in a tax code that raises only little more revenue compared to the same tax code if capital income were exempt (Gordon *et al.*, 2004).

The principal motivation for most tax expenditures seems to be encourage particular personal decisions such as retirement saving or home ownership. While in some cases, such as the exemption of certain forms of saving from taxation, these expenditures do not conflict with efficiency concerns, other tax expenditures, notably those that subsidise consumption of certain items, create distortions and raise the question whether the paternalistic objective can be pursued in a more targeted manner than through a tax exemption. Probably the clearest case is the combination of mortgage interest deductibility together with the non-taxation of imputed income from owner-occupied housing and of most capital gains on housing. Under a pure income tax, interest received is taxable and interest paid deductible, but both imputed income from owner-occupied housing and capital gains are taxed. Because currently neither imputed income from owner-occupied housing nor most capital gains are taxed, the current treatment of housing is closer to that under a consumption-based tax system, in which interest paid would not be deductible. Yet, under current law, interest on up to $1 million acquisition indebtedness, *i.e.* debt used to acquire, build or substantially improve a primary or secondary residence, is deductible, as is interest on home equity indebtedness of up to $100 000 regardless of the use of the loan. These provisions not only favour residential investment over many more productive forms of capital formation, they also seem to be excessively broad to further the goal of home ownership, as suggested, for example, by the anecdotal evidence of the use of home equity lines for vehicle purchases, and clearly distort saving vs. spending incentives. At a minimum, the deductibility of interest on home equity loans should be eliminated and the deductibility of acquisition indebtedness limited to a threshold that more clearly targets lower-income households, such as the threshold for mortgages conforming to the lending criteria of the government-sponsored mortgage lenders. Over time, mortgage interest deductibility should be phased out entirely. Another important case of distortionary tax expenditure is the unlimited exclusion of employer health insurance plan premia; this

should be capped in order to reduce excessive spending on health care services. The subsidisation of state and local government expenditures in the form of the deductibility on federal returns of state and local tax payments which, as discussed in Chapter 3, probably distorts sub-national governments' financing and spending decisions and the exemption of interest on public-purpose state and local government debt should also be ended. The retention of the deduction for charitable donations should depend on whether the widespread misuse of tax-exempt organisations for non-eligible purposes can be curtailed at acceptable cost, which seems unlikely (Everson, 2005).

While reining in several of the large tax expenditures under the current personal income tax would be desirable, it would still leave the present tax code very complicated. Moreover, it would not address the major looming source of complexity, namely the increasing reach of the individual alternative minimum tax (AMT), which in 2004 affected only about 4% of income tax returns, but is projected to affect about 30% of returns by 2010.[19] Key differences between the AMT and the regular income tax code include the disallowance of exemptions for dependents and of deductions for state and local taxes under the former, as well as the "marriage penalty". This was temporarily eliminated in 2003 under the regular income tax code, but continues to exist under the AMT in that the exemption for couples is less than double the exemption for singles and the tax brackets are not adjusted for marital status. On the one hand, repealing the AMT would lead to prohibitively large revenue losses – upward of $600 billion between 2006 and 2015 (Holtz-Eakin, 2005a). On the other, making the AMT the default tax code, as some have suggested, is undesirable insofar as the exemptions for dependents and elimination of the marriage penalty are seen as positive features of the regular tax code. Instead, a substantial simplification of the income tax code, combining large-scale base broadening and simplification of the statutory rate structure with a repeal of the AMT, would be the most desirable route for reform within the current income tax. One interesting proposal would reduce the current federal rate structure to just two different marginal rates, 15% on income up to $90 000 ($180 000 for couples) and 27% on earnings above that level (Edwards, 2005). The break is intended to be indexed to the taxable maximum under the Social Security tax, so that the combined marginal tax rate of the income and payroll tax would be approximately constant at 30%. Dividends, interest and capital gains would be taxable at 15% under the personal income tax. The standard deductions under the current code would be maintained, and an increased personal exemption would partly offset the elimination of the child tax credit. While current tax-preferred saving plans and the earned income tax credit (EITC) would be retained, all other credits and deductions, including the mortgage interest deduction and the deductibility of state and local taxes, would be eliminated. These changes to the personal income tax are estimated to be roughly revenue-neutral.

The second key element in the simplification of the current tax code should be better integration of the corporate and personal income taxes. Under the current tax code, some corporate income is not taxed at all, such as when interest payments are made to tax-exempt entities, whereas some of it is taxed under both the corporate and personal income tax, when dividends are paid to shareholders. The proposal discussed above (Edwards, 2005) would combine a separate 15% personal tax rate on dividend income with a 15% corporate income tax so as to lead to a combined 28% tax rate on dividend income for domestic personal income tax filers, similar to the combined income and payroll tax rate of 30% on labour income. Alternatively, integration could be achieved by taxing both

labour and capital income at the personal level at the same rate, together with introducing credits to shareholders for corporate income tax paid, so that the corporate income tax acts as a withholding tax. However, this second route effectively discriminates against foreign shareholders who are unable to claim the tax credits. Developments in European countries over recent years have therefore favoured corporate income tax reductions over tax credits for corporate income taxes. Whichever route for better integration of the personal and corporate income taxes is chosen, it should be accompanied by substantial broadening of the corporate income tax base, such as eliminating the deductibility of state and local taxes and capping the exclusion of health insurance premia.

Shifting to consumption-based taxation

The main economic argument for replacing an income tax by a consumption tax is the widespread agreement in the literature that capital income taxation is the most distorting form of taxation because it changes the price of current relative to future consumption and imposes a *growing* tax on consumption in future periods. The distortions are therefore growing as well over time (Judd, 2001). Given that the United States is the only major developed country without a consumption tax at the central government level, there is a range of proposals which would rely on replacing the income tax in part or in whole by a consumption-based tax. However, as discussed above, many changes to the tax code since the last major tax reform in 1986 have shifted it back from what was close to a pure income tax towards a consumption tax. The efficiency gains from replacing it by a pure consumption tax depend critically on the response of private saving to the increase in after-tax returns on investments. The empirical evidence on the effects of tax-preferred saving plans is inconclusive as to whether they increase private saving or lead mostly to the replacement of saving that would have been done otherwise in taxable form.[20] Furthermore, saving that is done for precautionary reasons is relatively insensitive to changes in the rate of return, and by implication to changes in the tax treatment of savings (Engen and Gale, 1997). Nonetheless, while the exact magnitude of the potential efficiency gains from such fundamental tax reform is subject to debate, most studies suggest that they could be substantial.[21]

Although the economic literature has mostly focussed on the exclusion of capital income as the source of efficiency gains from a consumption tax, most of the existing proposals also emphasize the radical increase in simplicity of the tax code that would result from fundamental tax reform.[22] Important proposals in this vein are the flat tax of Hall and Rabushka (1995), the "X tax" of Bradford (1986) and a national retail sales tax. Under the flat tax, individuals would be taxed at a flat rate on their wages and salaries in excess of a large personal exemption; dividends, interest and capital gains would not be taxed at all. All businesses, regardless of their corporate form, would pay the same flat rate on all their cash flow; all investment would be immediately expensed, and wages would be deductible, but dividends and interest payments would not be. At present, a tax rate of 18% would be revenue neutral if the personal and corporate income taxes were repealed (Edwards, 2005). Except for the personal exemptions, this tax would be equivalent to a pure consumption tax. The X tax is a variant of the flat tax which would allow for more graduated taxation of wages, possibly including an initial negative tax rate similar to the EITC. Important for ease of administration, both the flat tax and the X tax do not require any information about financial transactions such as borrowing and lending or issuance and repurchase of stock. A national retail sales tax would be even simpler. It would

completely end taxation at the stage of factor payments and would instead tax only final purchases. To replace the personal and corporate income taxes, a tax rate, measured on a tax exclusive basis, of 18% as well would be necessary; to replace the payroll tax as well, it would have to be 30%. These calculations assume that all goods and services included in final consumption expenditures would be subject to tax; if important product groups, such as food or medical services, were exempt, these rates would have to rise further. Besides concerns about the complete loss of progressivity under such a tax, sales tax rates of around 20% or higher may generate strong incentives for tax evasion.

An important criticism of any form of pure consumption tax is that notions of ability to pay and hence of fairness are usually tied to economic income as opposed to wages and salaries only. Moreover, many of the current tax benefits, such as the earned income tax credit and the child tax credit, are phased out at certain levels of taxable income. Unless it was presumed that for low earners the difference between wages and income is generally small, some form of income calculation would be necessary to retain the EITC, arguably one of the most valuable forms of progressivity, in its current form. A potential compromise solution between an income tax-based and a consumption tax-based reform would be to greatly simplify the present personal income tax, along the lines discussed above, and to replace the corporate income tax by a federal VAT. One such proposal would introduce a broad-based VAT in return for a substantial reduction in the reliance on income tax revenues and hence the taxation of capital income (Graetz, 2002). Retaining a simplified personal income tax would permit progressive taxation based on an economically meaningful concept of ability to pay, although at the price that those individuals not exempt from the income tax would still have to compute and report their income. Retaining an income tax would also lessen the transition problems related to the treatment of existing capital under a shift to consumption taxation. Conceptually the same outcome could be achieved by combining this simplified personal income tax with a retail sales tax, but there are important practical advantages of a VAT over a retail sales tax. Because of the inability to distinguish between sales of inputs to businesses and final sales, the existing state sales taxes use narrow bases that lead to distortions without eliminating the cascading problem (see Chapter 3). Especially if the states were willing to replace their sales taxes by VATs, there could be great gains in efficiency of tax administration at the two levels of government (Box 2.2). Concerns about visibility of the tax could be addressed by a legal requirement to list the VAT on retail sales receipts, such as exists for the Goods and Services Taxes in Canada and Australia. An important difference between a VAT and a flat tax is that the former is border adjustable, in that exports are zero-rated and imports are subject to VAT; by contrast, a flat tax would be territorial, thus favouring production abroad over domestic production. While in theory the tax effects under a flat tax should be offset by an adjustment of the exchange rate, whether and how quickly this adjustment would occur in practice is unclear.

Conclusions

To ensure fiscal sustainability and budgetary discipline, reforms to the budget process, entitlement programmes and the tax system are urgently needed. Some recommendations for such reforms are summarised in Box 2.3.

Box 2.2. **Co-ordinating VAT between levels of government: the Canadian experience**

In the US context, in which most states rely heavily on general sales taxes for their revenues, the introduction of a federal consumption tax, whether a retail sales tax or a VAT, would pose formidable challenges. Assigning indirect taxes entirely to the federal level, even in combination with some form of revenue sharing between the federal and state governments, seems not only politically unpopular in the United States but also, as argued in Chapter 3, undesirable on economic grounds. By contrast, Canada's experience with consumption taxes at both the federal and provincial levels provides valuable lessons about how a system in which both federal and sub-national governments use indirect taxes might operate efficiently without compromising fiscal autonomy at the sub-national level.*

In 1991 Canada replaced the federal manufacturers' sales tax with the goods and services tax (GST), an invoice-credit destination-based VAT. The GST is imposed at a single rate of 7% that applies to most taxable goods and services consumed in Canada. Since 1991 a number of different federal-provincial arrangements have existed. In one province (Alberta), the GST is the only consumption tax. Four provinces (British Columbia, Saskatchewan, Manitoba and Ontario) have their own retail sales tax (RST), applied to the GST-exclusive tax base, in addition to the GST. In one province (Prince Edward Island), the provincial RST applies to the GST-inclusive tax base. Three provinces (Newfoundland, Nova Scotia and New Brunswick) have a joint federal-provincial VAT, called the harmonised sales tax (HST), which is administered by the federal government at a uniform rate. Finally, one province (Quebec) has a provincial VAT, the Quebec sales tax (QST), applied to the GST-inclusive base. The QST is administered by the government of Quebec, which also administers the GST on behalf of the federal government.

In terms of combining ease and efficiency of administration with provincial fiscal autonomy, the system in Quebec is the most interesting example. The QST rate of 7.5% applies to the price of a good or service including the GST, for a combined GST-QST rate of just over 15%. While the base of the QST was initially different from that of the GST, by now most differences have vanished. Where differences are maintained, this can be handled through rebates. For example, the QST on books is eliminated by giving an instant rebate following the payment of the tax. The QST's rules regarding input tax credits, too, have mostly converged to those of the GST. Thus, while co-ordination of the tax bases between the federal and sub-national level is beneficial, the Canadian experience suggests that some sub-national autonomy in the matter of bases is tolerable. Taxes on inter-provincial sales from one business to another are based on the deferred-payment method similar to that now applied in the EU. Exports from Quebec, to another province or abroad, are zero-rated for QST purposes, whereas imports from other provinces or abroad are taxed, except for inter-provincial purchases made directly by final consumers.

As mentioned above, both the GST and the QST are administered by the government of Quebec, with the federal share turned over to the federal government after deducting an agreed-upon administrative cost. Besides administering it, Quebec also has an incentive to monitor the GST because the QST is applied to a GST-inclusive base. Audit priorities for the GST are established by the federal government, but final audit plans are agreed to between the federal and Quebec governments, with the latter carrying out the audit and reporting the results.

* For an extensive treatment of the issues discussed in this box, see Bird and Gendron (2001).

Box 2.3. **Recommendations regarding fiscal sustainability and budgetary discipline**

The federal budget outlook and budgeting process

Although the federal unified deficit has declined over the past two years, further progress is likely to be limited. Persistent shortfalls near the current level are having negative effects on national saving and long-run national income. Restraining discretionary spending will be necessary, but reforms to the entitlement programmes and to the tax system are needed too. Fiscal rules could help in the process of restoring budgetary discipline.

- The expired provisions of the Budget Enforcement Act should be renewed. Improvements to these rules should be considered.

Strengthening the retirement income system

While the financial condition of Medicare and Medicaid is worse than that of Social Security, the current policy debate is focused on reforming the latter, which is arguably more amenable to a solution. A combination of adjustments to programme parameters could eliminate Social Security's current actuarial imbalance in a manner such that it would not resurface over time:

- Speeding up the transition from 65 to 67 for the age at which full benefits are paid and indexing it to further increases thereafter. Moreover, raising the early retirement age from 62 to 64, curtailing early benefits and raising incentives to delaying exit would stimulate participation in the labour market.
- Reducing replacement rates for higher earners. These reductions might be calibrated so as offset the effect of their above-average gains in life expectancy on expected lifetime benefits.
- Reversing the rise in the share of earnings not subject to Social Security tax by increasing the taxable maximum.
- If personal accounts were to be added to Social Security, these should be financed out of new savings so as not to erode the existing defined-benefit structure beyond what is needed to put it on a sustainable footing.

Options for federal tax reform

The current personal and corporate income taxes are exceedingly complex, with their bases narrowed by an excessive number of provisions that often distort economic decisions, especially harming incentives to save. While numerous efficiency-enhancing measures to broaden the bases and simplify the tax code can be undertaken within the existing tax structure, greater reliance on consumption taxation might produce further benefits.

- The deductibility of interest on home equity loans should be eliminated. The deductibility of interest on home acquisition loans should be limited to a low threshold, and eventually phased out.
- The exclusion of employer health insurance plan premia should be capped. The deductibility on federal returns of state and local tax payments and the exemption of interest on public-purpose state and local government debt should be eliminated.
- A more wide-ranging simplification of the personal and corporate income taxes, with substantial base broadening and reduction in marginal rates as well as improved integration of corporate and personal income taxes, would likely have substantial beneficial effects. The negative income tax for low-income workers should be maintained, as should the preferential treatment of major forms of retirement saving.
- Greater reliance on consumption taxation might lead to further efficiency gains. The replacement of the grossly inefficient corporate income tax by a broad-based federal VAT would be beneficial in itself and might also raise sufficient revenues to exempt large parts of the population from the personal income tax. If states changed their sales taxes to a VAT, combined federal-state VATs could lead to substantial efficiency gains for economic decisions and tax administration.

Notes

1. There are, of course, sources of uncertainty around the budget outlook apart from policy changes. For example, the CBO's baseline is predicated on a rather cautious view of how long-lasting the recent improvement in income tax revenues will be. The possibility that this improvement may last longer, as assumed by the OMB, poses an upward risk to the outlook. On the other hand, the costs of the devastation wrought by hurricanes Katrina and Rita may substantially increase the deficit in the near term
2. The only major provisions currently scheduled to expire before 2010 are the tax reductions for capital gains and dividend income, which expire by the end of 2008. The Congressional budget resolution for FY 2006 passed in April 2005 already includes their extension to 2010.
3. Mankiw and Weinzierl (2005) argue that up to 50% of the revenue loss of a reduction in the taxation of capital income can be offset through stronger economic activity. However, reducing the taxation of capital income is widely recognised as being the tax reduction measure most conducive to raising long-term growth. A careful analysis of the 2001 tax cuts by Gale and Potter (2002) concludes that the overall effect of those tax cuts on economic activity, after taking into account the effects of increased debt issuance, are at best modest, and more likely negative. This suggests that cost estimates of the 2001 and 2003 tax cuts based on static scoring are reasonably reliable.
4. These projections are taken from Congressional Budget Office (2005b) and differ from the projections published by the Social Security Trustees in 2004. Due to different economic assumptions and modelling techniques, the trustees project a deficit of 2.1% of GDP in 2080, compared to the CBO's 1.8%. The 75-year summarised balance is –1.9% of taxable payroll in the trustees' 2004 report, compared with –1.0% in the CBO's projections. Scheduled benefits are computed as described in Box 2.1. Under current law and projections, Social Security will be able to pay only about 75% of these benefits once the trust fund is exhausted.
5. The shaded areas present 80% confidence intervals based on stochastic simulations using probability distributions for demographic and economic factors that underlie the analysis such as fertility and mortality rates, interest rates, the rate of earnings growth and the share of compensation paid as non-taxable benefits. The fact that the uncertainty around the outlay projections is several times larger than that around the revenue projections suggests that future developments in longevity are the main source of uncertainty. For further details see Congressional Budget Office (2004c).
6. See Diamond and Orszag (2004), Ch. 4.
7. Specifically, benefits for those in the bottom 30% of lifetime average earnings would receive initial benefits that would continue to be indexed to wages. Initial benefits for someone who earned the taxable maximum throughout his or her career would grow with prices. The interpolation between these two extremes would be achieved by adding a third bend point to the PIA formula described in Box 2.1 within what is now the 32% bracket. The replacement factor would remain at 32% below this new bend point, whereas the factors for the upper two brackets would be reduced annually at a rate sufficient to keep benefits for a maximum earner growing with prices. This indexation scheme, which is the one shown in Figure 2.3 and is taken from Holtz-Eakin (2005b), reduces benefits slightly more than the one shown in Table 2.1, which is based on Orszag and Shoven (2005).
8. Samuelson (1958) showed that in an economy without technological progress, the steady-state internal rate of return on a pay-as-you-go pension system is the rate of population growth. In an economy with technological progress, the rate of return is the rate of real wage growth (which equals the rate of labour productivity growth) plus the rate of population growth. In either case, a decline in population growth reduces the internal rate of return.
9. For a more detailed argument that trust fund surpluses did increase national saving, see Diamond and Orszag (2004), Box 3-5 and Appendix A. For the opposite view, see Smetters (2004).
10. This proposal has more often been motivated by the desire to lessen Social Security's imbalance by earning higher returns in the stock market than on Treasury bonds. The validity of this view is questionable once it is recognised that higher stock market returns are largely compensation for greater risk.
11. The administrative costs of the Swedish system's central administration (PPM) in 2004 were roughly $6 per account holder. In 2004, 0.27% was deducted from premium pension accounts to pay PPM's administrative costs, and PPM's goal is to reduce its charges over time to 0.1%. In addition, account holders pay an annual fee to the managers of investment funds in which they elect to invest; this fee averaged 0.44% in 2002 (Weaver, 2004).

12. For a broad overview of issues associated with private pensions, see Gale and Orszag (2003).
13. Weaknesses in the system and potential remedies are discussed in OECD (2004), Ch. 4. The Pension Protection Act of 2005, introduced in the House on 9 June 2005, would, among other things, require employers to meet a 100% funding target and make up for funding deficits over a seven-year period; increase required contributions for severely under-funded plans; prohibit increasing benefits or paying lump sum distributions in plans that are less than 80% funded; and raise the Pension Benefit Guarantee Corporation's flat-rate insurance premia from $19 to $30 to reflect past inflation.
14. An overview of existing tax-preferred forms of savings in the United States, including individual retirement accounts and defined-contribution pension plans, their eligibility rules, contribution limits and tax treatment is provided in Burman *et al.* (2003). For an overview of the tax treatment of private pensions in OECD countries, see Yoo and de Serres (2004).
15. As pointed out in Congressional Budget Office (2004b), statements about adequacy of retirement saving have to be carefully conditioned on the decision about the retirement date. For example, a worker who intends to work until 65 or beyond clearly needs fewer assets at age 60 than a worker who intends to retire at 62.
16. Feldstein (2005b) suggests combining personal accounts under Social Security with a default option of voluntary contributions to these accounts. Building on the legislative proposal to finance personal accounts out of Social Security surpluses through 2017, he recommends an automatic additional contribution of 3% of taxable payroll to these accounts, deducted by employers with the regular payroll tax. Account holders could opt out by demanding a refund of this contribution when they file their annual federal income tax return in the following year.
17. Information about the Panel's membership, remit and hearings is available at *www.taxreformpanel.gov.*
18. The cost of each single tax expenditure is evaluated on the basis that it is abolished while all others remain in place. Therefore, the cost of all tax expenditures together cannot be judged from the sum of the components. Nonetheless, the sum gives an order of magnitude of the implicit outlays. As shown in Herd and Bronchi (2001), all personal income tax expenditures combined were reduced from about 10% of GDP as of the pre-1986 tax code to 6.3% in 1988, when all provisions of the 1986 tax reform had taken effect. Over the following 12 years they increased to 7.8%.
19. For a more extensive discussion of the problems associated with the AMT see OECD (2004), Ch. 2.
20. The empirical literature is surveyed in Bernheim (2002), especially section 4. While some studies report sizeable increases in household saving as a consequence of the availability of tax-preferred retirement accounts, he argues that most of these results are suspect, primarily due to sample selection.
21. A potential caveat against overstating the efficiency gains from shifting to a consumption tax concerns the magnitude of transition relief to be paid to holders of existing capital, who would otherwise experience double taxation, first on their income saved before the tax reform and later on the consumption financed out of their wealth after the tax reform. Under plausible assumptions, such transition relief would require a higher tax rate on consumption and therefore reduce the efficiency gains. On the other hand, Judd (2001) argues that most existing analyses understate the likely gains from shifting to a consumption tax. In particular, he points out that most analysis of the efficiency gains of fundamental tax reform has been performed in models with competitive markets and without regard for the effects on human capital formation. His analysis shows that the presence of imperfect competition and human capital accumulation magnifies the efficiency gains from switching to a consumption tax.
22. Several of the leading current proposals for fundamental tax reform are presented and discussed in Auerbach and Hassett (2005).

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Chapter 3

Fiscal relations across levels of government

This chapter discusses the current state of fiscal relations between the federal, state and local governments in the United States and suggests directions for improvement. The significant degree of fiscal autonomy of the states and, to a lesser extent, of local governments has had several beneficial effects, including the responsiveness of public expenditure to local preferences and the comparatively high degree of accountability through the close link between revenue-raising powers and expenditure assignments. This link reflects traditionally weak support for redistribution across jurisdictions. Grants from the federal to sub-national governments are focused on achieving aims of an efficiency or paternalistic nature and are therefore all earmarked. Programme devolution to the states, notably in the welfare area, has been remarkably successful in fostering innovation in programme design, but the cost pressures in health care for the indigent are such that greater federal involvement might become necessary. The efficiency with which states raise revenues has been compromised by the erosion of their tax bases, notably for corporate income and sales taxes. Replacing these taxes with a less distorting form of indirect taxation could reverse this trend. Finally, state balanced budget requirements appear to have had salutary effects, but more extreme forms of fiscal rules have reduced state and local governments' ability to provide the desired level of public goods.

The history of fiscal federalism in the United States dates back to the founding of the Union in 1789. Already prior to the establishment of the federal government, the states had exercised their powers to levy taxes and provide certain services, and the tenth amendment to the US constitution expressly reserves to "the States or to the people" all powers "not delegated to the United States by the Constitution, nor prohibited by it to the States". Over the century following the Civil War the responsibilities of the federal government and its involvement in the fiscal affairs of lower levels of government expanded substantially. More recently, however, there has been some devolution of programmes back to the states, reflecting in part dissatisfaction with the economic effects of several large federal programmes. Besides substantial changes over time in the federal-state relationship, fiscal policies vary considerably among state and local governments, making the United States a particularly interesting case for the study of the decentralisation of fiscal functions and instruments with the aim of "combining the different advantages which result from the magnitude and the littleness of nations" (Tocqueville, 1980, p. 163).[1] The goal of this chapter is to describe the salient features of these relations at the present time and to discuss several areas which have recently been the subject of policy debates and initiatives and seem to warrant efforts at further improvement.

The first section provides a brief overview of the fiscal organisation of the three levels of government, their size and role as well as their different means of funding themselves. It also sets the stage for the subsequent discussion by outlining several trends that are likely to generate the main future challenges for fiscal relations among and within the levels of government. The second section focuses on issues on the expenditure side, mostly on intergovernmental grants. While grants are clearly an important part of sub-national governments' funding, their discussion is taken up in the context of expenditures because all grants from the federal to lower governments are earmarked, and revenue-sharing among states or between the federal and state level does not exist.[2] In view of the states' great degree of fiscal autonomy, grants are the most important mechanism for the federal government to affect lower governments' spending decisions. The third section discusses several issues related to funding, notably current efforts and options for improving or replacing states' sales taxes, and the fourth section examines fiscal rules and market mechanisms for fiscal discipline at the state and local levels. The chapter concludes with some recommendations for improving on the current state of intergovernmental fiscal relations.

Main features and trends shaping fiscal relations across the levels of government

The current extent of decentralisation

Historically, states have enjoyed a substantial degree of fiscal autonomy, as expressed in the tenth amendment, reflecting the fact that the states historically preceded, and transferred only limited powers to, the Union. States are largely free in their choice of tax

bases and rates, subject to only few limitations imposed by the federal constitution, notably that taxation of exports and imports is a federal activity and that their power to tax interstate commerce is limited. On the expenditure side, most major spending functions are located at the state or local government level, important exceptions being national defence and pension and health insurance for the elderly and disabled. As in the case of taxes, allocation of expenditure functions to the sub-national level involves substantial or even complete state autonomy in programme design, as opposed to mere delegation of federally-controlled budgetary functions. Another important aspect of state prerogatives is their autonomy in organising local governments within their own boundaries. Local government structures vary greatly across states, with different functions performed by county, municipal, school district and special district governments. Moreover, several state constitutions include "home rule" clauses that confer on municipal governments the right to create their own charters as well as considerable autonomy in conducting their affairs.

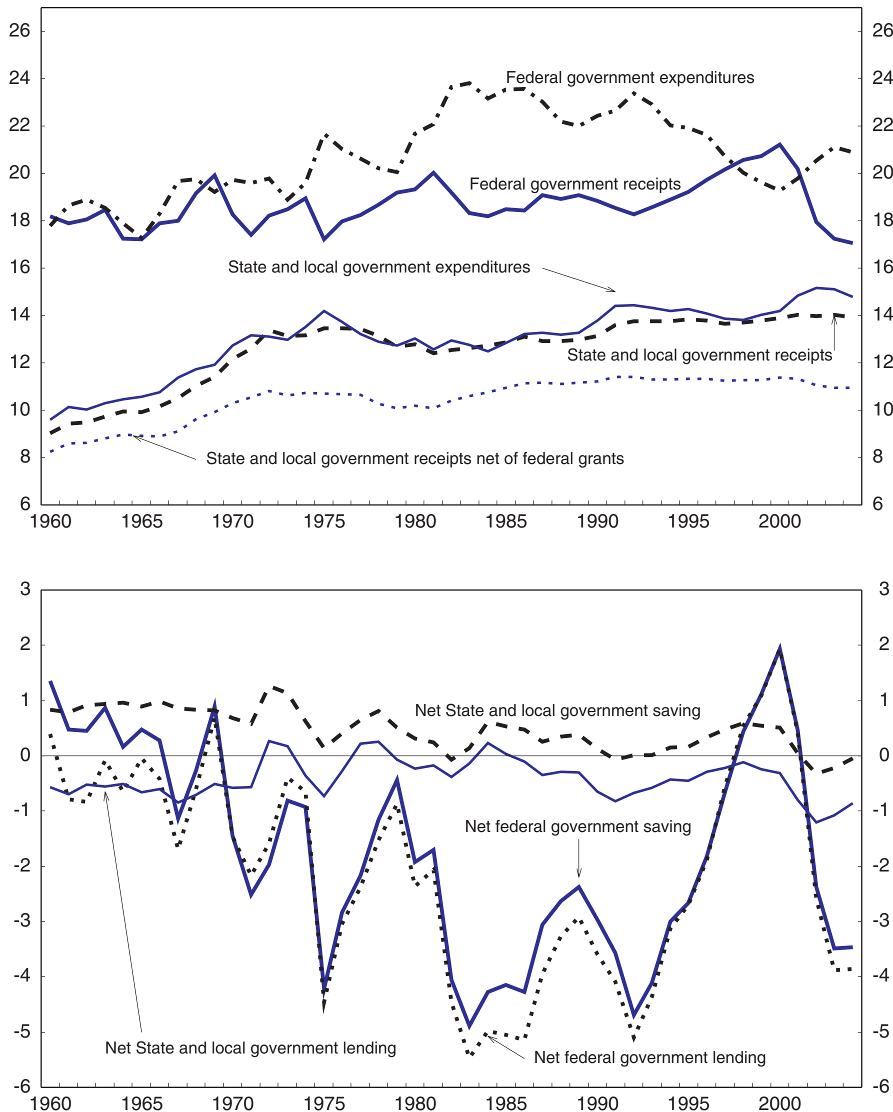
Federal government total expenditures trended up until the early 1980s and have since declined to about 20% of GDP (Figure 3.1).[3] Except for a surge in the late 1990s and subsequent sharp decline, federal government receipts have shown little trend over the period, averaging about 18%. State and local receipts and expenditures trended up until the mid-1970s and have remained fairly stable since then at around 14% of GDP. While revenues and expenditures of sub-national governments have tended to be in balance, this has clearly not been the case at the federal level. The implications for net government saving (the difference between current receipts and current expenditures) and net government lending (which includes the balance of capital receipts and expenditures) are shown in the lower panel of Figure 3.1. On either measure sub-national budgets have been close to balance. Most obviously, their net saving has been almost always positive, which likely reflects discipline imposed by capital markets, and perhaps also the effectiveness of their balanced budget requirements discussed below. By contrast, since the mid-1960s the federal government has almost always run budget deficits, which may result from the combination of its greater ability to borrow in financial markets, the inability to achieve lasting deficit reduction through fiscal rules, and its greater role in and ability to achieve cyclical stabilisation.

Total expenditures of local governments are almost as large as those of state governments, while federal expenditures are nearly twice as large (Figure 3.2).[4] Apart from interest payments on federal debt, most of federal expenditures are for defence, social benefits (primarily pension and health benefits for the elderly and disabled) and grants to sub-federal governments. Only little more than 10% of federal expenditures, or about 2% of GDP, is spent on non-defence consumption and investment. At the state level, grants to local governments are the single largest spending category, followed by social services such as income support and the Medicaid health-care programme for the indigent) and education, overwhelmingly higher education. Finally, primary and secondary education is by far the largest expenditure component of local governments, comprising nearly 40% of their total expenditures. Other (important local government functions are social services (such as hospitals and other health services), utilities and public safety.

The composition of revenues is quite different across the three levels of government (Figure 3.3). Within taxes, over time a broad division of tax bases has developed by which the federal government relies almost exclusively on income taxation in the form of personal and corporate income and payroll taxes, the states on sales and, to a lesser extent, personal income taxes, and the local government level on property taxes. Notably,

Figure 3.1. **Government total receipts and expenditures**

Per cent of GDP

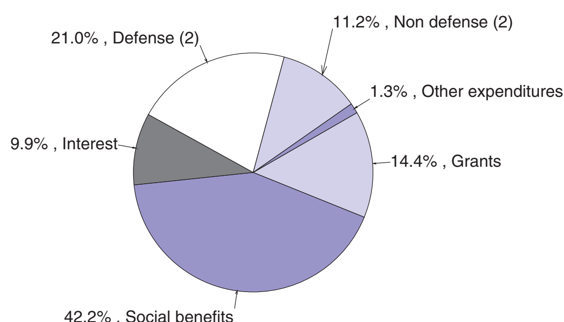


Source: Bureau of Economic Analysis.

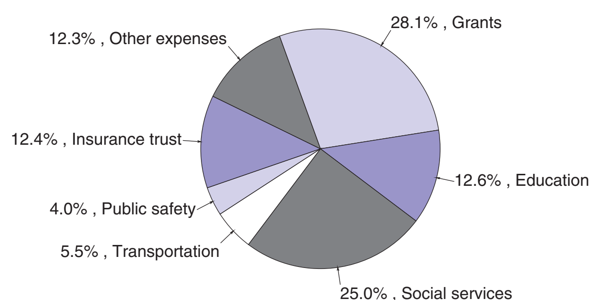
the federal government does not levy a general tax on consumption, like a sales tax or value-added tax (VAT), nor a property tax, and most states' involvement in property taxation is negligible. Also, corporate income is a small revenue source for state and local governments. Thus, there are only two major tax bases that are shared between levels of government: personal income between the federal and state governments, and sales between state and local governments. While virtually all federal revenues are raised in the form of taxes, taxes account for only 44% of state revenues. Nearly one-third of state revenues are derived from federal government grants; the remaining quarter is derived from various sources, including nearly 10% from user charges, for example for hospital

Figure 3.2. **Decomposition of government expenditures**

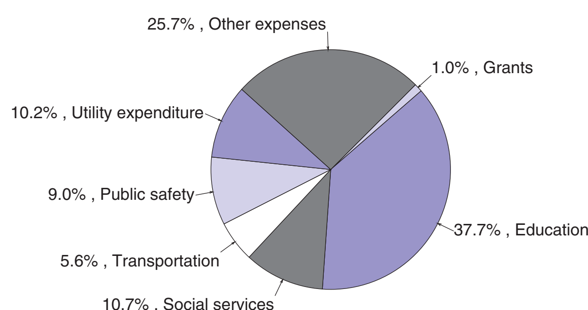
A. Decomposition of federal government expenditures, 2002-03 (1)
Total expenditures : $2232.6 billion



B. Decomposition of state government expenditures, 2002-03
Total expenditures : $1359.0 billion



C. Decomposition of local government expenditures, 2002-03
Total expenditures : $1194.9 billion



1. Fiscal year 2002 Q3 to 2003 Q2
2. Including consumption expenditures and gross government investment.

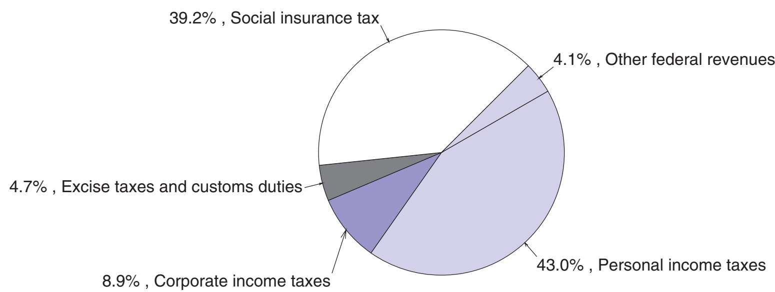
Source: Bureau of Economic Analysis and Bureau of the Census.

services and higher education. Finally, local governments raise only about one-third of their revenues in the form of taxes. Grants, mostly from state governments, account for another third of their revenues, and most of the remaining third is derived from user charges and utility revenue.

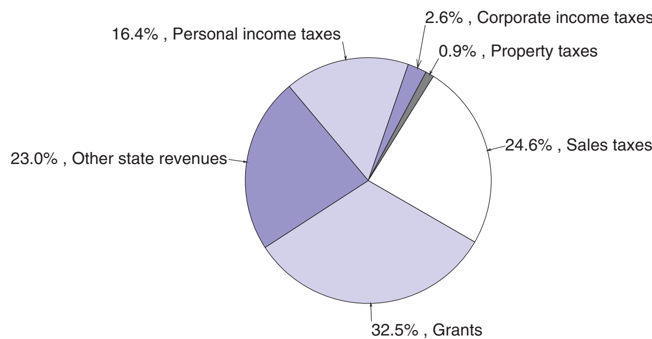
As mentioned above, the organisation of the local government sector is at the discretion of the states. The structure of the local government sector is therefore quite diverse across states, so that it is difficult to make generalisations concerning the functions of the various forms of local government. Table 3.1 provides some indications as to the assignment of functions. The three major forms of local government are counties,

Figure 3.3. **Decomposition of government revenues**

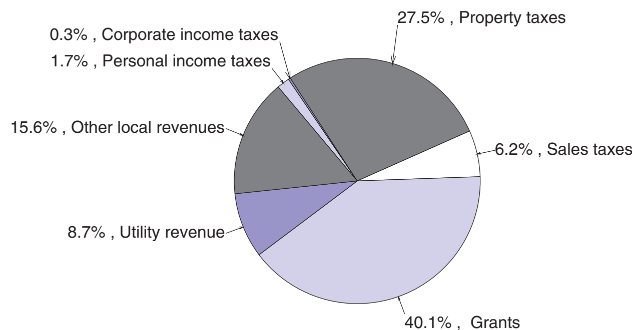
A. Decomposition of federal government revenues, 2002-03 (1)
Total revenues: $1895.7 billion



B. Decomposition of state government revenues, 2002-03
Total revenues: $1295.7 billion



C. Decomposition of local government revenues, 2002-03
Total revenues: $1140.6 billion



1. Fiscal year 2002 Q3 to 2003 Q2.

Source: Bureau of Economic Analysis and Bureau of the Census.

municipalities (including cities) and school districts. Within each of these categories there is vast heterogeneity; for example, there are more than 3 000 counties in the United States, ranging in population from less than 200 to more than nine million. Counties dominate in the local government provision of social services and income maintenance, where they account for over 60% of spending in this category by all local governments. Other important county functions are transportation and public safety, but municipal governments are the most important providers in these two areas as well as in environment and housing and in utilities. Utilities are also the major role of so-called special district governments. These are organised to provide a variety of services including water, sanitation, parks and

Table 3.1. **Local government expenditures by type of government and function, 2001-02**

	County government	Municipal government	Township government	Special district government	School district government	% of total local government expenditure
Total direct expenditure ($ billions)	254	359	34	120	361	1 129
Per cent of total local government expenditure	22.5	31.8	3.0	10.7	32.0	100.0
Government's share in total local government spending on:						
Education	8.7	8.8	2.2	0.5	79.8	39.0
Social services and income maintenance	61.0	21.4	0.5	17.1	0.0	10.6
Transportation	30.6	49.8	6.5	13.1	0.0	5.6
Public safety	34.7	57.6	4.7	3.0	0.0	9.1
Environment and housing	18.1	53.8	4.1	24.0	0.0	9.3
Utility expenditure	5.0	52.3	1.5	41.2	0.0	10.6
Other	35.3	47.4	5.0	6.7	5.6	15.8

Source: US Bureau of the Census, 2002 Census of Governments, available at *www.census.gov/govs/www/estimate.html*.

transportation. They may overlap several municipal jurisdictions or be a subset of a single jurisdiction. Finally, school district governments perform practically no other function than operating public schools, but because of the importance of this function at the local government level, they account for one-third of total expenditure by local governments. On the revenue side, county, municipal and school district governments share the major local own-source revenue, property taxes, roughly in proportion to their expenditures. Municipal governments receive most local sales and income taxes, while school district governments benefit from by far the largest share of intergovernmental transfers, almost all from their state government. Direct transfers from the federal to local governments, which totalled $43 billion in 2001-02, are small in comparison both to federal transfers to state governments ($318 billion) and state government transfers to local governments ($356 billion).

Recent trends and future forces

While the decades between the Great Depression and the 1980s saw several large expansions of the federal government's size and role, which to some extent entailed federalisation of functions previously performed by sub-national governments, this trend has been reversed in several areas since the mid-1980s. Programmes whose operation has been devolved to lower levels of government, however, often still require funding from the federal government. One common feature has been a change in the trade-off between lower governments' autonomy in programme design on the one hand and their financing responsibilities on the other, notably through a switch from open-ended matching grants to earmarked, lump-sum grants (referred to as block grants in the US context, despite their earmarked nature). The switch from matching to block grants suggests that the intention of these grants is of a paternalistic kind rather than to correct for spill-over effects. The most important example of this development, the welfare reform of 1996, will be discussed in the following section. While devolution of programme responsibility appears to have produced efficiency gains through experimentation at the state level, it has also shifted greater financial risk to the states, raising the question whether they would be able to avoid welfare-reducing cyclicality in spending on core services if block grants were extended into areas such as health.

Sub-national governments' capacity for setting spending and revenue levels and for bearing the risk of cyclical fluctuations in spending and revenues has been reduced since the late 1970s by the widespread adoption or strengthening of tax and expenditure limitations. Virtually all states operate under some form of balanced budget rule enacted in state laws or enshrined in the states' constitutions. However, these balanced budget rules, which will be reviewed in the fourth section, did not prevent the growth in the size of state and local government during the 1960s and early 1970s, evident in Figure 3.1, and the concomitant upward drift in various tax rates. The "tax revolts" of the late 1970s and early 1980s saw many states adopting rules which typically restrict the growth in state and local governments' revenues and/or expenditures from one fiscal year to the next. While the strictness of tax and expenditure limitations varies across states, in some instances they have had the effect of shrinking the size of government in relation to the economy, as intended by their proponents. Problems arose, however, because for various reasons the entire spending restraint tended to fall on a few budget items, leading to outcomes that were certainly unintended. The design of fiscal rules that properly balance a desirable degree of sub-national fiscal flexibility against the risks of undesired perpetual government expansion and potential fiscal crises and bailouts remains a challenge.

Potentially the most important forces increasingly impacting on intergovernmental fiscal relations emanate from the ageing of the population. This is most obvious on the expenditures side of the ledger, where health and other age-related spending is on the rise. While many of the most strongly affected programmes are located at the federal level, there are substantial old-age-related expenditures at the sub-national level as well, primarily through the Medicaid programme. Moreover, ageing affects not only expenditures, but also the trend growth of revenue sources at different levels of government. In particular, some retirement income that is part of the growing share of benefits and transfer receipts in personal income is sheltered from personal income taxation. Also, older people tend to spend a smaller share on goods and services that are subject to sales tax, and more on those that are exempt, notably health services and pharmaceuticals. Ageing therefore threatens to reduce the main revenue sources of both the federal and the state governments; the main own-source revenue of local governments, the property tax, is less affected. The shift towards ageing-related expenditures that are mostly redistributive in nature is particularly problematic for states. Usually the funding of redistributive spending is achieved through progressive income taxation. But because of taxpayer mobility, states' ability to levy progressive income taxes is quite limited, and their other main revenue source, the sales tax, tends to be regressive. An important challenge going forward will therefore be to adjust the spending responsibilities of the various levels of government to their capacity to raise the required revenues in a manner that is desirable both on efficiency and equity grounds.

Issues concerning the allocation of spending responsibilities

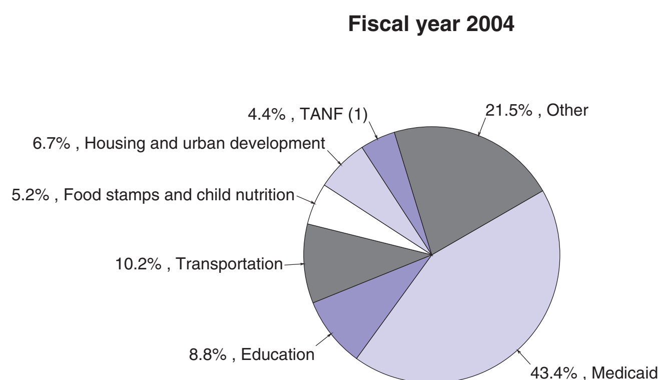
The argument for providing at the sub-national level public goods and services whose consumption is limited to the providing jurisdiction is that preferences for public services differ across jurisdictions, and that governments at lower levels know best the preferences of their constituents (Oates, 1972). Leading examples of these goods and services are elementary and secondary as well as higher education, public safety and basic infrastructure such as roads and transportation, sewerage and utilities. There appears to be considerable variation in the scope and amount of goods and services provided by local

governments across the country, some of which reflects differences in population density and economic structure. However, the conclusion that decentralised governments will provide the efficient level of public goods rests on a number of assumptions. The presence of spill-over effects can lead to sub-optimally low provision of public goods, while grants from higher levels of government can have the opposite effect. The question whether the level of public goods provision by *local* governments is efficient has received considerable attention, with several studies concluding that it is (Brueckner, 1982; Gramlich and Rubinfeld, 1982).[5] These findings are consistent with the evidence that both property taxes and services benefits are capitalised into property values, as the benefits of most services provided by local government accrue to property owners (Oates, 1969; Weimer and Wolkoff, 2001). However, not all the conditions for efficient local public-goods provision under "Tiebout sorting" appear to be met, as there is substantial redistribution across local governments in the context of school finance, presumably reflecting the importance of externalities associated with basic education. There also appear to be strong spill-over effects at the *state* level, at least for certain services such as medical spending (Brueckner, 1998; Baicker, 2005). Policy responses to the risk of undesirably low provision of redistributive and health services by state governments are discussed below.

The remainder of this section discusses in greater detail four areas in which intergovernmental relations play an important role in programme design and funding. Programmes in these four areas – income support, medical care for the indigent (Medicaid), highway construction and education – illustrate the diversity of the current structure of grants. Jointly they account for about two-thirds of total federal grants to state governments (Figure 3.4), and education alone accounts for more than half of total grants from state to local governments. Although, as mentioned earlier, all of these grants are earmarked, there is considerable variation across programmes in the freedom the receiving governments have in allocating these funds. Related to this variation in the lower level's competence for programme design and allocation are other dimensions along which different grants are distinct, such as whether they are capped at a specific amount or open-ended, and whether they are matching grants or lump-sum "block" grants (which are nonetheless earmarked) of a fixed size.

Figure 3.4. **Federal grants to state and local governments**

Fiscal year 2004



1. Temporary Assistance for Needy Families.

Source: Office of Management and Budget (2005), Budget of the US Government, Fiscal Year 2006, Historical Tables.

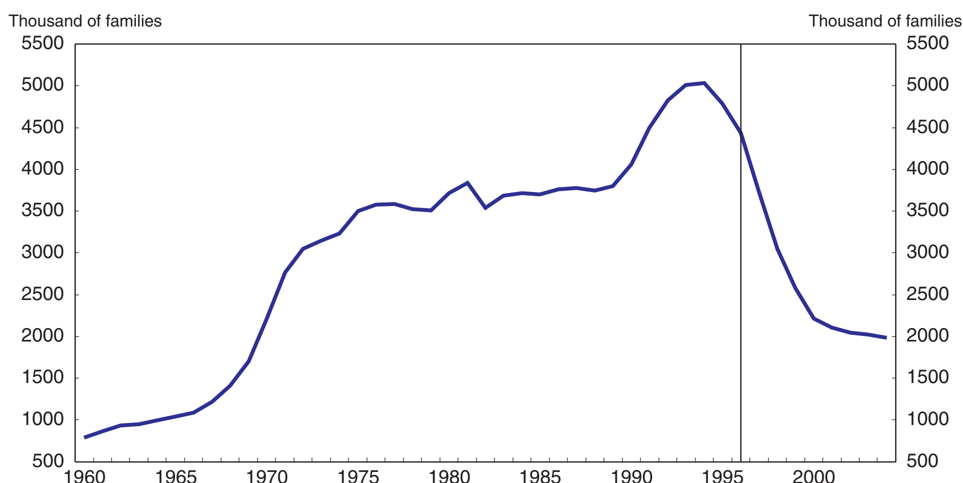
Welfare

Federal legislation enacted in August 1996 fundamentally changed the structure of public assistance programmes to low-income families. In terms of relations between the federal government and the states, its most important effect was to replace the previous open-ended federal matching grant under Aid to Families with Dependent Children (AFDC) by a capped block grant under Temporary Assistance for Needy Families (TANF). At the same time as imposing an upper limit on the federal contribution to welfare spending, the welfare reform removed many federal eligibility and payment rules, thus devolving to states much greater authority in programme design.[6] The 1996 reform was the culmination of a process that had started in the 1980s, when growing dissatisfaction with AFDC had led an increasing number of states to seek federal waivers from the AFDC rules (Blank, 2002). By the time that the welfare reform was enacted, 27 states had major state-wide waivers in place, most of which were designed to enforce work requirements for welfare recipients more stringently. These waiver programmes had to be approved and administered by the Department of Health and Human Services and had to be thoroughly evaluated. The experiences gained under these waivers were a critical element in shaping the 1996 reform legislation with its strong emphasis on work requirements (both work trigger rules and minimum work participation rates) and time limits. Specifically, by 2002 a state obtained the full amount of the TANF block grant only if at least 50% of all recipient families and 90% of two-parent families were working or in work preparation programmes whose design is largely at the states' discretion. However, caseload reductions were considered equivalent to work. TANF-funded benefits are limited to 60 months over the lifetime of any recipient, but states can exempt up to 20% of their caseload from this limit. The size of the federal block grant was fixed for each state at the level of its 1994 receipts under AFDC and two smaller programmes. To prevent states from substantially reducing their welfare programmes and diverting block grant funds to other purposes, the legislation included a "maintenance-of-effort" requirement by which states have to maintain at least 75% of their 1994 spending on programmes replaced by TANF, including AFDC-related child care.

The most important overall effect in terms of programme design has been the reorientation of support from non-working to working families through the combination of (federally mandated) work requirements, subsidies for work-related expenses (notably child care) and strengthening of work incentives through lower benefit reduction rates.[7] States have also made wide use of their new discretion under the reform legislation. Although the multi-dimensional character of state welfare programmes under TANF complicates the evaluation of the effects of individual welfare reform measures on recipient behaviour (Blank, 2002), the welfare reform is generally credited with being the main reason for the dramatic decline in caseloads during the second half of the 1990s (Figure 3.5). The nation-wide caseload, which had peaked under AFDC in March 1994 at 5.1 million families, declined through December 2000 to 2.2 million, with the bulk of this decline occurring between 1995 and 1999. During the same 1994 to 2000 period the percentage of children in families receiving AFDC or TANF benefits declined from 14.3% to 6.1%. Moreover, the decline in caseloads continued, although at a slower pace, through nearly the entire period of economic weakness during recent years, with the number of families receiving benefits in June 2004 (the latest available data) falling below 2 million. Whether caseloads should have been expected to rise during and immediately after the recession is unclear: caseloads under AFDC had shown no particular cyclical pattern, but the substantial outflow of welfare recipients into employment in the late 1990s might have

Figure 3.5. **Welfare caseloads**

Total number of families, calendar years, monthly average



Source: US Department of Health and Human Services.

suggested that some of them would reappear on welfare rolls. Overall, the experience suggests fairly stable integration of marginal populations into the labour market. Helped by the clause that caseload reductions are treated as equivalent to work participation rates, all states achieved the 50% all-family work target for 2002, and all but four states met the two-parent work target.

The traditional concern in the literature about allocating responsibility for welfare to the sub-national level is that it may lead states to engage in a "race to the bottom" with the result that welfare provision is ultimately much below the level that would prevail under a national welfare system (*e.g.* Brown and Oates, 1987). This result is more likely the more readily welfare recipients move from one jurisdiction to another in response to small differences in welfare benefits across jurisdictions. The maintenance-of-effort requirements included in the welfare reform legislation were presumably motivated by a concern that the move from a matching grant to a block grant might lead states to internalise this type of spill-over effect by cutting welfare spending. A number of empirical studies have arrived at conflicting results concerning the importance of welfare migration (see Brueckner (1998) for a survey of older results). More recent studies suggest that a modest amount of welfare migration exists, but that it is unlikely to reduce significantly the level of benefits offered by states.[8] Moreover, most of the empirical work is based on data prior to the welfare reforms, when the generosity of welfare benefits was relatively easy to measure by cash benefits under AFDC. Since then, the multi-dimensional nature of state programmes mentioned above has considerably complicated direct comparison of the overall generosity of different states' programmes, which may further impede welfare migration. Consequently, there appears to be little concern at this point that states are scaling back benefits because of an actual or perceived threat of migration from other states. This may in large part reflect the still generous funding under the block grants, which were based on state spending in 1994, the year with the highest caseload in the history of AFDC. Because TANF funds not spent in one year remain available for future use, the sharp decline in caseloads over the second half of the 1990s has allowed states to accumulate substantial reserves for welfare spending while at the same time expanding

their welfare benefits and shifting several programmes initially outside of AFDC under their maintenance-of-effort requirements.

The 1996 legislation had appropriated funding for the TANF block grant for six years, through fiscal year (FY) 2002, at a constant level of $16.5 billion per year without any inflation adjustment. Since then funding has been extended on a short-term basis, and separate versions of a reauthorisation bill in the House and the Senate Finance Committee propose to extend the block grant at the same level for five years. The work requirements under TANF are among the central issues in the two versions of the draft legislation. Both versions of the bill propose to raise the work participation rates by five percentage points each year for four years to 70% and to increase weekly hours of participation substantially. One concern with the proposed legislation is that it funds child care insufficiently, especially as the need for child care would rise as a consequence of the proposed strengthening of work requirements (Parrott and Fremstad, 2003). Another concern is that states met work participation targets in the past mostly or entirely through caseload reductions rather than work participation of recipients. However, the currently remaining population of recipients is increasingly difficult and, from the states' perspective, costly to integrate into the labour market; in fact, in recent years the proportion of TANF recipients who are working has fallen. Moreover, the House version of the bill would curtail states' flexibility in programme design by substantially narrowing the activities which qualify for the work requirements. In view of the success that states have had in reducing welfare rolls by exploiting the great degree of programme flexibility provided in the past, it seems advisable to resist or reverse tendencies to restrict states' ability to tailor programmes to their local needs by tightening work requirements in a way that proves impractical for states to implement.

Medicaid

Medicaid, the medical insurance programme for the indigent, is by far the largest programme shared between the federal government and the states.[9] Total Medicaid spending in FY 2003 was $275 billion (2½ per cent of GDP), of which $160 billion, or 58%, was funded by the federal government and the remaining $115 billion by state governments. The federal contribution to Medicaid accounts for slightly more than 40% of total federal grants to state and local governments. In contrast to the welfare programme discussed above, Medicaid is an open-ended entitlement under which every person meeting eligibility criteria has a right to receive services promised under the programme. Also unlike TANF, Medicaid is a matching grant under which the federal matching rate varies between 50 and 77%, depending on state income per capita. To be eligible for federal funds, states are required to provide Medicaid coverage to certain "mandatory eligibility groups", notably low-income families who would have met a state's eligibility requirements for AFDC as of July 1996. However, states can extend Medicaid coverage to optional groups, which are divided into "categorically needy" and "medically needy". Optional categorically needy populations share some characteristics with the mandatory groups. Under a "medically needy" programme, a state can extend Medicaid eligibility to persons who may have too much income to qualify under the mandatory or categorically needy groups, with the proviso that their excess income is offset by medical expenses. This is the principal mechanism of Medicaid's involvement in financing long-term care for the elderly. Similarly, services are divided among those that are mandatory under federal programme rules for the categorically needy and the medically needy eligible groups and

those that states can provide optionally. Importantly, the same matching rate applies to almost all services provided to mandatory populations or services as to optional populations or services, suggesting that the redistributive motive in Medicaid matching rates is at least as important as concerns for spill-over effects.

When Medicaid was created in 1965, it was intended as the medical care complement to income support under AFDC, and AFDC served as the gateway programme through which most beneficiaries signed up. By 2003, spending for optional services or populations accounted for almost two-thirds of total Medicaid spending, reflecting strong political pressures over past decades to extend Medicaid coverage beyond the initial target group. The importance of the shift in Medicaid's focus for the overall cost of the programme is illustrated in Table 3.2. Working-age adults and their children together still account for more than 70% of enrolment, but for little more than one quarter of total expenditures. By contrast, the aged and disabled, most of whom belong to optional groups, account for less than 30% of enrolment but nearly 70% of expenditures. More than half of the aged and disabled are so-called "dual eligibles", persons who are entitled to Medicare and are eligible for some level of Medicaid benefits due to low incomes and assets.[10] Although Medicare covers much of their acute-care costs, Medicaid pays for Medicare premiums, co-payments and deductibles, for prescription drugs (until 2006), and for certain services not covered by Medicare, most importantly long-term (including mental) care. Recent years have seen the combination of two major sources of cost pressure on the programme, which have greatly contributed to the fiscal distress of the states (Boyd, 2003). One source is that, as Medicaid eligibility became increasingly decoupled from welfare eligibility during the 1990s, states have extended coverage much higher up the income distribution. Combined with the ongoing decline in employer-sponsored health insurance coverage (Wiatrowski, 2004), this has had the effect of sharply increasing Medicaid enrolment in the wake of the recent economic downturn (Table 3.3). The second source is the ageing of the population and hence the secular growth of the number of Medicaid beneficiaries with very high medical expenditures, largely because Medicaid is the only source of government assistance for long-term and nursing home care. While the discussion below focuses on issues of cost-sharing between the federal and state levels, as these are the relevant issues in the context of the present chapter, it should be recognised that the problem of Medicaid cost containment against the background of an ageing society, rapidly rising medical costs and

Table 3.2. **Medicaid enrolment and expenditures by group, FY 2002**

	Enrolment[1]		Expenditures[2]	
	Millions	Per cent	$ billion	Per cent
Total	39.9	100.0	214.9	100.0
Aged and disabled	11.7	29.3	147.5	68.7
Dual eligibles[3]	6.7	16.9	91.1	42.4
Other aged and disabled[3]	5.0	12.4	56.4	26.3
Adults	9.8	24.6	24.1	11.2
Children	18.4	46.1	34.3	16.1

1. Enrolment measured in person-years.
2. Items do not add up to total because the attribution of 4% of expenditures ($8.6 billion) is unknown.
3. Breakdown of enrolment of aged and disabled in dual eligibles and others was obtained by applying proportional size of these two groups estimated by Bruen and Holahan to most recent CMS enrolment data for FY 2002.

Source: Centers for Medicare and Medicaid Services, 2003 Data Compendium, available at *www.cms.hhs.gov*; Bruen, B. and J. Holahan (2003), "Shifting the Cost of Dual Eligibles: Implications for States and the Federal Government", Kaiser Commission on Medicaid and the Uninsured, Issue Paper #4152, November.

Table 3.3. **Average annual changes in Medicaid enrolment and spending, 2000-03**

	Enrolment (millions)			Spending per enrolee ($)			Total spending ($ billions)		
	2000	2003	Average per cent change	2000	2003	Average per cent change	2000	2003	Average per cent change
Aged and disabled	9.9	10.8	2.9	11 879	14 122	5.9	117.3	151.9	9.0
Families	22.3	29.8	10.1	1 988	2 403	6.5	44.4	71.6	17.3
All enrolees	32.2	40.6	8.0	5 023	5 512	3.1	161.7	223.5	11.4

Source: Holahan, J. and A. Ghosh (2005), "Understanding the Recent Growth in Medicaid Spending, 2000-2003", Health Affairs, Web Exclusive W5, 52-62.

declining private insurance options for large parts of the low-income population requires much more fundamental responses than a mere redistribution of tasks among levels of government.[11]

At the same time as most states considerably expanded Medicaid eligibility during the 1990s, they searched for strategies to contain increases in costs per enrolee, principally through increased reliance on managed care. The need for cost containment measures became much more acute over the past four years, when Medicaid enrolment surged while state tax revenues dropped sharply. These measures focused on freezing or cutting Medicaid payment rates to providers (*i.e.* hospitals, physicians, managed care organisations or nursing homes), reducing optional benefits, and developing preferred drug lists (Smith *et al.*, 2004). Reductions in Medicaid eligibility have not been used extensively, however. This reflects in part the problem that populations cut off from Medicaid eligibility would usually have no other access to health insurance or necessary health services, resulting either in reduced public health or in increases in uncompensated care at the level of county medical facilities. Waivers under Section 1115 of the Social Security Act, which throughout Medicaid's 40-year history have provided states with room for experimentation in programme design by exempting them from certain federal standards, have also played an important role in recent efforts at cost containment. Under "comprehensive" waivers, states can make very broad changes in eligibility, benefits or cost sharing in Medicaid. Currently, 27 states have approved comprehensive Section 1115 waivers, many of which were adopted primarily to move beneficiaries to managed care (Kaiser Commission on Medicaid and the Uninsured, 2005).

Debate about reform of Medicaid finances has focused on three issues. The first concerns states' use of certain intergovernmental transfers and financing mechanisms which, although legal when taken in isolation, can be combined in ways to raise the federal share of total Medicaid funding above the statutory federal matching rate or to make federal matching funds available for purposes other than purchasing health care services covered by Medicaid for eligible persons (Box 3.1). Efforts to strengthen Medicaid's fiscal integrity by cutting down on these mechanisms have been under way since the late 1990s, and the Administration's FY 2006 budget proposes further steps in this direction. A second issue is whether a more fundamental reform of the programme should be achieved in a fashion similar to the change from AFDC to TANF, by combining devolution of programme design with the replacement of the current open-ended federal matching grant by a capped federal contribution. It seems questionable whether greater devolution to the state level would lead to more efficient programme design. As mentioned before, states have already great latitude to experiment with programme changes under Section 1115 waivers, and the

Box 3.1. **Intergovernmental transfers and Medicaid maximisation**

The practical complexities involved in operating a matching grant programme can be formidable. In the case of Medicaid, these complexities are compounded by the fact that the recipients of payments, *i.e.* health care providers, are often themselves state or local government entities, a point illustrated by the financing mechanisms discussed in this box. These mechanisms involve financial transactions among government entities which, although not improper *per se*, have at times been used to increase a state's federal matching rate in a way not intended by the law. On several occasions in the past Congress has moved to restrict their use, and further restrictions on these mechanisms are part of the Administration's current proposals to reduce federal Medicaid spending.*

The federal share in Medicaid payments varies by state from 50 to 77%, with the remaining share paid for by the state. By law and regulation, the state share of Medicaid spending must consist of public funds and no more than 60% of it may be financed from local funds. When local funds are used as part of the state share of Medicaid, they often result in an intergovernmental transfer (IGT) from the local to the state level. Many of these IGTs are entirely legitimate. For example, New York requires counties to pay 20% of the non-federal share of Medicaid long-term care expenses and 50% of the non-federal share of all other Medicaid services. To compensate local governments, state sales tax revenues are shared equally between the state government and the counties. However, IGTs can be employed in ways that are not in keeping with the spirit of how Medicaid was to be financed. For example, a state may order a provider (*e.g.* a hospital) to make an IGT of $10 million to the state. The state then makes a Medicaid payment of $12 million to the provider, for a net gain for the provider of $2 million. Assuming a 50% federal matching rate, the state receives $6 million in federal matching funds. Therefore, the state has a net gain of $4 million.

This example assumes that the provider did not incur any Medicaid expenses as the result of the $12 million payment from the state, but that nonetheless this payment was legitimate under Medicaid. Such payments are possible under two alternative provisions, Disproportionate Share Hospital (DSH) payments and Upper Payment Limits (UPL). DSH payments allow states to pay more to hospitals that care for a large number of low-income patients, the rationale being that hospitals that render a large volume of care to low-income persons often lose money as a result of low Medicaid reimbursement rates or, if the care was provided to uninsured persons, end up holding bad debts. Moreover, hospitals with large caseloads of low-income patients frequently have small caseloads of privately insured patients and thus less room for shifting the cost of uncompensated care to the privately insured patients. UPLs were established as a way to limit federal Medicaid expenditures by establishing that Medicaid payments (except DSH payments) can be no greater than the amount Medicare would have paid for the same service. Importantly, the UPL is not determined by the Medicare payment for a single procedure or the payment for all services a provider renders under Medicaid. Instead, it is based on the total amount that can be paid to an entire class of providers if every provider in that class were paid the Medicare rate for all services it provided under Medicaid.

While many DSH and UPL payments are undoubtedly used to raise the provision of medical services to eligible populations, there is evidence that a large fraction is being combined with IGTs to generate federal payments well in excess of the actual cost of medical services delivered to beneficiaries. Some states retain most of the federal share of DSH payments, with their hospitals receiving little, if any, additional Medicaid funds as a consequence. A survey in 1997 found that only about 40% of total DSH expenditures in that year went to hospitals to cover the cost of caring for Medicaid and uninsured patients. Similarly, a recent survey of state UPL payments revealed that in 2000 more than 80% of gains accrued to states, most of which allocated those gains to their Medicaid general fund. Thus, UPLs were used to finance the state share of new Medicaid payments, earning the state another federal matching payment.

* For further discussion of the issues covered in this box see Coughlin and Zuckerman (2003) and Rousseau and Schneider (2004).

evidence indicates that Medicaid's administrative costs are no higher than those of private insurers, while Medicaid payment rates are frequently lower. Moreover, changes to the incentive structure for recipients, which was perhaps the most important aspect of the welfare reform, are much less feasible in a health insurance programme for the indigent, where room for co-payments and deductibles is by necessity very limited. It would be difficult to design a predetermined federal contribution that takes into consideration changes in enrolment rates and in the changing nature of the enrolled population, which greatly affect the programme's cost.[12] In light of states' more limited ability to raise revenues and the difficulty of predicting the forces shaping Medicaid expenses, the *ex post* examination of past proposals suggests that a block grant for Medicaid would likely result in substantial benefit and coverage reductions over time (Lambrew, 2005). A final issue is whether to shift all services currently provided to dual eligibles by *Medicaid*, including long-term care, to the federal level (Bruen and Holahan, 2003; National Governors Association, 2005). This would imply combining in *Medicare* the provision of means-tested benefits with those that are not. The rationale would be that the federal level is the appropriate one for addressing policy challenges that are as comprehensive as the cost pressures associated with the ageing of society. Medicaid policy, which would then focus on the non-elderly population, would remain at the state level so as to exploit synergies between income support and medical insurance for the working-age poor. In fact, one important benefit to dual eligibles hitherto provided by Medicaid, namely outpatient prescription drugs, will in any case shift to Medicare at the beginning of 2006, when the new Medicare prescription drug benefit will become fully effective. However, states will have to finance most of Medicare's cost of providing prescription drugs to dual eligibles through monthly payments to the federal government, while losing the ability to determine which drugs will be covered (Kaiser Commission on Medicaid and the Uninsured, 2003).

Highway spending

Highway construction is one of the largest areas of capital expenditures by state and local governments. Total highway expenditures by all levels of government in 2000 amounted to $127 billion, with about 62% spent by state governments and 37% by local governments. Direct federal spending on highways contributed only 1.5% of the total. However, the federal government's role in financing highway expenditures is substantially larger. In 2000, federal matching grants earmarked for highway programmes accounted for $31 billion, or 24% of total highway spending. The principal vehicle through which the federal government finances these grants is the Federal Highway Trust Fund, which is overwhelmingly financed by federal tax receipts on motor fuel. Congress has for some time passed multi-year authorising legislation, which establishes upper limits for funds that can be made available to states for highway funding.[13] About 90% of the funds are allocated to states at the beginning of each federal fiscal year according to a formula provided by law called apportionment; the remaining 10% are allocated by Congress on a discretionary basis throughout the fiscal year. The use of apportioned funds by each state is further restricted by assigning the funds to different programmes, such as interstate highway maintenance or national highway construction. States that incur expenses for qualifying projects are reimbursed afterwards at the federal matching rate which varies across programmes, but is no lower than 80% and oftentimes as high as 95%. When the Federal Highway Trust Fund was created in the mid-1950s, the intention was to provide states with

an incentive to create an integrated nation-wide highway network without relying on tolls for its financing. However, this network having been established, the very low price of spending on new highways from the states' perspective creates the risk of excessively high spending on qualifying projects (Roth, 2005). At the least, it seems advisable to reduce the federal matching rate substantially. Alternatively, highway construction and maintenance should be entirely financed at the sub-national level, with states being allowed to charge tolls even on interstate highways in order to have users pay for them.

Education

All state constitutions identify the role of the state government in establishing and operating a public school system that is free to all students. While the exact arrangements differ, state governments have historically issued regulations and laws governing schools and then delegated responsibility for school operation to local governments.[14] Although there is wide variation across states, state and local governments typically share funding responsibilities; this issue will be discussed in the following section. The federal government's role in primary and secondary education has historically been small. Federal government funding in FY 2004 amounted to $38 billion, or 8% of aggregate nation-wide expenditures for primary and secondary schools of about $500 billion, while the state and local share was 83% (Department of Education, 2005). Most of the federal contribution is targeted at economically disadvantaged students under Title 1 of the Elementary and Secondary Education Act (ESEA) of 1965 and at students with disabilities under the Individuals with Disabilities Education Act. ESEA launched a comprehensive set of programmes, including federal aid to disadvantaged children, to address the problems of poor urban and rural areas. The No Child Left Behind Act of 2001 (NCLB) is the most recent re-authorisation of ESEA. Compared to previous law, NCLB drastically expands testing requirements and establishes new accountability requirements that states have to meet in order to remain eligible for federal grants. Concerning testing, the central requirement is to annually test the reading and mathematics proficiency of students in grades 3 through 8 in all public schools, not only those in schools receiving ESEA Title 1 funds, using achievement standards developed by each state and approved by the Department of Education. State accountability requirements include that states: *i*) determine whether all schools, not only Title 1 schools, are making adequate yearly progress (AYP) toward a goal of 100% proficiency according to state academic assessments for all students in 12 years; *ii*) develop annual measurable objectives and intermediate goals; *iii*) monitor whether school districts meet the required AYP goals; and *iv*) collect and report on individual student, school, district and state test data. By January 2002, when NCLB took effect, every state has had an accountability plan approved; however, only about one-third of the states had fully met the standards and assessment requirements for NCLB's predecessor, the Improving America's Schools Act of 1994, which were less prescriptive and interventionist than those of NCLB. While some states were therefore reasonably well prepared to meet NCLB's May 2003 deadline for submitting final accountability plans to the Department of Education for approval, others were not.[15]

The key debate about NCLB in the context of fiscal relations is whether, and to what extent, the law is an "unfunded mandate„ in the sense that it imposes financial burdens on state budgets without adequate federal funding. The Administration has argued that there exist no federal mandates in the context of federal programme obligations because states are free to forgo federal grants (Department of Education, 2005). By contrast, the National

Conference of State Legislatures (NCSL) has calculated that the $12.3 billion of federal funds provided in FY 2004 for the implementation of NCLB was $9.6 billion less than the amounts for mandated activities that states must implement to comply with NCLB, bringing the cumulative under-funding up to that year to $27 billion (National Conference of State Legislatures, 2004). Considering the various degrees to which states had developed state-wide testing and accountability systems prior to NCLB, the extent of under-funding experienced by states likely differs substantially. As pointed out by the Administration, states do have the option of not participating in NCLB. However, the funds represent a substantial share of vital school spending; the absence of any "hold harmless provision' that would protect prior funding means that opting out of NCLB would be very costly, and replacing those funds would be politically difficult. In response to an inquiry by the state of Utah, the Department of Education indicated that opting out of NCLB would cost a state not only its entire ESEA Title 1 funds, but nearly as much again in funds for other programmes. In view of the effectively compulsory compliance of states with NCLB's requirements, a task force established by the NCSL recently called for substantially increased federal funding for the law (National Conference of State Legislatures, 2005).

Summary

To summarise this section, current grants from the federal to state governments are all earmarked, but there is considerable variation concerning how specific federal rules are and how open-ended the federal contribution is. Neither revenue sharing nor fiscal equalisation across states exist, leaving differences in the size of TANF block grants and in federal matching rates for Medicaid as the only significant elements of re-distribution across states. Given the substantial degree of autonomy which states have to determine their spending patterns, grants are the main mechanism through which the federal government can influence spending decisions at the state level. But the main argument in the literature for grants serving allocative purposes, namely to correct for spill-overs of benefits across jurisdiction borders, does not seem to explain the existing federal grant structure well: where grants are matching grants, matching rates are often too high (*e.g.* Medicaid and especially highway funding) to purely reflect corrections for spill-overs. Conversely, the recent trend towards earmarked but closed-ended block grants is likely better understood as a means to make greater devolution of programme design to states politically acceptable without giving up the paternalistic motivation of inducing states to provide a minimum level of certain services, rather than as an attempt to adjust matching rates for the purpose of correcting for spill-overs (Inman and Rubinfeld, 1997). In the context of welfare reform, this devolution has contributed to the remarkable decline in caseloads by encouraging experimentation in programme design, and here, as well as in the area of education, tendencies to restrict states' flexibility in adapting programmes to their needs should be resisted or reversed. There are stronger tensions, however, between states' desire to extend Medicaid coverage to certain populations and their ability to finance their share of the resulting costs. This raises the question whether coverage of some populations should be taken over entirely by the federal government in view of states' more limited ability to raise funds, which is the topic of the next section.

Promoting the efficiency of public funding

This section examines issues related to taxation at the state and local government levels, and aspects of their interaction with federal taxation.[16] While user charges should,

and do, play a large role at the state and local level, taxes are quantitatively more important and raise conceptually more challenging issues and are therefore the focus of this section. Besides general characteristics of a good tax, such as a stable and predictable yield over time, fairness and visibility, two principles are important specifically in a federal context: that the tax base should not shrink over time, and that taxes should not be exported to other jurisdictions. The first of these two principles is often thought to imply that mobile bases, notably capital, should not be taxed at the sub-national level, but as pointed out by Oates and Schwab (1991), it really only implies that *non-benefit* taxes on mobile units should be avoided. It does, however, probably impose limits on sub-national governments' ability to levy progressive income taxes. The undesirability of tax exporting may also militate against non-benefit business taxes at the local level. Most of this section focuses on the main tax bases for state governments: the personal and corporate income taxes and sales taxes. The latter two in particular are increasingly beset by problems that narrow their bases. States therefore face questions how, if at all, to tax businesses and how to adapt their sales taxes to the increase in remote sales and electronic commerce. Issues of local finance, in particular the property tax as a source for education funding, and deductibility of state and local taxes at the federal level are also discussed.

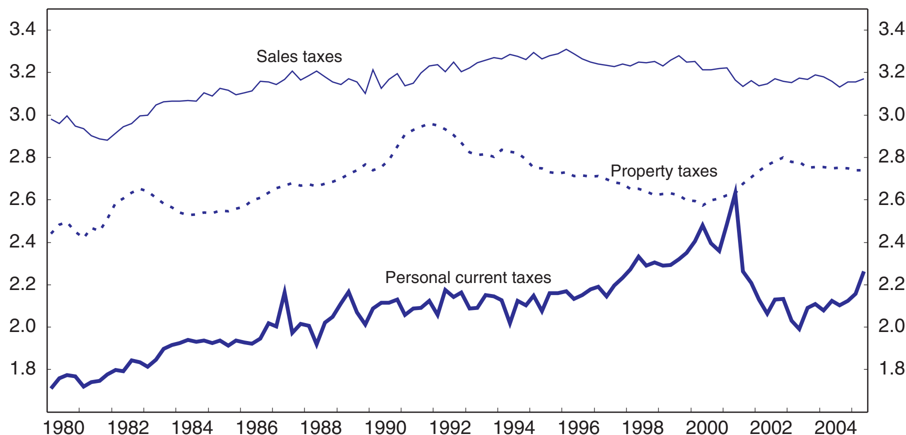
Personal income tax

As mentioned earlier, personal income taxes are the second most important tax revenue source for state governments. Seven states do not have their own income tax, and another two states tax income from dividends and interest only. Of the remaining 41 states, 27 use the federal definition of adjusted gross income, but then apply their own amounts for standard deductions and exemptions. Another ten states go further by also using federal deductions and exemptions, thus linking their definition of taxable income to the federal definition. Only four states that operate an income tax define their tax bases independently of the federal tax code. This widespread reliance by the states on the federal tax base means that changes in federal law affecting the tax base affect state revenues, whereas changes in federal tax rates usually do not. The substantial broadening of the federal income tax base that resulted from the tax reform of 1986 thus produced windfall gains for those states that chose not to reduce their tax rates in line with the federal rate reductions. Since then, the successive narrowing of the federal tax base has had the opposite effect. Similarly, the increase in 2003 of the federal standard deduction for married couples to mitigate or remove the "marriage penalty" resulted in revenue losses for those ten states that use federal deductions and exemptions. States have the option of decoupling their tax code from its federal counterpart, but only at the cost of complicating their taxpayers' income tax compliance. The principal difference between the federal and state income taxes is the more modest progressivity of the latter. Six states operate a flat tax, and the top bracket of another 22 states starts below $50 000. States' top marginal tax rates are clustered in the range of 5 to 7%, with six states having top marginal tax rates below 5% and 13 states above 7%. Even where states' top tax bracket starts only at high income levels, the degree of progressivity is quite small, with typically less than 1 percentage point difference between the top rate and the rate applying at a taxable income of $50 000. The limited progressivity of state income taxes is consistent with the view that states' capacity to impose progressive income taxation is proscribed by taxpayer mobility (Feldstein and Wrobel, 1998).

Certain changes in the composition of personal income have affected, and are likely to continue to affect, the size and reliability of the income tax as a revenue source. There was an enormous run-up in state and local income tax revenues during the late 1990s, despite tax rate reductions by a number of states, followed by the largest decline during the post-war period (Figure 3.6). This volatility in income tax receipts was largely driven by surprisingly strong capital gains during the late 1990s, reinforced by a shift in compensation practices towards performance-related compensation such as stock options, which subsequently dried up. In conjunction with the tax and expenditure limitations discussed below, this instability in revenues led to acute problems in state budgeting, necessitating reductions in core services just as the economy weakened. A longer-term problem, largely driven by increases in the cost of health care, is the shift within personal income from taxable to tax-exempt forms of income, notably in the form of employer-sponsored health insurance. As shown in Table 3.4, the share of income that is partly or completely tax exempt (employer contributions for employee benefits and transfer payments) rose considerably over the period 1960 to 2004. Assuming a stable ratio of personal income to GDP, as has been approximately the case since 1980, any further shift towards tax-exempt income forms would imply a reduction in the size of the income tax base relative to GDP.

Figure 3.6. **State and local tax revenues**

Per cent of GDP



Source: Bureau of Economic Analysis.

Corporate income tax

In contrast to the personal income tax, the corporate income tax plays a much smaller role at the sub-national level, and one that has been steadily declining over recent decades. Corporate income taxes currently exist in 46 states; Alaska, Florida and New Hampshire have corporate income taxes but no personal income tax.[17] From a peak of nearly 10%, the share of the corporate income tax in state tax revenues has declined to just over 5% in 2002. Part of this trend is explained by successive reductions in tax rates; top marginal tax rates in most states are currently between 6 and 10%. However, the use of corporate income tax exemptions as a development tool by states and the greater availability and more aggressive use of tax shelters by multi-state companies have also contributed to the

Table 3.4. **Sources of personal income, 1960-2004**

	Total personal income (% of GDP)	Percentage of total personal income			
		Net earnings[1]	Dividends, interest and rent	Other labour income[2]	Transfer payments
1960	78.2	78.7	13.4	3.5	6.2
1970	80.8	75.1	13.7	5.0	8.9
1980	82.7	67.2	16.0	8.0	12.1
1990	84.1	64.3	20.0	7.7	12.2
2000	85.9	65.9	18.2	7.2	12.9
2004	82.4	64.7	16.0	9.1	14.5

1. Includes wages, salaries and proprietors' income.
2. Employer contributions for employee benefits other than government social insurance.

Source: Bureau of Economic Analysis.

decline. Tax credits or exemptions have been used on a categorical basis (such as credits for research and development expenses enacted in California and Texas in 1999) or as a tool to attract specific companies to locate in a particular state. The extent to which multi-state companies' income is subject to income taxation in a particular state is determined by apportionment formulas. For some time, the standard among states was to weigh equally the share of a company's property, payroll and sales in a state to arrive at the share of its income subject to taxation in the state. Recently, states have used variations in the weights on these three factors to grant favourable treatment to companies relocating to their state. Moreover, the use of tax shelters has been facilitated by Supreme Court decisions requiring a minimum level of activity, or "nexus", of a corporation in a state before it is subject to the state corporate income tax. As a result, federal law prohibits a state from levying corporate income taxes on a company that sells goods in the state if the company's presence in the state is limited to salespeople who solicit sales that are approved and delivered from outside the state. Legislation currently before Congress would further limit states' ability to collect income taxes from out-of-state companies (Mazerov, 2004). In view of the distorting nature of corporate income tax competition among states, the successive narrowing of its bases and its high administrative cost, states should consider replacing it by a more efficient form of business activity taxation, such as the value-added tax discussed below.

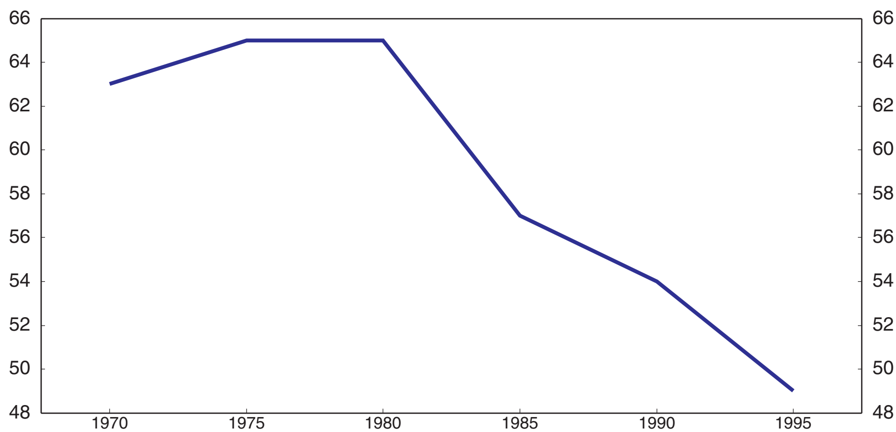
Sales taxes

Sales taxes are the single most important form of own-source revenue for states and are also of some importance for local governments. About two-thirds of sales tax receipts are derived from general sales taxes, with the remainder being selective sales taxes on specific items, most importantly motor fuels. All but five states levy sales taxes, and one of those five states (Alaska) levies sales taxes at the local level. Thirty-two of the other 45 states have both state and local sales taxes.[18] Of those states that have a sales tax, combined state and local rates range from 4 to 11%. As shown in Figure 3.6, state and local sales tax revenues rose slightly in relation to GDP during the 1980s but have declined over the past ten years. However, this relative stability of sales tax revenues masks divergent developments in the size of the tax base and tax rates. Whereas tax rates have trended up, the tax base narrowed substantially from 1980 to 1995 (and has probably continued shrinking since then), mostly due to a shift in consumption patterns from goods towards services, many of which are exempt from the sales tax (Figure 3.7). Much of the shift between services and goods has been accounted for by increased medical spending, which

roughly tripled as a share of consumer spending between 1960 and 2002. Efforts by states to mitigate the regressivity of the tax by reducing or eliminating sales tax on food for home consumption are another important reason for the narrowing of the tax base. Between 1996 and 2004, seven states either reduced or phased out sales tax on food, leaving only 14 states that fully tax food. Moreover, because the sales tax is intended to be a tax on final consumption, increasingly such items as agricultural and business equipment, energy and data processing services have been exempted.

Figure 3.7. **State sales tax base**

Per cent of state personal income



Source: Mikesell, J. (1997), "State Retail Sales Taxation: A Quarter-century Retrospective", State Tax Notes, 30 June.

Issues of federalism have arisen in the context of the taxation of goods and services purchased out-of-state. All states that levy a sales tax also have a statutory use tax, which is the equivalent of sales tax to be paid by users of goods purchased out-of-state. Enforcement of this tax would be simple if states could require remote sellers to collect use tax on their behalf, but the Supreme Court has repeatedly ruled that states cannot force remote sellers to do so as long as these lack "substantial nexus" with the state, on the grounds that compliance of such sellers with up to 45 states' sales tax codes would pose an unjustifiable burden on interstate commerce. The use tax can therefore be enforced at acceptable cost only for items that have to be registered, such as cars and boats. The issue of taxing out-of-state purchases has gained in importance with the expansion of mail-order businesses and more recently the advent of Internet retailing. Estimates of uncollected taxes from remote sales in 2003 range from $2.5 billion to $20.4 billion (General Accounting Office, 2000). However, the Supreme Court also ruled that Congress has the power to permit states to require remote sellers to collect use taxes. A federal advisory commission established to study the related question of taxing the access charges of Internet providers was unable to reach the required two-thirds majority to issue official findings (Advisory Commission on Electronic Commerce, 2000), but the "majority policy proposals" forwarded by the Commission to Congress included the suggestion to allow the collection of use taxes on remote sales provided state and local governments met certain requirements for simplifying and standardising their tax bases or rates.[19]

These developments have sparked a remarkable voluntary effort, the Streamlined Sales Tax Project (SSTP), by 42 of the 45 states that levy a sales tax and the District of Columbia.[20] The objective of SSTP is to encourage businesses to voluntarily collect use taxes by harmonising definitions and by simplifying the tax rate structure without imposing uniform sales tax bases or rates across states. By November 2002, 34 states and the District of Columbia had agreed on the administrative aspects of such a system and submitted the Streamlined Sales and Use Tax Agreement (SSUTA) to states for adoption by their legislatures. By early 2005, legislation bringing state sales and use tax statutes into conformity with SSUTA had become law in 22 states, and voluntary compliance of businesses will start in October 2005. The main provisions of SSUTA are that states jointly define the items included in major categories of goods and services that are subject to sales taxation, with each state composing its base from among those categories. Local governments that levy sales taxes have to use the same base as the state's. All items in a state's tax base are subject to the same tax rate, except for food and drugs to which a different rate may apply. Only one local rate is permitted, and all local sales taxes are to be administered by the state. SSUTA also establishes uniform rules for the frequency of tax filings and for changes to tax bases and rates. An important aspect of the agreement was the establishment of certified service providers (CSPs) with whom remote sellers could choose to contract to handle all the seller's sales and use tax functions, including filing all tax returns. Whether vendors would deal with their sales and use taxes on their own or through a CSP, they would use specifically designed and certified software except for large sellers who would be allowed to use their own software provided it had been approved by the states. To induce sellers to participate, all CSPs' costs would be paid from state tax revenue. Ultimately, it is hoped that the system will demonstrate how tax simplification combined with shared software can reduce compliance costs and thereby increase the likelihood of Congressional action to require remote collection.

Although simplification of state sales taxes is an important step in the right direction, the inefficiencies inherent in the sales tax are such that state governments should consider replacing sales taxes by a broad-based value-added tax. As discussed above, the intention of the sales tax to be a tax on final consumption is in practice thwarted by the fact that many goods and services are used both as business inputs and in final consumption. The problem of tax cascading is therefore inevitable, whereas a VAT sidesteps this problem and by implication makes it unnecessary to arbitrarily exclude most services from the tax base. Introducing a VAT would lead to a substantial broadening of the tax base and would therefore allow an equally substantial reduction of tax rates and deadweight losses. A VAT might also be an efficient replacement for the corporate income tax, as it is more neutral with regard to business decisions than certain other business taxes, for example by applying to all firms regardless of their organisational form. A VAT could be either in the form of an "operational" VAT, in which businesses calculate, and are taxed on, the value added in their production process, or a transactions-based, or "invoice-credit", VAT in which businesses are liable for the full VAT on all their sales but can deduct any VAT paid on its purchases from suppliers. An operational VAT is likely simpler and less costly for a state to administer than the corporate income tax (Snell, 2004b). The value added of multi-state businesses would be taxed using the same apportionment formula as under the current corporate income tax. Replacing the corporate income tax with a VAT would shift the emphasis from ability to pay to the benefits principle of taxation, as the benefits that firms receive from state and local expenditures are presumably better

captured by their less volatile value added than by more volatile profits. However, if a VAT were chosen to replace a state sales tax, it would be intended as a consumption tax, not a business tax. Although it is unclear where the final incidence of an operational VAT would fall, a state-level operational VAT might be problematic as a consumption tax because it would be incompatible with the destination principle, which holds that consumption should be taxed depending on the location of consumption, not of the purchase.[21] An invoice-credit VAT can be structured so as to implement the destination principle, and the European Union experience suggests that concerns in the literature that such a system would be excessively costly and complicated in a federal setting, are exaggerated. One interesting aspect of the SSTP discussed above is that it suggests how some of the information exchange necessary for implementing a state-level invoice-credit VAT can be achieved at acceptable cost through the combination of computer technology and some tax system simplifications without unduly restricting the fiscal autonomy of state and local governments (Box 3.2).

Property taxes and school finance

Property taxes are the main tax revenue source of local governments, and in 2001-02 they accounted for 45% of local governments' own-source revenues and 25% of their total revenues. By contrast, they represent less than 2% of state tax collections. The property tax is readily perceived as a benefits tax that funds primary and secondary education and other local government services whose benefits accrue to local residents. It also has the advantage of being little affected by macroeconomic fluctuations, which is important in view of local governments' limited ability to borrow, although it is not immune to fluctuations in real estate values. Property taxes are assessed by county, municipal and school district governments. Tax administration varies considerably across states, partly reflecting variations in local government structures more broadly. For example, school districts are in some states administered by county governments, which may then impose property taxes both for their own purposes and for those of the school districts. Although the property tax is therefore essential to local self-government, state legislatures play an important role in deciding on tax design and exemptions. Important examples of state involvement in property taxation are the so-called homestead exemptions, by which states mandate certain exemption amounts of the value of a property from taxation, often targeted at taxpayers on the basis of age or disability; the establishment of standards and rules for property value assessments; and the deductibility of property tax payments in the calculation of state income taxes.

More importantly, two developments over recent decades have weakened local fiscal autonomy. First, although locally-raised property taxes play a major role in financing primary and secondary education, school financing is at the same time the most important case of redistribution across jurisdictions, specifically across public school districts within states. Beginning in the 1970s, the supreme courts in several states have ruled the existing extent of financing school districts through their own property taxes as unconstitutional because the pronounced differences in the size of the tax base across school districts would imply a violation of constitutional equity principles.[22] In response, states' involvement in financing school districts, primarily through foundation aid, increased substantially.[23] Based on data from the five-yearly Census of School System Finance, the share of state funds in total school district revenues increased from 38% in 1972 to 49% in 2002, whereas over the same period the share of local funds declined from 53% to 43%.

Box 3.2. **Implementing a sub-national VAT and the destination principle***

A number of federal countries use the VAT as a major tax source, but in most of them the VAT is a federal tax which either accrues entirely to the federal government or is shared with sub-national governments according to some re-distribution formula. A shared federal-state tax is unappealing in the US context, where state fiscal autonomy is constitutionally enshrined and political support for revenue sharing has historically been low. Two principal alternatives exist for dealing with inter-state (or international) trade under an invoice-credit VAT so as to respect the destination principle, which holds that factors of production should be taxed where they are used and final goods and services where they are consumed, not where they originate. The first, called the deferred-payment system, zero-rates sales to *registered traders* in another state from VAT in the state of the vendor. The importing trader, however, receives no VAT credit on the imported good either and is therefore liable to pay VAT at the rate applicable in his state on the full value of the import. VAT is therefore collected on imports only when they are resold or incorporated into goods sold by the importing firm. This is very close to the current arrangements within the European Union (Keen and Smith, 1996). The alternative is the clearing-house method under which VAT is charged on exports by the exporting state, with a credit allowed for this VAT by the importing state. Revenue accounts then need to be balanced between states, but doing so requires either transaction records or has to be based on some form of consumption statistics. In practice, the deferred-payment system, which relies on private-sector accounting subject to VAT audits, appears to be the more practical solution.

The issues that arise because of inter-state sales to *final consumers* are essentially the same as those discussed in the main text in the context of the sales tax. There are two conceptually different issues, one being remote sales such as mail-order sales and electronic commerce, the other being cross-border shopping. The problems arising from remote sales can be addressed in the same manner as currently developed under the SSTP. In effect, for remote sales to final consumers taxation would follow the clearing-house system, with vendors withholding the VAT applicable in the state to which the good is being shipped. This principle could also be applied to electronic commerce if a physical shipping or billing address is known. Since the abolition of tax-related border formalities in the European Union in 1993, for example, firms engaged in remote selling must charge and remit VAT according to the destination principle once their turnover exceeds thresholds set by the member states. Similarly, the purchases of firms that are VAT-exempt because of their small size are subject to the destination principle once they exceed thresholds set by the member state into which they import. By contrast, for cross-border shopping up to what are deemed, according to member states' guidelines, reasonable amounts for personal use, the origin principle applies. The continued existence of widely divergent VAT rates across member states suggests that concerns about revenue losses due to cross-border shopping are limited. Finally, for purchases of digital content, at this point there seems to be no solution for imposing the destination principle except for sales to registered traders. Within the European Union, the origin principle is applied to such sales, which provides vendors of digital content with an incentive to locate in the country with the lowest VAT.

* McLure (2002) analyses in greater depth some of the issues discussed in this box. Bird and Gendron (2001) provide an overview of experiences with the VAT in federal countries, including issues arising in the context of separate VATs at the federal and sub-national levels.

Some states have in the process centralised the property taxes designated for school districts. For example, California not only increased foundation aid in response to a court decision that its school finances were unconstitutional, but it also introduced limits on school districts' revenues. Initially, each district's revenue limit was based on the sum of its property tax revenue and state aid in 1972-73. In subsequent years, the revenue limits of low-spending districts were allowed to increase faster than the limits of high-spending districts. In another case, in 1994 voters in Michigan adopted a proposal that replaced a substantial portion of local property taxes by an increase in the state sales tax and a state-wide property tax for education combined with a formula that equalised funding among school districts. In each case, local governments essentially lost control over school finances, even though they continued to contribute through property taxes. The evidence suggests that court-ordered school finance reform has substantially reduced within-state inequality in spending per pupil, although this has been sometimes achieved by reducing spending in the wealthier districts (by "levelling down") rather than by raising spending in the poorest districts ("levelling up") (Hoxby, 2001). However, this reduction in *within-state* inequality has only a limited impact on overall inequality given that about two-thirds of total inequality in spending per pupil among school districts nationwide is due to inequality *between* states (Murray *et al.*, 1998). The second development substantially reducing local fiscal autonomy was the widespread adoption, by state legislatures or through referenda, of tax and expenditure limitations for local governments in the aftermath of the "tax revolts" of the late 1970s and early 1980s. These limitations, which will be discussed in the following section, reflect the problem that the property tax, which in the literature is often considered to be the best local tax because of the link between property ownership and locally provided services, is at the same time highly unpopular because of its visibility and the difficulty to administer it in a horizontally equitable fashion (Bird, 1993).

Federal deductibility

Before turning to fiscal rules, one link between the federal and sub-national level affecting taxes in general deserves mention, namely the deductibility of state and local taxes from federal taxable income. Historically, federal tax law has allowed taxpayers who itemise their deductions to deduct state and local property, income and general sales taxes on their personal income tax returns. The federal tax reform of 1986 disallowed state sales deductions, but continued those for other state and local taxes. The deductibility of general sales taxes was re-instated for two years in 2004, with the restriction that taxpayers must choose whether to itemise their state income or sales tax. The deductibility of state and local taxes is a major tax expense at the federal level; deductibility of state and local personal income taxes reduced federal revenues in 2004 by about $45 billion (0.4% of GDP), and deductibility of property taxes reduced them by $20 billion (0.2% of GDP). The Administration's proposal in 1985 for the tax reform recommended the complete abolition of deductibility. Apart from affecting taxpayers directly by reducing the progressivity of the federal income tax, deductibility reduces the marginal cost of additional revenues from deductible sources, which can potentially affect state and local government behaviour in three ways.[24] By reducing taxpayers' combined federal and sub-national tax liability, it could induce state and local governments to set higher tax rates than they otherwise would; it could induce them to shift their tax structure in favour of deductible sources; and, by reducing the effective price of state and local expenditures, it could induce these

governments to increase them. The strength of these effects depends on the marginal federal income tax rate and hence on the level of (average) income in a jurisdiction.[25] The empirical evidence on these effects based on cross-sections of local governments is mixed but on balance suggests that sub-national governments' responses to changes in the tax price are modest.[26] Nonetheless, even though the induced distortions of state and local fiscal choices do not appear to be large, there is no compelling argument for continuing to subsidise sub-national expenditures in this manner, whereas there is a strong case for broadening the base of the federal income tax, as argued in Chapter 2.

Summary

The personal income tax has in the past been the states' most reliable tax source in that its base has been growing in line with expenditures. Moreover, the tax base does not seem overly mobile, as evidenced by the persistent differentials in income tax rates across states, although mobility probably limits the degree of progressivity; nor is the tax exported to any significant extent. Both of these are desirable properties in a federal context. The state corporate income tax, by contrast, suffers from high mobility of the tax base, which has led to a highly distorting use of this tax as a development tool. While its yield is shrinking, its administrative and compliance burdens are high. It constitutes a case of non-benefits taxation of a mobile unit, which should be avoided. The sales tax scores reasonably well on the two criteria mentioned above; in particular, the extent of cross-border shopping appears limited, suggesting only moderate mobility of the base, but concerns about remote sales are more acute. Its main drawback is the inability to clearly distinguish between sales to businesses and those to final consumers. In consequence, bases are undesirably narrow, and yet cascading is probably pervasive. A feasible and efficient replacement for both the corporate income tax and the sales tax would be the VAT. Finally, the property tax, which in the spirit of the benefits principle is often regarded as the ideal local tax, is costly to administer in a horizontally equitable fashion due to difficulties involved in valuing properties, and has therefore sparked strong resistance. This has forced local governments to rely more heavily on grants from their state governments and has weakened their fiscal autonomy.

Fiscal rules and macroeconomic stabilisation

Fiscal discipline at the sub-national level is an important concern in any decentralised public sector. Excessive deficits by state and local governments can adversely affect other constituencies if they lead to bailouts or other fiscal transfers by higher levels of government. Both bailouts and transfers soften sub-national governments' budget constraint and may lead to inefficient resource allocations by those governments.[27] At the same time, designing fiscal rules that do not excessively weaken state and local governments' autonomy and that leave them with an adequate capacity for macroeconomic stabilisation is a challenging task. This section reviews the two main kinds of fiscal rules in operation at the state and local level, balanced budget requirements and tax and expenditure limitations.

Balanced-budget requirements

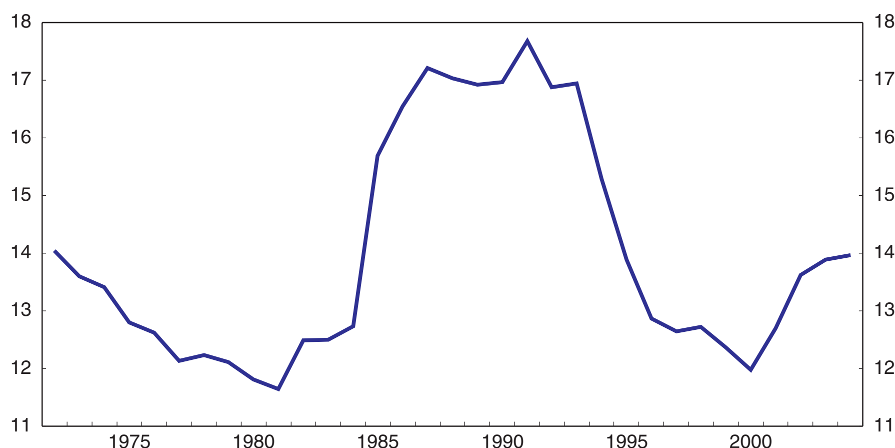
All states except one have some kind of constitutional or statutory balanced-budget requirement (BBR).[28] State governments practice fund accounting, which means that all revenues are designated to a particular fund and every expenditure item is paid for by a

particular fund. A state budget may, for example, consist of a general fund, a capital fund, an insurance trust fund, a public employee retirement fund and a budget stabilisation or "rainy day" fund. The general fund, sometimes also referred to as the operating budget, receives most tax and fee collections and interest income. It finances expenditures such as wages and salaries, aid to local governments, health and welfare benefits and other current expenditures. By contrast, state capital funds finance expenditures such as highways and buildings and are largely financed by debt as well as state motor fuel taxes. Most federal grants are earmarked and therefore do not finance general fund spending. More generally, the extent to which states create earmarked trust funds outside of the general fund with dedicated revenue streams varies considerably. While BBRs apply in almost all states to the general fund, in many states they apply to other funds as well. However, capital fund spending is often determined by long-term contracts and can be financed by debt. By contrast, general fund expenditures are mostly appropriated each fiscal year. The focus of "balancing the budget" therefore tends to be on the general fund, even though it is usually responsible for only about half of total state expenditures.

The precise nature of the requirements varies considerably across states. BBRs are either directly approved by voters and thus part of the state's constitution, or by a state's legislature, in which case they are statutory. The weakest requirement, currently in force in 45 states, is that the government must submit a balanced budget to the state legislature. A stronger requirement, in place in 41 states, is that the legislature has to pass a balanced budget. Thirty-one states require that the governor sign only a balanced budget, and 43 states assign the power of a line-item veto to the governor, granting the governor flexibility to negotiate with the legislature without vetoing the entire budget. The most stringent aspect of BBRs concerns whether the budget has to be balanced only at the time of enactment, or whether it has to be balanced at the *end* of the fiscal year or (in states with bi-annual accounting) biennium. Thirty-eight states have a prohibition against carrying a deficit forward into the next fiscal year. To achieve *ex post* balance, revisions to the budget during the course of the fiscal year are frequently necessary. The legislature and the governor can jointly revise the budget at any time, but many state legislatures are not in session throughout the year. Therefore, many state constitutions allow governors or special commissions to revise budgets after they have been enacted to bring expenditures in line with revenues. The prohibition against carrying forward a deficit is enforced by restrictions on the issuance of general obligation state debt. Unlike at the federal level, issues of general obligation debt require at least the approval of the state legislature, and in many states voter approval. Such debt issues are extremely rare, with California's $15 billion bond issue, approved by voters in March 2004, the most recent example. Nonetheless, debt issuance by state and local governments, even if for purposes other than general obligations, is quantitatively important, and the increase in debt outstanding over the recent period of economic weakness suggests that the BBRs do not completely prevent sub-national governments from using debt finance in times of severe budget shortfalls (Figure 3.8).

The effectiveness of BBRs, and the important role of budget stabilisation funds, is illustrated by the actions taken by states during their recent fiscal crisis that started in state fiscal year (SFY) 2002.[29] State general fund revenues (including transfers from budget stabilisation funds) declined from $495 billion in SFY 2001 to $464 billion in SFY 2002. Faced with such a dramatic revenue shortfall, states had several options for balancing their budgets: increasing revenues (either by raising tax rates or user fees or by broadening tax

Figure 3.8. **State and local government gross credit market debt**
Per cent of GDP



Source: Board of Governors of the Federal Reserve System, Flow of Funds Accounts.

bases), reducing expenditures, drawing down reserves accumulated in the general or budget stabilisation fund, borrowing against surpluses in other budget funds, and securitising future revenues such as tobacco settlement monies.[30] States employed all of these options, but to varying degrees. One notable feature concerns the timing of actions: because revenue increases take time to enact and to implement, initially states relied heavily on their accumulated reserves, which fell from a peak of nearly $50 billion, or 10.4% of state general fund expenditures in SFY 2000, to $18 billion, or 3.7%, in SFY 2002. By contrast, legislated state revenue reductions, which had averaged $5 billion per year from 1997 to 2000, continued in SFY 2001 at the same pace, and only by SFY 2003 did revenue changes add $8 billion to general fund revenues. Even then, revenue increases were rarely broad-based tax rate increases for the main taxes (personal and corporate income and sales taxes), and more often increases in alcohol and tobacco taxes or in fees, notably tuition fees for higher education (Holahan *et al.*, 2004). States also employed a number of "one-off" measures such as borrowing from other trust funds. Yet most of the adjustment to the collapse in revenues came in the form of expenditure reductions, with general fund expenditures declining from $506 billion in SFY 2001 to $488 billion in 2002 before returning to their 2001 level in SFY 2003. While initially these reductions focused on reduced support for higher education and for aid to localities, later they shifted to reductions in state workforces and their salaries as well as to cuts in health spending out of own sources (in part by using the Medicaid maximisation strategies discussed in Box 3.1).[31]

The impression, based on the experience during the recent downturn, that BBRs force states to adjust policies so as to keep general fund revenues and spending in balance is confirmed by econometric analysis. Using budget data from a panel of 47 states for the period 1970 to 1991, Bohn and Inman (1996) find that states with BBRs requiring *ex post* balance have on average significantly higher general fund surpluses than states with weaker BBRs. Consistent with the recent experience, they find that these surpluses are mainly accumulated through cuts in spending, not through tax increases. While BBRs thus contribute towards achieving their stated goals, the evidence suggests that they do so by

inducing undesirably strong pro-cyclical fluctuations in core expenditure areas. While state spending on primary and secondary education was largely unaffected in recent years, states had to substantially reduce higher education spending and would have had to cut health spending considerably more had it not been for a temporary increase in the federal matching rate for Medicaid in 2003 as well as the states' aggressive use of the questionable Medicaid maximisation strategies discussed earlier. To avoid volatility in core spending in the future, states should therefore regard 10% of general fund expenditures as a lower bound for the reserves they should aim to rebuild and maintain during expansions. By contrast, 35 states currently have policies in place that cap their rainy day funds at 10% or less of general fund expenditure, with these policies appearing to have restrained the growth of these funds during the 1990s (Zahradnik, 2005). In some states the accumulation of adequate reserves is furthermore hampered by some form of the tax and expenditure limitations discussed next. Expanding the size of reserves would be even more important if state governments were to take on increased responsibility for cyclically sensitive spending such as Medicaid, as would be the case under proposals to turn Medicaid into a block grant.

Tax and expenditure limitations

While BBRs effectively restrain sub-national governments' ability to finance general obligation spending by debt, they have no direct effect on the size of the budget. Limiting the size or the growth rate of revenues or expenditures is the objective of tax and expenditure limitations (TELs). TELs are imposed by states, either constitutionally through referenda or by state legislatures themselves. They were initially introduced in the 1880s as a restraint on local governments at a time when a number of states granted "home rule" to their local governments and imposed upper limits on property tax rates. The latest wave of TELs that started in the late 1970s (the so-called "tax revolts") differed from earlier ones in that the TELs imposed limitations on *state* budgets as well as those of their local governments, and that they went beyond limitations on property taxes and instead placed limits on the growth rates of state and local governments' general fund revenues or expenditures.[32] By 1982, TELs on state budgets had been enacted in 17 states, and by 2001 this number had risen to 31. Like BBRs, TELs vary considerably in their stringency. In many states, the growth rate of expenditures or revenues is limited to that of state personal income. Only few states go further and mandate that expenditures or revenues may grow no faster than the state's population growth and inflation combined, thus holding per capita expenditures or revenues constant in real terms (see Box 3.3 for the discussion of Colorado's TEL as an example). As with other fiscal rules, some TELs contain loopholes, such as allowing state governments to devolve functions to local governments without adjusting the size of the expenditure limit. Finally, some states' TELs require governments to immediately return to taxpayers any surplus revenues. In general, TELs passed by voter initiatives tend to be more stringent than those enacted by legislative vote (New, 2001).

There is some evidence that the effectiveness of TELs in reducing the rate of growth of state and local budgets depends on the details of their formulation. In particular, TELs that limit growth of expenditures to population growth plus inflation, or that require states to immediately refund any revenues in excess of allowed expenditures, appear to reduce per capita state and local government spending significantly (New, 2001). Thus, as in the case of BBRs, stronger formulations of TELs appear more effective in achieving their stated goal. However, in the case of TELs there is no economic foundation for the stated goal, implying

Box 3.3. **Fiscal rules in Colorado: TABOR**

Arguably the most stringent set of fiscal rules at the sub-national level is that currently in operation in the state of Colorado. In 1992, its voters approved the Taxpayer's Bill of Rights (TABOR), a constitutional amendment designed to restrain the growth in state and local government revenues and expenditures. Like many other TELs, TABOR combines restrictions on revenue collections and on spending growth. Specifically, state government revenues are not allowed to grow faster than the sum of the growth rates of the regional consumer price index and state population, and local government revenues cannot grow faster than inflation and the value of net new construction (inflation and school enrolment in the case of school district government). Revenues collected in excess of these limits must be returned to the taxpayers in the following fiscal year by any reasonable means, unless voters approve of the government keeping or spending these revenues. Any new taxes, tax rate increases, assessment ratio increases, extensions of expiring taxes or any tax policy change leading to a revenue gain require voter approval. TABOR also locked into place a 1991 state statute that limited growth in state general fund appropriations to 6% over the prior year's appropriations. Since this limit is based on the prior year's actual, as opposed to allowed, appropriations, any shortfall in appropriations below the allowed level (for example during times of revenue shortfalls) effectively reduces spending for all future years (the "rachet effect"). Under TABOR, this statute and similar ones at the local level cannot be weakened without voter approval.

A recent study (Bell Policy Center, 2003) compared Colorado's experience to that of 10 peer states with similar economic characteristics but different TELs and found that TABOR indeed seemed to restrain the growth in government spending relative to its peers. Moreover, during the course of the decade Colorado's tax burden, defined as total tax collections as a share of state personal income, declined in comparison to others, with Colorado now ranking 43rd as compared to 28th in 1989. Beginning in 1997, state revenues exceeded limitations, leading to cumulative tax refunds over the period 1997 to 2001 of $3.2 billion. However, the limit on revenue growth has also had several undesirable side effects (James and Wallis, 2004). There is evidence that not all programmes have been equally impacted by TABOR because in some areas, for example in Medicaid and in corrections, the state legislature's ability to control the growth rate of spending is limited. Programmes in areas where the legislature has greater control, notably higher education, have therefore been disproportionately cut. In recognition of this fact, in 2000 voters passed a constitutional amendment creating a mandate for education funding, essentially exempting education spending from TABOR. This means that TABOR's limitations fall on a shrinking set of programmes.

TABOR was adopted at the beginning of a decade during which Colorado was among the fastest growing states in the nation. It was only during the fiscal crisis beginning in mid-2001 that the rachet effect of TABOR's rules became visible. General fund revenues in Colorado declined between SFY 2001 and SFY 2002 by 13%, more than twice the average decline across states of 6%. Spending was held nearly constant because, although Colorado does not have a budget stabilisation fund, it was able to draw down reserves held in the general fund. The difference compared to other states became evident in SFY 2003, at a time when other states had turned to tax and fee increases in order to rebuild their revenues. While all states' general fund revenues combined rose by 8%, Colorado's declined by another 3% as the state was unable to respond with tax policy changes. Also, whereas all states general fund expenditures combined were at about the same level in SFY 2003 as two years earlier, Colorado's remained 11% below their 2001 level, and preliminary figures for SFY 2004 indicate a further decline in Colorado's general fund spending.

a greater risk of harmful outcomes. One objection is that there is no clear rationale why government spending per capita should remain constant in real terms, and therefore decline as a share of income as long as real per capita income is growing. In fact, insofar as government provides services for which demand is rising over certain income ranges, such as education, an argument can be made that, at least within those ranges, government spending per capita ought to be increasing with income. Moreover, a simple formula such as "population growth plus inflation" does not take appropriate account of demographic changes, such as an increase in the share of school-age children or the elderly who demand more government-provided services, nor does it take account of the fact that prices in many areas of government spending, notably health, are rising faster than the price index to which the formula is tied (Bradley *et al.*, 2005). Another major weakness with any limitation formulated in terms of growth rates is that such rules induce rachet effects, by which declines below the allowable growth rate of revenues or expenditures during periods of fiscal stress imply that revenues or expenditures shift permanently to a lower path. Finally, TELs have greatly emasculated the fiscal autonomy of local governments and may therefore be leading to a more centralised public sector that is less responsive to local preferences (Bish, 2002). A reformulation of TELs that replaces formulae such as "population growth plus inflation" by rules based on careful analysis of the determinants of desired government spending, that avoid rachet effects and respects local autonomy is likely to improve welfare.

While state and local governments issue general obligation debt only infrequently, they are more regularly issuing debt for funding capital spending, oftentimes secured by earmarked revenue streams. There is some evidence that the stringency of fiscal rules affects the interest rates that governments have to pay on their debt and that therefore market discipline reinforces the discipline imposed on governments by constitutional or statutory limitations. Using data on state government bond yields over the period 1973 to 1996, Poterba and Rueben (1997) find that more stringent BBRs reduce yields by 10 to 15 basis points and that limits on issuing debt reduce yields by about half as much.[33] Interestingly, TELs have opposite effects on yields depending on whether the restriction is on expenditures or on revenues. Expenditure limitations reduce yields by about 6 to 7 basis points, whereas binding revenue limitations *raise* yields by about three times as much. This latter finding might reflect a perception that states with revenue limits are more likely to turn to issuing debt in times of financial distress, whereas other states would more likely raise revenues.

Summary

Efficient resource allocations by governments require that policymakers fully internalise all benefits and costs of their own decisions. The concern in a federal system is that bailouts by, or transfers from, higher levels of government soften the budget constraints of state or local governments and lead to cost shifting by these governments and hence inefficient decisions. The BBRs discussed in this section can be interpreted as a rational response of state electorates to a situation in which the federal government has credibly established its unwillingness to bail out defaulting states. By contrast, the TELs are not concerned with state and local government solvency but are probably motivated by agency problems whereby voters try to impose constraints on elected or appointed bureaucrats that are otherwise feared to act against the voters' interest. An important question that needs to be addressed is whether these TELs can be improved upon in the

Box 3.4. Recommendations regarding fiscal relations

The allocation of spending responsibilities

The greater devolution of welfare programme design to the states together with the shift from a matching to a block grant has proven remarkably successful in reducing caseloads. Early fears about a race to the bottom appear to have been unfounded, suggesting that, where states have the fiscal capacity, programme devolution in exchange for greater sharing of financial risk by the states can lead to superior outcomes.

- Tendencies to restrict states' ability to tailor programmes to their local needs by tightening work requirements in ways that prove impractical for states to implement should be resisted or reversed.
- Given that a nation-wide highway network has been established, responsibility for highway funding should be turned over to the states, together with the right to charge tolls, and the federal highway trust fund should be dissolved.
- The costs imposed on the states by the No Child Left Behind Act need to be more precisely quantified, and adequate federal funding of those costs ensured.
- However, in some areas, notably Medicaid, the rate of expenditure growth may be such that states would not be able to assume greater responsibility for financing than they already have in view of their limited ability to raise revenues. A shift of all expenditures for the elderly and disabled beneficiaries from Medicaid to Medicare should be considered, as it would concentrate responses to the nation-wide challenge of ageing at the federal level, while Medicaid would be largely re-focussed on the working poor.

Promoting the efficiency of public funding

States' autonomy in taxation underpins their independence in making choices about expenditures. Despite pronounced differences in per capita income across states, there has never been strong political support for revenue sharing or other forms of fiscal equalisation. However, the fiscal autonomy of the states is constrained by taxpayer mobility, which limits the progressivity of the personal income tax and has undermined the corporate income tax, and by states' inability to collect use taxes on remote sales. Moreover, local tax autonomy has been eroded by tax and expenditure limitations.

- States' efforts to co-ordinate sales tax policies through the adoption of joint definitions and rules of tax administration should be continued, and, assuming successful implementation of the Streamlined Sales and Use Tax Agreement, Congress should authorise states to require remote vendors to collect use tax on their behalf.
- Given the high administrative costs of the corporate income tax and the continuing erosion of its base, as well as the inherent inefficiencies of the sales tax, states should consider replacing both taxes by a VAT. The experience with the Streamlined Sales Tax Project to achieve greater uniformity of sales tax bases and administration might prove helpful in structuring a VAT based on the destination principle.
- The deductibility of state and local taxes from federal income tax should be abolished, as it raises the inefficiency of the federal income tax due to base narrowing, while at the same time it appears to distort state and local governments' financing and spending decisions.

Fiscal rules and macroeconomic stabilisation

States' balanced budget requirements appear to have been effective in avoiding defaults and bailouts of sub-national governments; so has financial market discipline. However, the experience during the most recent budget crisis has shown that rainy-day funds were insufficient to avoid welfare-reducing cuts in core expenditures. This issue is gaining in importance as state spending shifts further towards health and education. The strictest forms of state and local tax and expenditure limitations lead to unintended distortions in expenditure shares and are in need of fundamental reform.

- In light of recent experience, states should quantify, and accumulate, rainy-day funds of sufficient size to avoid welfare-reducing cuts in core expenditures except under exceptional circumstances. Those states that have statutory caps on rainy-day funds should adjust them if necessary.
- Tax and expenditure limitations should be formulated with reference to desired spending levels, not to growth rates of revenues or expenditures, so as to account for changes in demand for public services due to demographic developments and to avoid ratchet effects in the aftermath of recessions.

sense that state and local governments can be constrained in a manner that leads to more desirable tax and expenditure decisions than are feasible under the current constraints.

Concluding remarks

The exceptionally large extent of state fiscal autonomy enshrined in the US Constitution has produced several beneficial results. In a country as economically and demographically diverse as the United States, fiscal decentralisation has allowed state and local governments to tailor public services in a number of areas to their voters' preferences. The fact that redistribution across jurisdictions is weak implies that there is a strong link between the size of state and local government budgets and the community's tax burden, which strengthens the accountability of sub-national governments and reduces incentives for exporting the cost of budget expansions to other jurisdictions. With that said, federal matching rates for some earmarked grants appear excessively high, thereby reducing the tax price paid by state and local governments for certain expenditures below what would be optimal. While state and local governments have substantial capacity for taxation, some of their tax bases have been eroding. Addressing these problems requires extraordinary coordination efforts among states in order to overcome free-rider problems. More fundamental reforms to state tax systems should be envisaged. Finally, the fiscal rules in place have effectively disciplined state and local fiscal policies and have mostly avoided bankruptcies or bailouts by higher levels of government, but some rules appear to lack an economic rationale and should be modified so as to allow state budgets to reflect the developing needs and preferences of their constituents. Some recommendations in each of these areas are set out in Box 3.4.

Notes

1. Two excellent surveys of issues related to fiscal decentralisation, mostly in the US context, are Bird (1993) and Oates (1999). Joumard and Kongsrud (2003) provides a comprehensive discussion of these issues in OECD countries.
2. Even where grants are earmarked, however, their economic incidence could be equivalent to that of revenue-sharing. This would happen if the grant were to replace spending that the jurisdiction would have otherwise done out of its own funds. There is some evidence that this is the case for federal highway funding and Title I education spending, discussed later in the chapter (Knight, 2002; Gordon, 2004).
3. Total receipts and expenditures include government investment in fixed capital and related items such as capital transfers. The national accounts do not report the receipts and expenditures of the state and local government level separately.
4. The data shown in Figures 3.2 and 3.3 for the state and local sectors separately are based on the US Bureau of the Census' annual survey of state and local governments. The period 2002-03 is the latest for which data are available. While the data on tax revenues are similar to those in the NIPAs, other data are less consistent across the two sources, so that, even after netting out transfers between state and local governments, the aggregate from the Census data is larger than its NIPA counterpart.
5. Brueckner (1982) uses the theoretical result that aggregate property value in a community that levies a property tax is an inverted U-shaped function of its public goods output. Public goods provision in the community is therefore Pareto-efficient if aggregate property value is insensitive to a marginal change in public goods output. Using data on aggregate property values and community education and non-education expenditures from a sample of 54 Massachusetts communities, he finds no systematic tendency for over- or under-provision of public goods. Gramlich and Rubinfeld (1982) use data from a survey of 2001 households in the state of Michigan on their demands for public spending, sampled randomly immediately after Michigan's 1978 tax-limitation vote. They find evidence for the Tiebout hypothesis that households sort themselves

according to their demand for public spending, as well as for the median-voter hypothesis, that public spending in jurisdictions reflect the desires of the median voter.

6. A detailed description of the provisions of the Personal Responsibility and Work Opportunity Reconciliation Act of 1996 can be found in House Ways and Means Committee (2004), Section 7.
7. Another important policy measure that strengthened work incentives was the dramatic expansion of the federal Earned Income Tax Credit (EITC) in 1993. The interaction between the EITC and welfare reform is discussed in Moffitt (2003).
8. Wheaton (2000) uses state-level data on benefit levels under AFDC, median household income, total population, population eligible for AFDC and several other variables to estimate migration elasticities. He concludes that his estimates are high enough that they would generate considerable welfare under-provision in model simulations. By contrast, Gelbach (2004) uses household-level data from the 1980 and 1990 decennial census to estimate probit models of out-migration of single mothers. While the results for the 1980 census data suggest that welfare benefit levels play a substantial role in state-to-state migration decisions, the results for the 1990 sample are much less clear. Using these results combined with a simple model of optimal state welfare policy determination, he finds only small reductions in optimal benefits due to migration.
9. For a general discussion of health policy in the context of federalism in the United States see Bovbjerg *et al.* (2003).
10. See Bruen and Holahan (2003) for details on the definition of dual eligibles, services covered by Medicaid, and simulations of several options for shifting part of Medicaid's expenses for dual eligibles entirely to the federal level.
11. Several reform options for the federal system of health care coverage are discussed in Weil *et al.* (2003). Issues and policy approaches related specifically to long-term care are discussed in Congressional Budget Office (2004).
12. In contrast to Medicaid, the federal contribution to the State Children's Health Insurance Program (SCHIP) is capped. However, many of the factors driving Medicaid expenditures, notably those associated with the aged and disabled populations, do not affect SCHIP, making its expenditures more predictable and controllable.
13. The current legislation, the Transportation Equity Act for the 21st Century, was enacted in 1998. Initially, it authorised funding through the end of FY 2003. Since then it has been extended several times, most recently in September 2004 for funding through May 2005. Re-authorisation legislation has been stalled in Congress for some time. An overview of federal-aid highway financing is provided in Federal Highway Administration (1999).
14. Hanushek (2002) surveys a broad range of issues related to publicly funded primary and secondary education, including issues of financing.
15. While publicly available information about NCLB's accountability requirements is limited, a detailed survey of states' accountability plans can be found in Erpenbach *et al.* (2003).
16. This section draws in many parts on Snell (2004b). For a survey of issues in the design of tax policy in federal countries see Inman and Rubinfeld (1996).
17. This count follows the Census Bureau practice of treating the Michigan single business tax as an income tax but not the Texas franchise tax of 4.5% of earned surplus.
18. The available data indicate that more than 7 500 jurisdictions levy a sales tax. However, as of 1994, state and local tax bases were virtually identical within each of the then 29 states that administered the tax for local governments. Even in the states that allow local administration, local governments tend to follow the broad outlines of the state tax bases (Congressional Budget Office, 2003).
19. See McLure (2002) for a discussion of alternative reform proposals for the state sales taxes. In regard to e-commerce, in October 1998 Congress passed the Internet Tax Freedom Act (IFTA), which imposed a three-year moratorium on existing taxes for Internet access and prohibited "multiple and discriminatory" taxes on e-commerce but not generally applicable taxes. These provisions have been extended several times, most recently until October 2007 by the Internet Tax Nondiscrimination Act of December 2004.
20. This paragraph draws on Congressional Budget Office (2003). Further information about SSTP is available at *www.streamlinedsalestax.org*.

21. Differences in tax rates among states can lead to distortions in economic behaviour and deadweight losses whether the origin or the destination principle is used. If the origin principle were used, businesses and consumers would have an incentive to incur additional shipment costs by purchasing inputs or consumption goods in low-tax jurisdictions. If the destination principle were used, tax differentials could affect location decisions of businesses and households. Moreover, an invoice-credit VAT would raise the same questions of possible transfer price manipulations within multi-state firms that arise nowadays in an international context.
22. In the landmark case Serrano v. Priest, the California State Supreme Court ruled in 1971 that school districts' reliance on property tax finance violated the 14th amendment of the US constitution that requires equal treatment of individuals under the law. While the US Supreme Court ultimately ruled in 1973 that the state funding formula did not violate the federal constitution, subsequent decisions in the Serrano case and similar ones in a majority of states were argued on the grounds that the method of funding violated either equal protection clauses or education clauses of individual state constitutions. As of 1996, the supreme courts in 43 states had heard cases on the constitutionality of school finance systems. Systems were overturned in 16 cases and upheld in 20, with cases pending in the remaining seven (Murray *et al.*, 1998).
23. Under a foundation plan, the state sets a foundation level which equals what it views as the cost per pupil of the minimum acceptable level. It then sets a minimum uniform property tax rate and offers each district a per-pupil grant equal to the difference between the foundation level and the tax revenue the district would raise if it set the minimum tax rate. A foundation plan is therefore designed to fill the gap between need measured by the foundation level and the district's ability to fund education.
24. Based on a sample of 38 000 federal income tax returns in 1982, Feenberg and Rosen (1986) estimated that deductibility of state and local personal income taxes reduced the average federal tax rate from 15.4% to 14.1%.
25. Whose income is relevant for the strength of the effect depends on the maintained hypothesis about political decision-making. In the median-voter model it is the median voter's income, while in the bureaucratic choice, dominant party model used, for example, in the analyses referred to in the text, it is the average community income.
26. Inman (1985) finds that jurisdictions' choice of tax instruments is unresponsive to the tax price. By contrast, Holtz-Eakin and Rosen (1988, 1990) report a significant negative elasticity. Courant and Gramlich's (1990) analysis of the effects of the 1986 federal tax reform on state and local fiscal behaviour supports the view that governments' responses to changes in the tax price are negligible.
27. See Inman (2003) for an analysis of the determinants and consequences of bailouts of sub-national governments as well as a survey of the historical experience in the United States.
28. General information on BBRs can be found in Snell (2004a). Details about each state's BBR are compiled in National Association of State Budget Officers (2002).
29. The aggregate state fiscal variables reported in this paragraph are taken from various issues of the semi-annual *Fiscal Survey of States* published by the National Association of State Budget Officers. Almost all states' fiscal years run from July to June.
30. Another source of flexibility in the operating budget is adjustment in the "cash capital" account. Many localities fund a portion of their capital expenditures in the operating budget. These expenditures can be moved to the capital budget, and hence debt financed, if the operating budget comes under pressure.
31. The local sector was on the whole much less affected by the economic downturn, as property tax revenues increased in response to the strong housing market (Figure 3.6).
32. For a recent overview of state and local TELs see Mullins and Wallin (2004). The most recent comprehensive source on local government TELs is Advisory Commission on Intergovernmental Relations (1995). Since ACIR's discontinuation in 1996, information on local government finance has become sparse.
33. Because states do not regularly issue general obligation debt, and because some issues are not actively traded, the data used by Poterba and Rueben, and by many other studies on this subject, are from the Chubb Insurance Company's semi-annual "Relative Value Survey". This survey asks 20 to 25 bond traders at major brokerage houses that deal in tax-exempt bonds to estimate the current yields on general obligation bonds from 40 states. Survey participants are asked to evaluate "hypothetical" general obligation bonds with maturity of 20 years, so reported differences

in yields should only be attributable to the perceived riskiness of the state's general obligation debt and should not reflect differences in call provisions or other factors.

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Chapter 4

Coping with the inevitable adjustment in the current account

In recent years the US current account deficit has grown to the point that most observers consider its level to be already unsustainable. Yet it seems set to continue to increase in the foreseeable future, with net foreign debt likely to surge. This chapter describes the present deficit from three points of view: imbalances of imports over exports of goods, services and income; of inflows over outflows of capital; and of investment and spending over savings and income in the domestic economy. It then examines the possible causal factors for these disequilibria and goes on to describe the arguments for both optimistic and pessimistic views as to their unwinding over time. Last, it suggests a number of policy conclusions as to how the US authorities should factor the presence of the deficit into their decision-making, even though they rightly do not view it as a target outcome. The bottom line is that the importance of avoiding disincentives to save and of maintaining as much flexibility as possible in the economy is reinforced by the risks posed by the deficit.

Introduction

Despite the fact that the United States is by no means a youthful nation, which might call for substantial investment in infrastructure and other capital that typically enables the development process to get underway and thereby justifies large external deficits,[1] its balance of payments on current account has shown a strong negative trend over the past quarter century and is widely believed to be on an unsustainable trajectory. If it were not the world's largest economy and did not enjoy the privilege of being able to borrow in its own currency,[2] since the US dollar is the world's primary reserve currency (accounting for nearly two-thirds of global reserves), it is likely that this trend would not have been sustained and that market forces would have acted so as to restrain the shortfall before it got as large as it is. It is therefore difficult to know how and to what extent this peculiarity will continue to allow it to escape the disruptive adjustment that may well have befallen another country in a similar situation of rising foreign indebtedness.[3] History provides little guidance as to how such a dominant-currency nation might emerge from this problem, either, in the limit, unscathed or, alternatively, having lost that status:[4] none of the dollar's predecessors lost their positions because of chronic peacetime deficits. Moreover, with a floating exchange rate and an unrestricted capital account, there is a valid *prima facie* case that US policymakers should not take any action solely to try to rein in the US deficit. The temptation is therefore strong to neglect it entirely and just leave it to the workings of the market to get the job done, especially as many of the possible scenarios that would lead to its correction would entail political, economic and financial pain not only at home, but just as seriously in the rest of the world (as US demand is curbed): see the Appendix to the General Assessment of the Economic Situation in OECD *Economic Outlook* of May 2005 (No. 77).

But neglect would be inappropriate. Even though no policy actions are called for solely to reduce the size of the deficit, the onus is on the US authorities to avoid any compounding of the problem by their own budgetary decisions and to ensure that none of their domestic economic policies distort private decision-makers' choices between investing at home or abroad and, more importantly, between saving and spending. To the extent that there is a deep-seated problem of deficient saving, whose short-term cost is being masked by the availability of foreign savings on reasonable terms, that does not imply there will be no burden at any horizon: financial inflows allow capital to be put in place in any case, but the claims on it will be held abroad and the resulting income flows will accrue to foreign residents. Fortunately, the United States has arguably the OECD's most flexible economy, for when the external adjustment – however uncertain the timing and whatever the effect on the dollar – finally takes place, the impact on the production side of the economy will be a shift of capital and labour resources from the non-tradable to the tradable sector.[5] The ease with which such an adjustment can be made will to a large extent determine the transition costs of the adjustment. The inescapable conclusion is that the importance of maintaining that flexibility will be especially acute at that point in time.

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This chapter first reviews the historical development of the current account balance and its stock counterpart, the net international investment position. A trade, capital flow and saving/investment perspective will successively be taken. It will then enumerate the various arguments that have been advanced in the burgeoning literature on this issue for optimistic and pessimistic assessments of the likely unwinding of the deficit. Various scenarios will be briefly described. Thereafter the chapter will turn to the implications for policies, first for the budget and monetary settings and later for microeconomic policies, and then draw some conclusions.

How did the US trade deficit get so big?

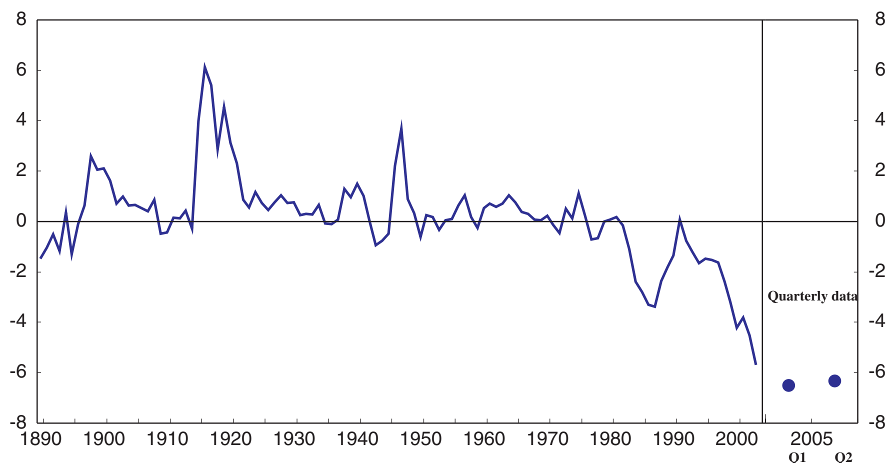
The fact that the United States is running a current account deficit that the OECD projected in its most recent *Economic Outlook 77* to be $800 billion this year is unprecedented in a number of dimensions (Summers, 2004). *First*, no other country has ever been able to finance/sustain a deficit on anywhere near such a scale; it represents over $2 billion a day. Even allowing for the fact that the US economy is enormous, the US deficit nonetheless represents more than 1½ per cent of global GDP and nearly 6½ per cent of US GDP, a figure which itself is larger than any other in the OECD except Iceland, Portugal and Hungary. The result is that the United States is attracting some 10 per cent of the entire world's saving and 75% of that not invested at home (equivalently, three-quarters of the total of all the world's current account surpluses) (Roubini and Setser, 2005; Obstfeld and Rogoff, 2005).[6] *Second*, even in its infancy when it was absorbing mass immigration and installing plenty of infrastructure, the United States never recorded a deficit of more than 4% of GDP, and, prior to the early 1980s, its history was one of at least a century of outcomes close to balance or moderate surplus (Figure 4.1). The result was that at that point the nation had substantial net foreign assets, officially estimated at around 10% of US GDP. Even at the trough in 1987 the deficit never exceeded 3½ per cent of GDP.

A trade perspective

However, already in the early 1980s various signs pointed to potential problems on the horizon; in particular, it seemed as though there was a strong tendency for the

Figure 4.1. **The current balance is still declining**

Per cent of GDP

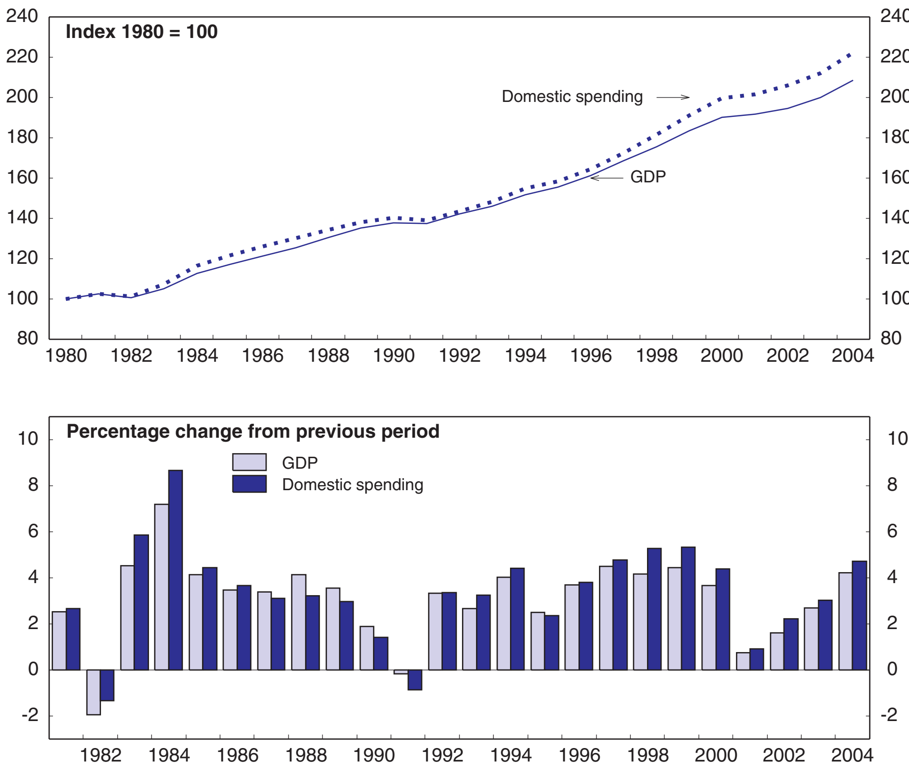


Source: Bureau of Economic Analysis.

United States to demand more imports (at least of goods) at the margin, as its economy expanded, than its trading partners were interested in purchasing in the way of additional US exports (the so-called Houthakker-Magee effect described in Hooper *et al.* 2000).[7] Once US output growth began to match those rates recorded by its trading partners in the 1980s (with the first LDC debt crisis and the end of the post-war recovery in Europe), US domestic spending increases began chronically to outpace GDP growth (Figure 4.2),[8] drawing in imports. Nonetheless, the dollar surged, and the US current account quickly deteriorated, reaching a peak deficit of 3.4% of GDP in 1987. That process was reversed by a sharp fall in the dollar in the second half of the decade, which served to enhance the price competitiveness of US exports and import-competing production.[9] Combined with the payments resulting from the Gulf War in 1991, the current account balance even managed to return to a tiny surplus that year.

Since then, however, the story has been one of uninterrupted decline in the balance. With the end of the brief phase of depreciation in the effective rate of the dollar in 1988, along with faster growth than in the OECD at least, if not than in the rest of the world, beginning in 1992, the Houthakker-Magee effect took over again, even if the underlying asymmetry in income elasticities seems to have shrunk beginning in the 1990s (Taylor, 2004; Chinn, 2005). The US share of world imports of goods and services rose from 14.3% in 1991 to 18.8% at the business-cycle peak in 2000, while its export share was roughly flat; when weighted by export markets and taken in volume terms, US exporters

Figure 4.2. **Real growth of domestic spending and GDP**



Source: OECD Analytical database.

gained market shares until around 1997-98 and have lost them steadily since then. The balance on current account blew out (despite a trend improvement in the services balance until around 1996, and a sustained albeit shrinking surplus on the income account), reaching $416 billion or 4.2% of GDP by 2000 (Table 4.1). At the same time there was an unprecedented rise in private expenditure relative to disposable income and a corresponding deterioration in the private-sector balance (Godley and Izurieta, 2004), associated in part with the wealth effects resulting from the stock market boom.

It was widely expected that once the long-awaited recession hit, the dollar would depreciate, and, along with the income effect on demand for imports, the balance would adjust sufficiently to regain a sustainable position. However, the US recession of 2001 was mild and, in particular, shallower than in many other OECD countries, and the dollar continued to appreciate in effective terms until early in 2002. Even the following depreciation was not large enough to offset the combination of the income effect from the real growth advantage of the United States,[10] the effects of the series of substantial tax cuts, a surge in the energy import bill in line with the run-up in global oil and natural gas

Table 4.1. **The balance of payments: a historical perspective**

$ billions

	1960	1970	1980	1990	2000	2001	2002	2003	2004	2005 H1
A. Current account										
Exports										
Goods	19.7	42.5	224.3	387.4	772.0	718.7	682.4	713.4	807.5	874.8
Services	6.3	14.2	47.6	147.8	299.5	288.4	294.9	309.1	343.9	372.7
Income receipts	4.6	11.7	72.6	171.7	350.9	288.3	270.8	309.8	379.5	440.6
Imports										
Goods	14.8	39.9	249.8	498.4	1 224.4	1 145.9	1 164.7	1 260.7	1 472.9	1 621.3
Services	7.7	14.5	41.5	117.7	225.3	224.0	233.7	256.7	296.1	318.9
Income payments	1.2	5.5	42.5	143.2	329.9	263.1	260.8	263.5	349.1	440.2
Unilateral current transfers, net	–4.1	–6.2	–8.3	–26.7	–58.8	–51.9	–64.0	–71.2	–80.9	–96.3
Balance on:										
Goods	4.9	2.6	–25.5	–111.0	–452.4	–427.2	–482.3	–547.3	–665.4	–746.5
Services	–1.4	–0.3	6.1	30.0	74.1	64.5	61.1	52.5	47.8	53.8
Goods and services	3.5	2.3	–19.4	–80.9	–378.3	–362.7	–421.2	–494.8	–617.6	–692.8
Income	3.4	6.2	30.1	28.6	21.1	25.2	10.0	46.3	30.4	0.4
Current account	2.8	2.3	2.3	–79.0	–416.0	–389.5	–475.2	–519.7	–668.1	–788.6
Share of GDP (%)	0.5	0.2	0.1	–1.4	–4.2	–3.8	–4.5	–4.7	–5.7	–6.4
B. Financial account[1]										
US-owned assets abroad, net	–4.1	–8.5	–85.8	–81.2	–560.5	–382.6	–294.0	–328.4	–855.5	–664.6
Official reserve assets, net	2.1	3.3	–7.0	–2.2	–0.3	–4.9	–3.7	1.5	2.8	9.1
Other government assets, net	–1.1	–1.6	–5.2	2.3	–0.9	–0.5	0.3	0.5	1.2	9.5
Private assets, net	–5.1	–10.2	–73.7	–81.4	–559.3	–377.2	–290.7	–330.5	–859.5	–683.2
Direct investment	–2.9	–7.6	–19.2	–37.2	–159.2	–142.3	–154.5	–140.6	–252.0	–121.2
Foreign securities	–0.7	–1.1	–3.6	–28.8	–127.9	–90.6	–48.6	–156.1	–102.4	–149.4
Foreign-owned assets in the										
United States, net	2.3	6.4	62.6	141.6	1 046.9	782.9	794.3	889.0	1 440.1	1 273.0
Official assets, net	1.5	6.9	15.5	33.9	42.8	28.1	115.9	278.3	394.7	215.2
US Treasury securities	0.7	9.4	11.9	30.2	–5.2	33.7	60.5	184.9	272.6	74.1
Other foreign assets, net	0.8	–0.6	47.1	107.7	1 004.1	754.8	678.4	610.8	1 045.4	1 057.8
Direct investment	0.3	1.5	16.9	48.5	321.3	167.0	80.8	67.1	106.8	105.3
US Treasury securities	–0.4	0.1	2.6	–2.5	–70.0	–14.4	100.4	104.4	107.0	161.6
Other US securities	0.3	2.2	5.5	1.6	459.9	393.9	283.3	226.3	369.8	390.6

1. Positive figures imply inflows.

Source: Bureau of Economic Analysis.

prices and an increasing trend for foreign producers and US wholesalers to engage in "pricing to market" whereby the effects of depreciation are mitigated by the absorption of cost increases in their margins.[11] Thus, the US consumer has to a considerable extent been shielded from the usual trade adjustment following the recent depreciation (with the implication that sufficient expenditure-switching to bring about a sustainable current account deficit is going to require a larger depreciation, all else equal). The result was only the briefest of respites in the march towards higher US deficits in 2001. Since then, the merchandise deficit has continued to grow almost inexorably; the non-factor services surplus has been edging down; the income balance has been fairly flat, though positive until this year's second quarter, despite the large and growing net foreign indebtedness;[12] and the final component, the current transfers deficit, has been inching higher. The result is that the overall current account has been moving very much in line with the merchandise balance (and the balance on goods and services). In the first half of 2005, before the effects of the hurricanes, it already reached $789 billion at an annual rate (6.4% of GDP). Meanwhile, the need to finance those chronic trade deficits has pushed net foreign debt to around $2½ trillion or 22% of GDP in 2004 (Table 4.2) (and more than 200% of export

Table 4.2. **Net international investment position of the United States**

$ billions, year-end values

	1976	1982	1990	1995	2000	2001	2002	2003	2004
US-owned assets abroad									
With direct investment at:									
Current cost	457.0	1 108.4	2 179.0	3 486.3	6 238.8	6 308.7	6 645.7	7 641.0	9 052.8
Market values	n.a.	961.0	2 294.1	3 964.6	7 401.2	6 930.5	6 807.8	8 296.6	9 972.8
US official reserve assets	44.1	143.4	174.7	176.1	128.4	130.0	158.6	183.6	189.6
Other US government assets	45.0	76.9	84.3	85.1	85.2	85.7	85.3	84.8	83.6
Direct investment abroad									
Current cost	222.3	374.1	616.7	885.5	1 531.6	1 693.1	1 860.4	2 062.6	2 367.4
Market values	n.a.	226.6	731.8	1 363.8	2 694.0	2 314.9	2 022.6	2 718.2	3 287.4
Bonds	34.7	56.6	144.7	413.3	572.7	557.1	705.2	874.4	916.7
Stocks	9.5	17.4	197.6	790.6	1 852.8	1 612.7	1 374.7	2 079.4	2 520.1
Foreign-owned assets in the United States									
With direct investment at:									
Current cost	292.1	779.5	2 424.3	3 944.7	7 620.0	8 228.1	8 752.9	9 797.7	11 537.0
Market values	n.a.	725.1	2 458.6	4 270.4	8 982.2	9 269.9	9 263.0	10 669.0	12 515.0
Foreign official assets in the									
United States	104.4	189.1	373.3	682.9	1 030.7	1 109.1	1 251.0	1 567.1	1 982.0
US government securities	72.6	132.6	291.2	507.5	756.2	847.0	970.4	1 192.2	1 499.6
US Treasury securities	70.6	124.9	285.9	490.0	639.8	720.1	812.0	990.4	1 260.5
Direct investment in the United States									
Current cost	47.5	184.8	505.3	680.1	1 421.0	1 518.5	1 517.4	1 585.9	1 708.9
Market values	n.a.	103.4	539.6	1 005.7	2 783.2	2 560.3	2 027.4	2 457.2	2 686.9
Other US Treasury securities	7.0	25.8	152.5	327.0	381.6	375.1	473.5	543.2	639.7
Bonds	12.0	16.7	238.9	459.1	1 068.6	1 343.1	1 531.0	1 707.9	2 059.3
Stocks	42.9	76.3	221.7	510.8	1 554.4	1 478.3	1 248.1	1 700.9	1 928.5
Currency	11.8	31.3	85.9	169.5	256.0	279.8	301.3	317.9	332.7
Net international investment position									
With direct investment at:									
Current cost	164.8	329.0	–245.3	–458.5	–1 381.2	–1 919.4	–2 107.3	–2 156.7	–2 484.2
Share of GDP (%)	9.0	10.1	–4.2	–6.2	–14.1	–19.0	–20.1	–19.6	–21.2
Market values	n.a.	235.9	–164.5	–305.8	–1 581.0	–2 339.4	–2 455.1	–2 372.4	–2 542.2
Share of GDP (%)	n.a.	7.2	–2.8	–4.1	–16.1	–23.1	–23.4	–21.6	–21.7

Source: Bureau of Economic Analysis.

Table 4.3. **Net foreign asset positions of OECD countries**

Per cent of GDP

	1990[1]	2000[1]	2003[1]	2003[2]
Australia	–47.4	–65.2	–59.1	–74
Austria				–22
Belgium				34
Canada	–38.0	–30.6	–20.6	–21
Denmark		–21.5	–13.0	–20
Finland	–29.2	–58.2	–35.9	–28
France				4
Germany				8
Greece				–60
Iceland	–48.2	–55.5	–66.0	–82
Italy				–10
Japan				37
Netherlands				–15
New Zealand	–88.7	–120.8	–131.0	–90
Norway				45
Portugal				–64
Spain				–45
Sweden	–26.6	–36.7	–26.5	0
Switzerland				145
United Kingdom				–6
United States				
Direct investment at current cost	–4.2	–14.1	–19.6	–19.6
Direct investment at market prices	–2.8	–16.1	–21.6	–21.6

1. All figures from Edwards (2005a).
2. All figures estimated from Lane and Milesi-Ferretti (2005a).

Source: S. Edwards (2005), "Is the US Current Account Deficit Sustainable? And If Not, How Costly is Adjustment Likely To Be?", draft paper prepared for the Spring 2005 meeting of the Brookings Panel on Economic Activity, 16 March, Table 5 and OECD estimates based on P.R. Lane and G.M. Milesi-Ferretti (2005), "Financial Globalization and Exchange Rates", IMF Working Paper WP/05/3, January, Figure 1.

revenue from goods and services), nearing the previous all-time high of 26% set in 1894 (Obstfeld and Rogoff, 2005). This has been limited in recent years by favourable valuation changes (averaging $480 billion per year in 2002-2004), attributable not only to exchange rate changes – a 10% depreciation of the dollar represents a transfer of nearly 6% of US GDP from the rest of the world, nearly a year's worth of the recent shortfall on current account (Gourinchas and Rey, 2005b) – but also to capital gains and losses on the underlying assets. With the strengthening of the dollar in 2005, net indebtedness will suffer from revaluation effects that could in and of themselves, all else equal, worsen the net international investment position by around $200 billion (Shin, 2005). Although the United States is not yet even close to being the largest debtor relative to GDP among OECD countries (Table 4.3), it may soon be on a path to catch up with the leaders. The implication is that a higher share of GDP will have to be paid to foreigners in the form of investment income, shaving the real incomes of US residents.

A capital flow point of view

While the current account is a trade-related measure, in the view of most observers it is not trade-related factors[13] that explain either the level of or the worsening in the balance; instead, it is the fundamental forces of perceived prospects for productivity gains[14] and rates of return that jointly determine domestic and foreign incomes, asset

prices, interest and exchange rates and thereby simultaneously the balances on current and capital transactions as well (Bernanke, 2005). Currently, foreigners wish to buy more US assets than US residents want to invest abroad, raising the value of the dollar to a point where the balance of trade is in sizeable deficit. On the other side of the balance of payments (what is now called the "financial account"), both capital inflows and outflows have grown enormously over time,[15] with the exception of the recessionary period earlier in the current decade, as have the corresponding stocks. US gross foreign assets of around 85% of GDP are surpassed by gross foreign liabilities of 107% of GDP. It was only in 2003 that US residents once again began to increase the amount of their investments abroad, with most of the gain in the form of liquid, presumably low-risk funds passing through banks. On the other hand, just as US residents' demand for foreign goods and services has surged, foreigners' demand for US assets has skyrocketed since 1990.[16] Some argue that the enormous growth in global portfolios has been far more important than their rebalancing towards US assets (Ventura, 2001). In fact, the share of US liabilities in the portfolio of the rest of the world has trended up since 1980, and especially in the second half of the 1990s (when it reached one-third), but it has since fallen back quite sharply (Lane and Milesi-Ferretti, 2005b). The increased demand for US assets has come from foreign central banks (see below) as well as private investors. A great deal of it took the form of direct investment and portfolio investment in equities prior to the bursting of the stock market bubble; more recently it has been attracted more by the United States as a safe haven: inflows have been concentrated on debt securities, especially those issued by the US Treasury – nearly $380 billion worth in 2004, enough to fund over 90% of last year's federal government deficit (on a national accounts basis). The result is that the share of US federal government debt held by foreigners has doubled in less than a decade to 48%, and even higher figures apply if the base is restricted to marketable Treasury debt (Higgins and Klitgaard, 2004; Wu, 2005).[17] Nonetheless, US government securities represented only 17% of total US assets held by foreigners (by market value) in 2004, up from 13% in 2000, but down from 19% in 1992 and even 24% in 1982 (Hung, 2005).

The deficit as a deficiency of national saving

As mentioned before, the current account balance is also by definition the counterpart of the difference between saving and investment, which itself can be distinguished by the various agents involved. In the US case the excess of investment over saving has not been caused by an unusually large amount of investment (except in recent years by the household sector in the form of residential housing – see below and Chapters 1 and 2). Gross domestic investment has been struggling to reach 18-20% of GDP ever since 1990, broadly similar to the OECD median of 20.5% in recent years, and there has been little sign of any long-term trend (Figure 4.3). Rather it is the lack of domestic saving that is the source of the need to borrow from abroad to finance profitable investment opportunities. Indeed, gross saving as a share of GDP has on balance declined since the early 1980s, in part because of the reduction in inflation; the decline picked up pace in the late 1990s and has become an increasing concern (Cotis *et al.*, 2004). From 1998 to 2003 the nation's overall saving rate fell by 5 percentage points, 55% of which represented additional capital inflows and a wider current account deficit and the rest a fall in net domestic investment. This was probably initially because of the combination of the favourable asymmetric technology shock and a reduced risk premium on dollar assets. Together, they raised expectations of future rates of return on investment and income growth, which attracted capital inflows –

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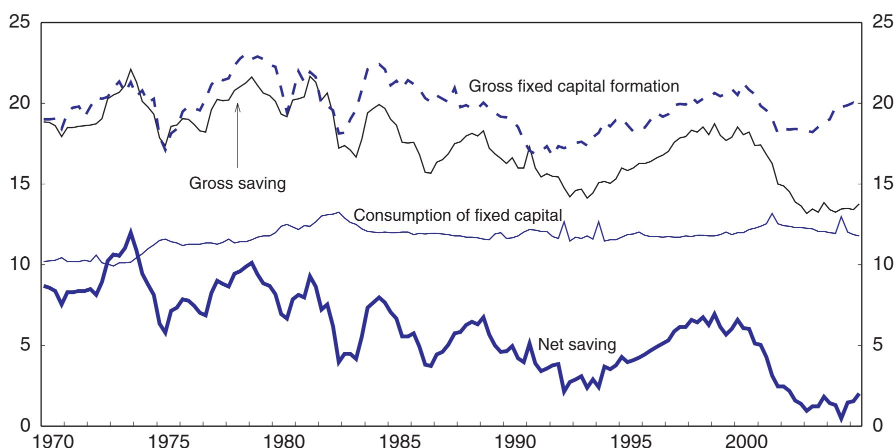
Figure 4.3. **Domestic saving and investment**

Per cent of GDP



Source: Bureau of Economic Analysis.

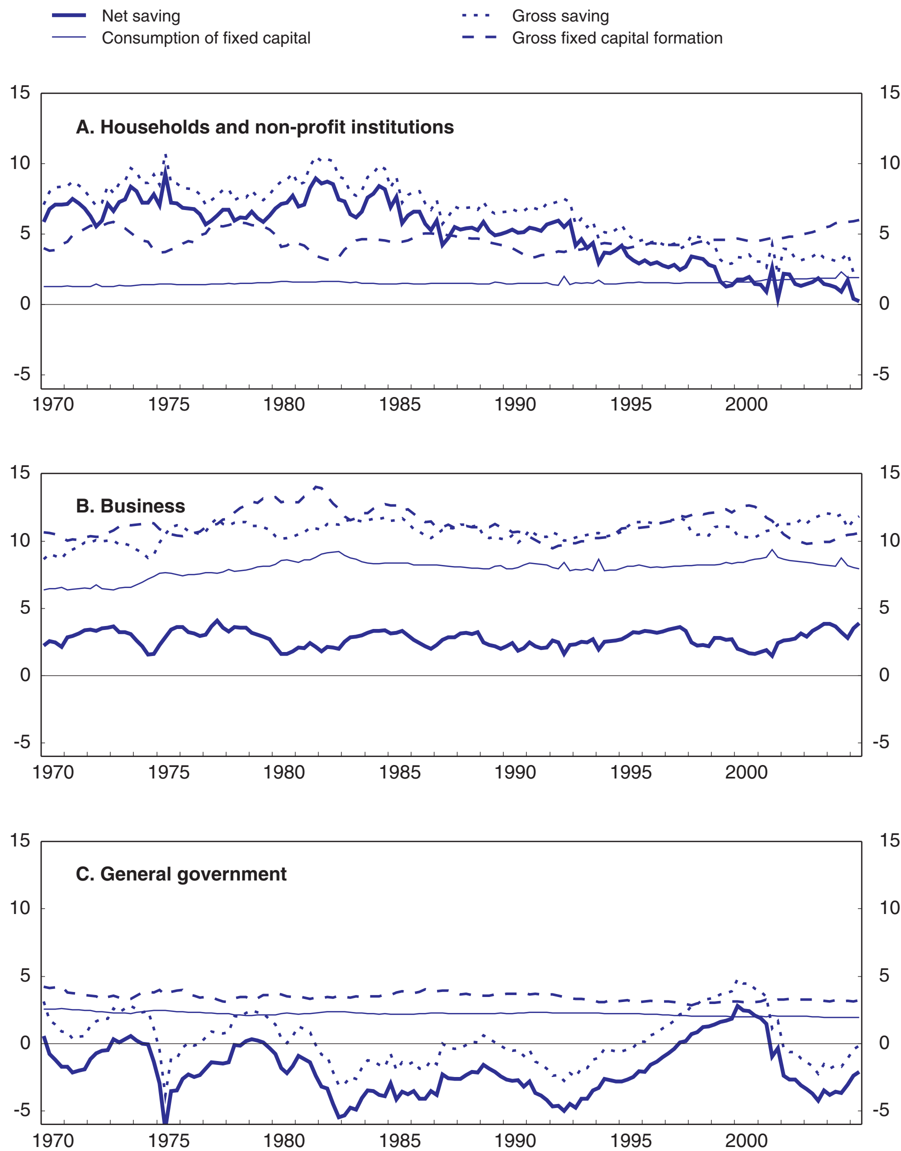
boosting the dollar and depressing the current account (Hunt and Rebucci, 2003) as well as cutting longer-term bond yields (see below) – and were capitalised in wealth gains on the stock market. More recently the dearth of saving has been the result of low interest rates and their effect on housing wealth.[18] In net terms, saving almost fell to zero briefly in early 2003 and remains extremely small by international standards: net saving in the median OECD country was 7.4% of GDP in 2003.

Looked at sectorally (Figure 4.4), it does not appear to be the enterprise sector that is responsible for this shortage, other than occasionally during cyclical downturns: a slight uptrend in business gross saving has been offset by a steady rise in depreciation. Indeed, in recent years US firms have contributed to the global glut of savings. On the other hand, government saving – which largely coincides with the balance on the federal budget as usually measured (see Chapter 2) – seems to be in a chronic but heavily pro-cyclical position, particularly in the late 1990s, when the federal finances were in extraordinarily robust form. Thus, it was during the 1980s (when private savings and investment were moving together) that it became popular to refer to the "twin deficits" as though a budget imbalance brings about an external deficit at all points in time.[19] However, the latter persisted right through the period of budget surplus, as the "new economy" shock drove investment higher and saving lower. It is now widely understood that, while the two phenomena are intrinsically related (according to the Ricardian equivalence proposition, private agents recognise to a large extent the existence of the government's budget constraint and thus vary their saving rates according to their perceptions of the need to raise taxes to sustain the likely future level of government outlays[20]), their inter-relationship is by no means one for one. Some experts have argued that the rise in the federal deficit has crowded out mainly private domestic spending, rather than net exports (Ferguson, 2005). They would attribute no more than one percentage point of GDP of the increase in the current account deficit to the deterioration in the structural budget deficit.

Hence the most fundamental source of low and falling domestic saving is the household sector whose saving rate has been dropping in both net and gross terms since the early 1980s. While the rate of decline in its saving has diminished since the turn of the

Figure 4.4. **Saving and investment by sector**

Per cent of GDP



Source: Bureau of Economic Analysis.

millennium (and there is a systematic tendency for the rate to be revised up – see Gramlich, 2005), that limited form of improvement has been more than offset at the aggregate level by the turnaround in government finances. The persistence of large current account deficits raises sustainability questions: the risk that foreign investors could eventually require some combination of higher US expected returns (requiring lower US asset prices), higher US interest rates and a weaker dollar for them to be willing to continue to acquire the flow of claims on US assets, much less hold the outstanding stock. Some observers have suggested that there exists a "credibility range" within which a country may be able to violate its stability conditions for either the budget and/or the

current account deficit without large effects on asset prices (Gramlich, 2004; Truman, 2005), but that when the deficits are expanding the range may narrow and raise the risk of a crisis. Indeed, in a recent paper Clarida *et al.* (2005) have demonstrated that there exist estimatable thresholds for most G7 countries beyond which current account adjustment occurs; their estimate for the United States is –4.2% of net output (which corresponds to –2.75% of GDP), but the US speed of adjustment is much slower than for the others.

The risks of what might be needed to restore sustainability

Baseline projections of what would happen to the external accounts in the coming years absent any change in the dollar vary significantly, but most show a rapid widening of the deficit.[21] Among the most extreme prognostications are Mann (2004), who projects that the current account deficit on present trends would hit 13% of GDP in 2010, and Roubini and Setser (2004), who have it reaching 14% of GDP (including a deficit on investment income account of around 5% of GDP) and the net international investment position (NIIP) hitting 107% of GDP in 2015. There are five main reasons for thinking that the US deficit will worsen steadily – and that therefore the current configuration of exchange rates and other features of the economy are not sustainable[22] (see Box 4.1) – unless the dollar

Box 4.1. **The sustainable level of the current account deficit**

The stability condition for the external deficit is identical to that for the budget deficit: the equilibrium ratio of foreign debt to GDP is equal to the primary (or goods, services and transfers) deficit-to-GDP ratio multiplied by the ratio of one plus the nominal growth rate of GDP to the difference between the nominal growth rate of GDP and the nominal interest rate). In the US case, since the GDP growth rate exceeds the interest rate, the condition is satisfied with a primary deficit of moderate proportions. However, the latest primary deficit of some 6½ per cent of GDP would entail a plateauing of the debt/GDP ratio at well beyond 100% of GDP.

Assuming that nominal GDP is likely to rise about 5% per year, a number of scenarios that would satisfy the sustainability criterion are possible. *First*, the deficit would have to fall to below 1¼ per cent of GDP for the peak level of indebtedness to stay at the recent level of 22% of GDP. *Second*, if the current account deficit were not to adjust at all in relation to GDP from its latest (first-quarter 2005) outcome of 6.4%, then the NIIP would eventually reach 128% of GDP, a level that has virtually never been seen before for any developed country. With so much foreign debt and thus a large negative income balance the goods and services balance would have to shrink to around 1¼ per cent of GDP. Thus, substantial trade balance adjustment would eventually be required even if the current account remains where it is now. *Third*, there are various intermediate possibilities. For example, the current deficit could stabilise at some recent value, say $500 billion (Cooper, 2004), in which case it would shrink as a share of GDP to around 2¼ per cent and the NIIP would rise to 46% of GDP. Alternatively, following Mann's portfolio balance approach that assumes that net claims on the United States as a share of global wealth must stabilise, Truman (2005) argues that the current deficit would need to come down to some 3% of GDP and NIIP around 60% of GDP. Finally, if the goods and services balance were to be zero, then NIIP would be indeterminate; an assumption of 50% of GDP would yield something on the order of a current deficit of 2¾ per cent of GDP. To get there in a decade would require export growth to exceed import growth by 4 to 4½ percentage points per year.

weakens. *First*, with imports nearly half again as large as exports, the dollar value of the balance will grow unless export growth exceeds import growth by the same fraction. *Second*, even though the significance of the Houthakker-Magee asymmetry may be waning because of shifting country and commodity composition of trade (Mann and Pluck, 2005), it is still present nonetheless: at similar growth rates to its trading partners US exports just do not rise as quickly as US imports. In addition, US growth rates have often exceeded those recorded by the rest of the world, at least on a trade-weighted basis. *Third*, the investment income balance is most likely going to deteriorate significantly over time, in view of the spread of returns between those earned by US residents on their investments and the average yield on foreign investments in the United States. This was still 1.0 percentage point in 2004, pegging the possible shortfall in that category at current levels of indebtedness at more than a percentage point of GDP. *Fourth*, there is some evidence that demographic factors are at work in explaining some of the pattern of current account balances both over time and across countries (Lührmann, 2003; Domeij and Flodén, 2004), and for the United States the comparatively slow speed of ageing is expected by some authors to have a fairly sharp negative effect on the current account over the next couple of decades.[23] *Finally*, macro-econometric model simulations show that most scenarios designed to achieve a substantial improvement in the balance entail second-round effects that tend to offset the initial, helpful shock (Brook *et al.*, 2004): for example, dollar depreciation raises costs and prices, cutting competitiveness, eating away at the improvement in the trade balance. The more debatable proposition is that the situation cannot be defused without some sort of abrupt reversal/crisis; a number of observers refuse to dismiss this possibility (see, for example, Roubini and Setser, 2005; Mann, 2004; and Wolf, 2004), given that it is widely accepted that the risk of such a *dénouement* increases the greater is foreign indebtedness (see, for example, Edwards, 2005b).[24]

The lessons from the growing literature on crises are that they tend to occur after the external adjustment process gets underway, rather than as a trigger (which could be a housing market decline, for example) and that the largest real depreciations in developed economies have occurred when growth is rising (Croke *et al.*, 2005). Many authors conclude nonetheless that the eventual external adjustment will be accompanied by a significant reduction in growth, at least temporarily, (*e.g.* Edwards, 2005a and b; Adalet and Eichengreen, 2005), led by a reduced rate of increase in domestic demand.[25] Models have been developed based on continuing falls in home bias abroad that show that the increased demand for US assets leads to an overshooting of the sustainable level of the deficit with quite an abrupt reversal.[26]

Whatever the adjustment path – smooth or disorderly – it is widely agreed that adjustment will entail some degree of dollar depreciation. Most observers have tried one approach or another to estimate how big a depreciation might be required (Table 4.4). Outcomes range from a modest decline to as much as 90%. The range of estimates, even by the same authors, points to the substantial uncertainties related to, for example, the sustainable current account deficit and NIIP, the appropriate model and its parameterisation. But Obstfeld and Rogoff (2004) argue that the magnitude of currency depreciation is not the right question. Dollar depreciation will equilibrate the external imbalance through changing the terms of trade between US and non-US goods and services. They find that this is only half as important as adjustment by substituting tradables for non-tradables in the United States (and conversely abroad), which has to result from differential saving and productivity shocks, which themselves will bring about

Table 4.4. **Dollar depreciation and the US current account deficit**

Study/Authors	Deficit/debt outcome[1]	Dollar outcome
Obstfeld and Rogoff (2000)	NIIP: –20%	Real: –16%
	CA: zero	Nominal: –12%
O'Neill and Hatzius (2002)	CA: –2%	Real: –43%
Wren-Lewis (2004)	CA: –2%	Yen/dollar: 88
		Dollar/euro: 1.18
Brook *et al.* (2004)	CA: improves by 1.3-1.4% of GDP	Nominal: –22.5%
	CA: improves by 2.5%of GDP	Nominal: –15% (plus 300 basis point rise
		in short rates and fiscal tightening of 4.2%of GDP)
Bénassy-Quéré *et al.* (2004)	None	Yen undervalued: 14.3-22.1%
		Euro undervalued: 1.2-7.6%
Mussa (2004)	NIIP: –40 to –50%	Real: –20%
	CA: –2%	
O'Neill and Hatzius (2004)	CA: –3%	Real: –21.6 to –23.6%
	CA: –2%	Real: –32 to –34.1%
	CA: zero	Real: –53 to –55%
Obstfeld and Rogoff (2004)	CA: zero	Real: –14.7 to –33.6%
Mann (2004)	CA: –10%	Real: –20% plus –10% yearly
Roubini and Setser (2004)	NIIP: –55%	Nominal: –50%
	CA: –43%	(fiscal deficit also gradually eliminated)
Blanchard *et al.* (2005)	CA: zero	Real: –40 to –90%
Truman (2005)	CA: –3.2%	Real: –28%
Obstfeld and Rogoff (2005)	n.a.	Real: –33.3%
Gourinchas and Rey (2005b)	CA: zero	Nominal: –13 to –18% yearly for 5 years

1. In per cent of GDP. CA = current account balance; NIIP = net international investment position (net debt).

Source: S. Edwards (2005), "Is the US Current Account Deficit Sustainable? And If Not, How Costly is Adjustment Likely To Be?", draft paper prepared for the Spring 2005 meeting of the Brookings Panel on Economic Activity, 16 March, Table 6 and OECD.

a dollar depreciation as a by-product. Depreciation alone is not enough to both deal with the current account problem and keep the economy at full employment: the extra net exports must be crowded in by expenditure-reducing/savings-increasing policies as well. This is where the need for budget deficit reduction comes in (see below).[27]

No matter what the sustainable level of the current account is, the deficit on goods and services will have to go well below that share of GDP because of the likely deficits on transfers and income accounts. As described above, the latter has thus far remained in rough balance. The financial costs of the deteriorating net international investment position have been successively delayed by the gap in returns between US assets and liabilities and the revaluation effects of depreciation in 2002-03 as well as differences in underlying capital gains.[28] However, with the dollar's renewed strength thus far in 2005 and, the widening interest spread in favour of the United States, the presumption must be strong that the investment income balance will move rapidly into deficit by next year (Hatzius, 2005a), despite the recent performance differential favouring foreign over US equity returns. Furthermore, there is a case for believing that the worsening net foreign debt position will eventually raise the risk premium on the dollar (Al-Eyd *et al.*, 2005); yet thus far there is no evidence of any such premium. In any case it is a depressive factor for the steady-state equilibrium exchange rate because of the need to earn more on exports of goods and non-factor services so as to make the interest payments on the debt (Blanchard *et al.*, 2005).

Another aspect of the recent situation that is disturbing to many observers is the structure of capital flows to and from the United States in recent years. *First*, the fact that there have once again been net outflows on direct investment (since 2002) and portfolio equity (since 2003) accounts has added to the financing need on the other accounts (*i.e.* borrowing) – together these summed to $1 192 billion in 2004. It also sits somewhat uneasily with the claim that expected risk-adjusted returns are greater than those available abroad. *Second*, foreign central banks are responsible for such a large share of recent capital inflows.[29] While there is some uncertainty because of differences between data sources (see the Appendix to Higgins and Klitgaard, 2004), it seems that central banks financed around half of the US current account deficit in 2003 and 2004 (though substantially less thus far in 2005). These purchases have overwhelmingly taken the form of Treasury securities: effectively, such official purchases have covered nearly the entire non-cyclical component of US federal borrowing in recent years. The impact of such accumulations on US longer-term interest rates has been much debated, with estimates ranging from a few basis points to close to two percentage points (Roubini and Setser, 2005).[30] The greater the importance of this channel, the more serious are a number of concerns: for example, that the current housing market boom may already be a bubble (see Box 1.1 in Chapter 1). In any case, there are legitimate reasons to doubt that foreign central banks' willingness to increase reserves will continue at this pace for much longer (Summers, 2004). The dollar already represented 64% of global foreign exchange reserves at the end of 2003, 15 percentage points higher than at end-1992 (Chinn and Frankel, 2005).

The case for a smooth resolution of the situation

Other than the hypothesis that capital inflows will continue to meet the requirements of a growing current account deficit because the United States is such a good investment location (an idea heard less often since the stock market plunge of 2000-01), the most extreme case for the durability of the current equilibrium, however tenuous, has been made by Dooley *et al.* (2003). They argue that the current situation is not unlike the Bretton Woods system – since foreign, mainly Asian, central banks have used an export-led development strategy supported by heavy intervention to prevent their currencies from appreciating against the dollar – and accordingly dub it "Bretton Woods 2". They see the system as being intact "for the foreseeable future". Similarly, others have argued that the US line of credit with the rest of the world has no clear time frame for repayment: it is like a central bank that issues fiat money that "never" has to be repaid (McKinnon, 2001). Foreign official institutions are said to be guided by different objectives than the profit motive that drive private investors (Hung, 2005). Others have disputed this and point out that the dollar could lose its place as the leading international reserve currency if inflation and/or depreciation undermine confidence in its value or if the attractions of the euro increase (Chinn and Frankel, 2005). Others go so far as to say the current uneasy outcome will have difficulty lasting through the end of 2006 (Roubini and Setser, 2004 and 2005).[31] In effect, the official flows involved are akin to international vendor financing in the commercial market (Summers, 2004). The situation has also been called "global co-dependency" (Mann, 2004), since the United States is dependent on foreign central banks for their purchases of its liabilities (a cumulative $789 billion in the last three years), and they are dependent on the United States as the borrower and consumer of last resort (Cooper, 2001).

In any case, having its liabilities denominated in dollars gives the United States a unique advantage. Whenever it suffers a depreciation, foreign investors may well be induced to increase their acquisition of dollar assets so as to restore their portfolio share (known as the "portfolio rebalancing effect"). Furthermore, depreciation leads to asset revaluation effects: the income account improves because of earnings on US assets abroad denominated in foreign currencies and net foreign indebtedness diminishes as well.[32] Such capital gains relax the external budget constraint and have been shown to be helpful in reinforcing the trade effects of currency changes in the US case, especially at horizons out to two years (Gourinchas and Rey, 2005a).[33] But their impact is only modest: they relieve only about 13% of the exchange rate adjustment, according to one recent estimate (Obstfeld and Rogoff, 2005).

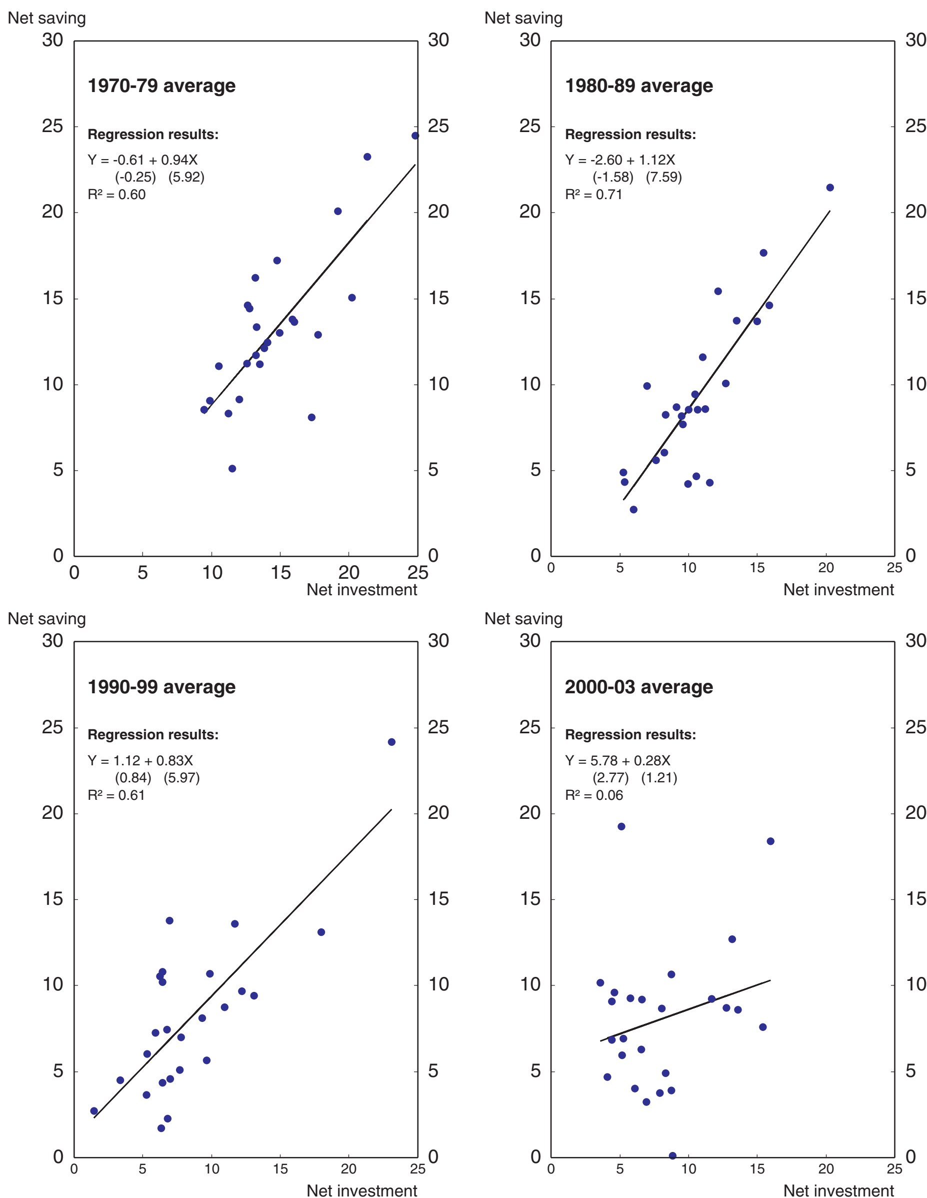
Most recently the optimistic position has been defended by the argument that the US deficit is the result of a global savings glut (Bernanke, 2005), which also helps explain low long-term bond yields world wide. Unfortunately, this rise in savings has not been seen in the United States.[34] One of the key reasons for this glut is the imminent retirement of the baby-boom generation and the consequent increase in the ratio of retirees to workers. But this does not explain fully the differential pattern of savings rate changes, since much of the additional savings has come from developing and emerging-market countries that have no such imminent demographic concerns (such as dynamic Asia).[35] Non-OECD countries' current accounts have strengthened by around $420 billion since 1997, following the series of financial crises that began in Mexico in 1994, spread to Asia in 1997-98 and most recently befell Argentina in 2001. Their governments were initially forced to adopt macroeconomic policies to adjust their trade balances and to refrain from borrowing, and eventually many, especially in Asia, chose to reduce national net leverage by building up foreign exchange reserves (even if that strategy is an expensive and incomplete way of protecting against sudden stops – see Caballero and Panageas, 2005) so as to safeguard against the repetition of such events. As mentioned above, how long that willingness to accumulate reserves will last is unclear. A third contribution has come from the recent sharp rise in oil prices: producer revenues are only gradually being recycled back to consumers in the form of increased imports. In the meantime the majority of these revenues are being saved, probably in highly liquid form, largely in dollars. Financial market expectations are that high oil prices are likely to be long-lasting, so while the demand for dollar assets might not be reversed, it will gradually fade as the savings are drawn down to finance producing-nation consumption and investment. To the extent that involves purchases of US goods and services the need for any financing disappears. However, the US share of this expanding market would probably be smaller than its share of accretions to producing nations' financial portfolios. Overall, it is arguable whether the hypothesised savings glut will persist into the medium term (Hatzius, 2005b).

Another hypothesis that would support an optimistic interpretation of the sustainability and eventual resolution of the imbalance is that improved global financial integration[36] has helped bring about a reduction in "home bias" (the tendency for investors to favour domestic over foreign investments, thereby foregoing efficient portfolio diversification) (Ferguson, 2005) other than in Japan. This is said to have facilitated the financing of current account deficits in general and the US deficit in particular[37] (as foreign investors move toward a full risk-adjusted weighting of US investments in their portfolios). Proponents claim that it will also cushion the process of their unwinding (Greenspan, 2004), something sceptics term "deceptively reassuring" (Obstfeld and

Rogoff, 2005, p. 19)[38]. Other evidence in favour of a decline in home bias besides the persistence of current account deficits is provided by the apparent fall in the cross-country correlation of national savings and investment rates (Blanchard and Giavazzi, 2002; Helliwell, 2004) (Figure 4.5). To the extent that this and other fundamental and permanent changes in the world economy lie behind the widening of the deficit, then its correction would be less likely to be disorderly and the implications for US growth and inflation more likely benign (Ferguson, 2005). But eroding home bias, along with other explanations for the size and durability of the US deficit such as global co-dependency and differential ageing, all have natural stopping points (Gramlich, 2005). There remains a long-run

Figure 4.5. **The disappearance of the Feldstein-Horioka puzzle**

Percentage of GDP



Source: OECD Annual National Accounts database.

national solvency constraint that is binding for all countries, not least the United States (Pelgrin and Schich, 2004).

The implications of the current account deficit for US policies

The appropriate lessons for macroeconomic policies

In a context of open and efficient capital markets and a freely floating exchange rate of the dollar there is no reason to take any specific policy action solely to try to bring down the external deficit. Indeed, policy action that would curb US growth in order to reduce the US deficit would damage both US outcomes and those of its trading partners. Rather, the question that needs to be posed is whether the deficit is at least in part the result of other US policy settings that themselves may be inappropriate. The key implication of the earlier discussion is that attention should focus on the dearth of saving, rather than on trying to deal directly with trade or capital flows themselves (such as, for example, through a 1970s-style import surcharge, as proposed by Godley *et al.* (2004) or passage of the proposed Foreign Debt Ceiling Act of 2005[39]). For increases in saving raise future living standards, either by financing productivity-boosting domestic investment or reducing international borrowing, thereby cutting future interest payments (Gramlich, 2005). The first place to look for higher saving is the government budget.

The role of budgetary policy in contributing to current account outcomes has long been recognised. Ever since the "twin deficits" of the 1980s observers have to varying degrees linked the two phenomena. A variant of that view sees the effect emanating more from government consumption than from the tax side (see, *e.g.* Faruquee *et al.*, 2005); in addition, it has been shown that public consumption spending on final goods and services has a far larger effect on the external balance than its outlays in the form of wages and salaries, allegedly because the former stimulates output and private investment whereas the latter has a depressive impact (Cavallo, 2005).[40] A reduction in the US federal deficit will shrink the external deficit so long as it is not completely offset by other changes in private savings and investment behaviour. However, the evidence is that most of the impact of budget deficit reduction will come through lower interest rates and expanded interest-sensitive domestic demand (and thus lower private saving): only 20-50% is the latest estimate for the effect of a rise in government consumption on the trade account over a two-to-three year horizon.[41] Yet budget consolidation does not substitute for dollar depreciation: the resulting lower interest rates will in fact help to bring about the decline in the dollar that will stimulate the extra net exports that are sought.

As to the appropriate role of the monetary authorities, Blanchard *et al.* (2005) conclude that tighter policy would be self-defeating, since by limiting depreciation in the short run it would increase it in the long run. They contend that it is a change in mix that is called for: tighter fiscal policy and looser monetary policy would assist in adjusting the current account by lowering the dollar while keeping the economy at full employment. Yet it is unclear if the need to crowd in net exports can be satisfied without overheating unless higher rates can be used to crowd out household spending. Truman (2005) controversially advocates the use of higher interest rates to slow the growth of aggregate demand relative to aggregate supply.

The Administration is aiming to cut the federal deficit in half by 2009 and also to raise private saving through educational and health savings accounts and to encourage retirement savings through private accounts as an optional partial carve-out from Social

Security (see Chapter 2).[42] It is also attempting to make tax and social security reforms that would be pro-saving. In addition, it favours elimination of the estate tax, which might help reduce the incentive to consume all one's wealth before death. Finally, it is trying to boost growth at home and abroad (through, for example, the US-Japan Economic Partnership for Growth, the US-Brazil Group for Growth, the completion of the Doha Round and the Millennium Challenge Account).

Besides cutting the federal budget deficit, the most efficient way to raise national saving and shrink the external deficit is to remove the saving biases in the tax code. The most egregious case is the deductibility of mortgage interest, which provides a strong incentive to borrow, with experience showing that half the proceeds are spent on consumption, thereby boosting the trade deficit.[43] Eliminating this deductibility would not only broaden the tax base, allowing lower tax rates with all their attendant gains in efficiency (see Chapter 2), but it would also ease the shift towards net exports in spending and towards tradable goods and services in production that will ultimately be required.

The need for adjustments in the industrial structure

One of the most confident predictions resulting from economists' knowledge of adjustment patterns to external imbalances is that the share of tradable goods and services in production has to rise for the current account to improve.[44] It is the decline in the exchange rate of the dollar that would bring about this change in industrial structure. Historically, there is some evidence that the share of such tradables in US production[45] has responded to changes in relative prices brought about by the strength of the dollar[46], perhaps even more so than in other OECD countries, especially given its more limited openness to trade. This points out to the flexibility of its economy. However, the historical experience has been largely limited to dollar appreciation on a trade-weighted basis, and the question remains whether resources will flow as flexibly and smoothly toward tradables when the dollar falls as they have tended to flow away from that sector since the early 1980s. US manufacturing companies in particular have in recent decades suffered not only from the rising exchange rate but also from onerous retiree health and pension costs (so-called "legacy costs"), a chronic lack of skilled labour, in part due to the shortcomings of the compulsory education system, and a dysfunctional corporate tax system (Bivens *et al.*, 2003).

Complementary policy changes could support a tradables renaissance, although expanded specific support for manufacturing would be wrong-headed.[47] The imminent implementation of the Medicare prescription drug benefit will ease the burden of retiree health costs. But proposed changes in pension funding rules before Congress would tighten the requirements on employers so as to avoid underfunded defined-benefit plans being transferred to the public corporation that insures such benefits (see Chapter 2). Public initiatives to upgrade production worker skills would be appropriate, because they are under-provided by employers who cannot capture the resulting economic returns (see below). The corporate tax has become even less efficient over time and is in need of overhaul, if not outright replacement (see Chapter 2). Finally, more market opening by foreign governments in response to a successful completion of the Doha round would enhance the potential for more competitive US firms to break into or expand their presence in new markets abroad. In any case any further widening in the deficit will no doubt augment the risk of pressures to implement protectionist policies bearing fruit, which itself would make unwinding the deficit without negative side-effects on the welfare

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of US residents more difficult. A prime example would be the draft legislation to impose an across-the-board tariff on all Chinese imports if China refuses to increase the flexibility of its exchange rate.

The possible role of various other structural reforms in reducing external imbalances in a broad sample of OECD countries has recently been examined in Kennedy and Sløk (2005). While some research has found that some reforms in the labour market (lower tax wedges on earned income and weaker employment protection) seem to have a favourable impact on the current account when looked at in a foreign trade perspective (but not through either the capital flow or saving/investment lenses), their empirical work on 13 OECD countries over more than two decades yielded unsatisfactory results for various labour market variables. However, reforms in product market (a reduction in FDI restrictiveness and an index of product market regulations) and in financial markets (proxied by a higher ratio of stock market valuation to GDP) both have a negative impact on the current account. Overall, there is no basis for seeking favourable side-effects on the current account from these growth-enhancing structural reforms (OECD, 2005a, Box I.4): the obvious conclusion is that the fact that the United States has already adopted most of them long ago (see below) is one of the reasons for its present external imbalance. Yet the continued implementation of such reforms elsewhere may bolster economic performance in the rest of the world and contribute to unwinding the global pattern of external imbalances.

Probably the sector that is the least tradable and the most likely to suffer from external adjustment brought about by dollar depreciation, whether accompanied by tighter monetary or budgetary policy, is housing investment (Tilton, 2005). Residential construction has been the greatest beneficiary of the overvaluation of the dollar, the low interest rate environment and the extremely generous terms on such investments offered by the personal tax code. The confluence of these supportive factors has resulted in a housing boom unmatched since the 1970s (see Chapter 1). Fortunately, *non-residential* construction would probably be stimulated by any dollar-induced adjustment, once cyclical effects wash out, since substantial capacity growth will be needed to lower the merchandise trade deficit beyond what can be achieved by shifting domestic to foreign demand for the same items and raising the utilisation of existing capacity (Tilton, 2005). This will be especially important for several types of infrastructure, most notably ports, where capacity constraints are fast becoming a problem: according to the US Chamber of Commerce, in 12 of 16 ports it recently studied capacity constraints will become a significant problem by 2010 (US Chamber of Commerce, 2003) .

A wide range of other more micro evidence supports the conclusion that a high degree of flexibility has helped the US economy shift its industrial structure more smoothly than other OECD countries (Kongsrud and Wanner, 2005).[48] Most importantly, the labour market has a number of features that indicate rapid adjustment:

- long-term unemployment rates are low;
- outflow rates out of unemployment are high;
- job tenure is low;
- internal migration is high;
- employment protection is low;

- re-employment incentives are strong (replacement rates are low and sanctions are prevalent); and
- wage setting is flexible (union density and coverage are weak).

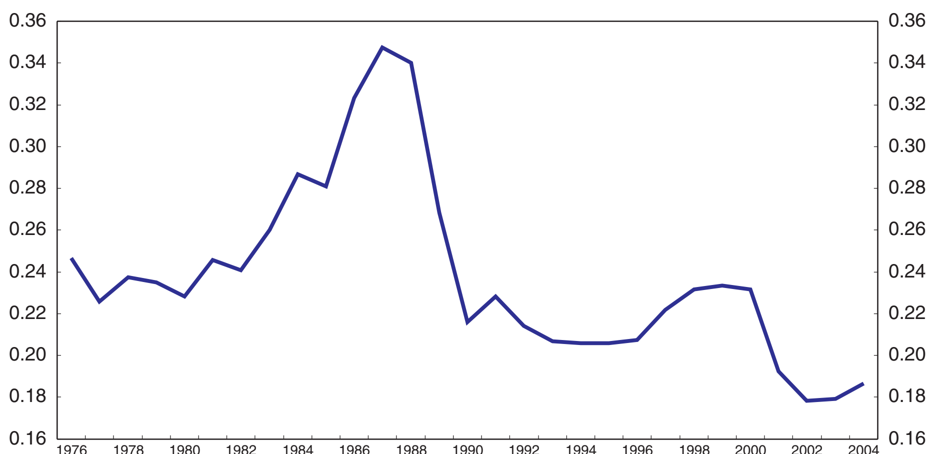
The result is that, according to Kongsrud and Wanner (2005), the United States has the best labour-market adjustment capacity in the OECD, though the cost of that flexibility is considerable insecurity for individual workers.[49] Furthermore, the ability of US labour markets to adjust to local or regional shocks seems to have increased noticeably over time, hinting that adjusting to sectoral shifts might not be as burdensome as in the past. The standard deviation of the 50 state unemployment rates has been on a clear downtrend over the past three decades. Even correcting for the fall in the aggregate unemployment rate by comparing two years with similar rates (1979 and 2002) shows a 25% decline in the standard deviation. Alternatively, using the coefficient of variation (that is, normalising by the national unemployment rate) also shows a similar-sized reduction, especially since the mid-1980s (Figure 4.6). In addition, this flexible labour market adjustment mechanism enhances the efficacy of other macroeconomic channels of adjustment (Lane and Perotti, 1998).[50]

The United States also ranks very highly in terms of a number of product market indicators, which suggests easier adjustment. For example, its use of product market regulations with a view to retaining the benefits of market competition is amongst the best in the OECD (Conway *et al.*, 2005), though it has important barriers to inward investment in some transport sectors.

However, there are a small number of areas that have important flexibility aspects where the United States does not rank highly and could definitely do better. The most important is in the sphere of education and training: the more the workforce is equipped with human capital, especially in the form of general skills, the less difficult it will be for labour to shift between sectors.[51] Whereas for people in the 45-54 age cohort the nation is ranked number one for the share that have completed at least upper secondary education, turning to the following group of 25 to 34 year-olds, it is only slightly above average,

Figure 4.6. **The dispersion of unemployment rates across the 50 states has fallen**

Coefficient of variation, annual average



Source: Bureau of Labor Statistics and OECD calculations.

implying a dwindling advantage compared to other OECD members. While the volume of employer-sponsored education and training is also above average, it is far below the Nordic leaders. Little public support for training for the unemployed is also made available, despite the fact that wage losses resulting from displacement are greater than for other countries. And comparative international results on standardised tests for 15 year-olds do not show the United States in a particularly favourable light (OECD, 2004). Indeed, further ground appears to have been lost in recent years (Table 4.5). Increasing expenditure on active labour market policies, especially those designed to assist those displaced by increasing globalisation could be helpful in raising perceptions of job security, thereby heading off political pressures for protectionism (OECD, 2005b, Chapter 1).

Table 4.5. **Results from PISA 2000 and 2003 for 15 year-olds**

	United States	Best performing country	OECD average
Mathematics/space and shape	472	553	496
PISA 2000	461	565	494
Mathematics/change and relationships	486	548	499
PISA 2000	486	536	488
Mathematics/quality	476	549	501
Mathematics/uncertainty	491	545	502
Mathematics/overall	483	544	500
PISA 2000	493	557	500
Reading	495	543	494
PISA 2000	504	534	500
Science	491	548	500
PISA 2000	499	552	500

Source: OECD (2004), *Learning for Tomorrow's World: First Results from PISA 2003*, Paris.

Another feature of US settings that might well hinder industrial restructuring is bankruptcy law. While the federal legislation has just gone through a reform this year, the changes made dealt only with chapters relevant for personal bankruptcies. The motivation was to make it more difficult for individuals to write off all their debts. However, as many as 10 to 20% of such bankruptcies might actually involve small businesses, implying an enormous undercount of business failures (Lawless and Warren, 2005). This has led some observers to express concern that less credit will be available for start-ups, since so many entrepreneurs use credit card debt to finance their ventures at the outset. But the issue here is with Chapter 11 of the bankruptcy law, which provides firms with protection from creditors while they reorganise. Though it is obviously a good thing that companies in difficulty are not forced immediately into liquidation (under Chapter 7 of the law), there is a legitimate question whether the US system is too slow, costly and generous to debtors, especially their managers. It may be biased in favour of allowing petitioners to continue to operate beyond the point when the most efficient outcome would be liquidation so that the resources they have tied up would usefully be released for other uses and industry capacity would shift (White, 1994). This conclusion is supported by the observation that few companies that file for Chapter 11 ever emerge and, of those that do, a high proportion go through another financial restructuring within a few years (Hotchkiss, 1995). Overall, only about 7% of filers ever emerge and go on to become thriving concerns (Murray, 2004). Performance is especially sub-standard in the very courts where the largest firms tend to

Box 4.2. **Summary of recommendations emanating from considering the current account deficit**

- There is no reason to seek out policies that would be aimed solely at bringing down the external deficit.
- The proper way to approach the imbalance from a macroeconomic policy point of view is to focus on ensuring that nothing is being done to discourage saving. That implies that the federal government should take whatever steps are necessary to *curb the budget deficit*, even if the benefits in terms of national saving and the current account may be modest. Such a policy is prudent in its own right (see Chapter 2).
- The well-known *anti-savings biases in the tax code should be removed*. Shifting the personal income tax further to a consumption base can also be justified by the predicted efficiency gains that would ensue. But to ensure an improvement in the government balance this should be done preferably by implementing a VAT, rather than by increasing the proliferation of savings incentives. Similarly, the tax base should be broadened to include mortgage interest payments and fringe benefits, especially health insurance premiums (see Chapter 2). The perceived government guarantee of the mortgage-backed securities issued by the large government-sponsored enterprises has also contributed to excessively low mortgage rates and undue amounts of residential investment. Making such investments less attractive should allow the nation to use its scarce capital more efficiently and facilitate the downsizing of this pre-eminent non-tradable sector.
- *The dollar should continue to be allowed to respond flexibly to market forces*. In the current context of open financial markets it will always move to accommodate differences in desired trade and capital flows and savings/investment imbalances. Ultimately, it looks likely to have to decline, but the timing of that move is not easily predictable.
- At the microeconomic level the most important consideration is to *retain the economy's outstanding degree of flexibility* so as not to encumber the inevitable shift in the industrial structure towards tradable goods and services. Increased protectionism is the number one risk to that smooth restructuring.
- Labour resources would be better equipped to handle the geographic and industrial moves if *workers were better supplied with human capital*. The United States used to be a leader in average educational attainment levels, but several other countries have passed it by in recent years, and the compulsory education system has been underperforming for some time and may be falling further behind. At a minimum the federal government needs to remove any doubts that its No Child Left Behind initiative is fully funded (see Chapter 3). But the availability of high-quality training programmes to the unemployed and especially those displaced by expanded trade should also be improved (see Chapter 5).
- Resources are probably being held for too long in existing uses by the *excessive support provided to the agriculture sector* and by *the inefficiencies of the bankruptcy law*. Chapter 11 of the bankruptcy code is slow, costly and biased against liquidation. Too few filers ultimately return to the path of success. The recent overhaul focused only on aspects thought to influence personal bankruptcies, but a large number of entrepreneurs may have been caught inadvertently and find their access to credit curtailed in the future.
- The tradable sector would benefit from a number of other measures. Obviously, exporters need to be assured that the basic infrastructure for trade will be available: *port capacity needs upgrading*, as it looks already insufficient in a number of places, and the situation is predicted to worsen. Firms also need to be able to count on expanding markets abroad; hence, *a successful completion to the Doha Round is crucial*.

file: New York and Delaware (LoPucki and Doherty, 2002). The most obvious example of a sector that has used Chapter 11 to avoid downsizing is airlines.

Several alternatives to the bargaining-based approach involved in Chapter 11 have been proposed. One is based on an auction of the company so as to separate what should be done with the assets from how to divide the firm's value (one of the inherent weaknesses of Chapter 11); another is based on options (Bebchuk, 1998). The (unsecured) debt could be converted to equity, and then the new owners could decide whether to liquidate or not (Hart, 1999). Or changes could be made to move toward the Canadian reorganisation system, since firms exiting from it are much more likely to survive than their US counterparts (Fisher and Martel, 1996). Other less-radical but beneficial reforms would include limiting the maximum time spent in Chapter 11.

Finally, while it remains a lesser offender than many other member countries, the United States does engage in substantial government support to agriculture. By holding resources within the sector it prevents them shifting to other areas where their export prospects are more promising, even without a hypothetical free trade environment. The most obvious examples are sugar and cotton.

The burden of adjusting the industrial structure is therefore likely to be less onerous than had US markets and institutions been less flexible. The more mobile are its production factors (and the longer the time they have to relocate), the smaller will be the required change in the real exchange rate (Obstfeld and Rogoff, 2005).[52] Adjustment may also be facilitated if the range of goods exported broadens (Gagnon, 2004). It is therefore incumbent on US policymakers to examine all aspects of their economic policies so as to ensure they do not encumber the process of adjustment, whenever it gets under way in earnest.

Some concluding comments

It has been argued that the US current account has almost certainly reached an unsustainable level, even though it looks set to continue to grow in the next few years. Merely arresting its upward trend will require several changes in the behaviour of both market participants and policymakers. However, no specific policies aimed solely at reining in the deficit are recommended. Rather, the government's focus should be on looking at all its policy settings with a view to ensuring there are no anti-saving biases and that nothing is limiting smooth inter-sectoral resource shifts. More detailed recommendations are given in Box 4.2.

Notes

1. In effect, the less developed the economy and thus the lower is its income per capita, the greater should be its lack capital and the higher its rate of return and thus the more capital it should attract and the more likely its current account balance would be in deficit and the more net foreign liabilities one would expect it to have. This is borne out in a recent paper by Lane and Milesi-Ferretti (2005a), who show that such a simple cross-country relationship explains 39% of the variance in the ratio of such assets to GDP. The United States is notably very far (about 35 percentage points) below the regression line, a distance exceeded only by Iceland in that direction.
2. This is a significant advantage (often called an "exorbitant privilege"), since it avoids the risks emanating from currency mismatches on the national balance sheet (McKinnon, 2001). A closely related advantage is that dollars are used in a number of foreign countries as common currency,

providing seignior age revenue. Indeed, at end-2003 fully 45% of the outstanding stock of dollar notes was held abroad.

3. Examining the period of floating exchange rates that began in the early 1970s, Edwards (2005) opines that the US external accounts look more like those of a Latin American or Asian nation than an industrialised country. Among the latter, only small nations have had deficits in excess of 5% of GDP and there have been only two cases where a deficit of this magnitude has persisted for any length of time: Ireland from 1978 to 1984 and New Zealand from 1984 to 1988. Indeed, in May Lehman Brothers wrote that: "were the US an emerging market economy – which it decidedly is not – … [its risk indicators] would imply a near one-in-two chance of a financial crisis" (Llewellyn and Subbaraman, 2005, p. 5).
4. Bordo (2005) has recently looked at four historical episodes of breakdown in the international monetary regime thanks to global imbalances and ultimately believes that a benign outcome is still the most likely, with gradual adjustment somewhat like the late-1980s. In his view, there is no case for international co-operation to resolve the systemic imbalances. Eichengreen (2005) points out that the outcome of reserve currency competition is not necessarily winner-takes-all: multiple reserve currencies already co-exist.
5. To a close approximation this is from services to goods, though that is far less true than it was a decade ago.
6. Cooper (2004) argues that this 10% share is by no means unreasonable, since the US share of global GDP is around one quarter and of marketable financial assets around a half.
7. See Brook *et al.* (2004, Box 1) for a discussion of the possible reasons for the asymmetry. Note that the asymmetry exists only for goods: indeed, for services there is an opposite gap in income elasticities. In any case, import penetration has risen steadily with only brief cyclical interruptions from around 5% in 1970 to over 13% most recently.
8. The only precedent for this came in the late 1960s during the Vietnam war, often cited as an example of a failure to choose between guns and butter.
9. Edwards (2005) notes that the simple correlation between the current account deficit and a broad measure of the real exchange rate of the dollar is greatest (0.6) when the exchange rate is lagged three quarters of a year.
10. Blanchard *et al.* (2005) argue that even if Europe and Japan had grown as fast as the United States since 1990, the likely partial-equilibrium increase in US exports would have been enough to lower the present current account deficit by only around ½ percentage point of GDP.
11. Pass-through rates from changes in exchange rates seem to have declined in most countries (except the United States), in large part as the structure of trade has shifted from primary commodities, especially energy, to differentiated manufactured goods. But such rates remain lower for the United States (at 0.26 in the short run and 0.41 in the long run) than for almost any other developed country (Campa and Goldberg, 2004).
12. The surplus on this account is only partly attributable to the different form the asset stocks have taken, with foreigners mainly buying low-risk and therefore low-yielding US debt, especially government debt, whereas US investors have focussed their acquisitions on equity-based assets (which represent about 60% of the their foreign asset portfolios, compared with less than 20% for Japanese investors); the United States has evolved from the world's banker to its venture capitalist (Gourinchas and Rey, 2005). The larger share is due to within-class differences that have been present throughout the post-war period. Also, US assets were on average acquired earlier and are therefore more mature. But Godley and Izurieta (2004) argue that undistributed profits from foreign direct investment are not available to finance transactions deficits and therefore should be excluded; this would lower this balance by around a percentage point of GDP.
13. Examples of such factors that have often been advanced include: trade policy and unfair foreign competition and the quality, composition or internalisation of US and foreign production.
14. Differential productivity developments explain to ¾ of the $/euro and $/yen exchange rate changes in the late 1990s (Tille *et al.*, 2001).
15. Private capital inflows rose from 1.6% of GDP in 1991 to 8.9% in 2004, while private capital outflows increased from 1.6% to 7.3% of GDP over the same period (Hung, 2005).
16. Blanchard *et al.* (2005) point out that these changes have initially offsetting effects on the exchange rate but that both lead to anticipated depreciation. Over the past 20 years, nominal growth in US GDP has averaged 5.6% per year, while trade has grown at an average rate of 7.4% and gross foreign assets and liabilities at an average 11.7% rate (Hatzius, 2005a).

17. They also own more than 30% of the debt issued by the two large government-sponsored housing finance enterprises, Fannie Mae and Freddy Mac (Obstfeld and Rogoff, 2004; 2005 update).
18. Note that the cross-country pattern of current account balances is well explained by the relative behaviour of housing prices and housing wealth (Bernanke, 2005). Al-Eyd *et al.* (2005) estimate that each 10% rise in real US house prices brings about a short-term widening of the current account deficit of ¼ percentage point of GDP through the stimulative effect on real private consumption.
19. The evidence is nonetheless fairly persuasive that fiscal policy does influence national saving – even if the effects may be small and less compelling for the United States than other G7 countries (Cotis *et al.* (2004) – mainly through the government purchases channel: see, for example, Hayford (2005)).
20. A significant correlation between the structural budget balance and changes in private saving in the United States was most recently demonstrated by de Mello *et al.* (2004).
21. Only Brown (2004) seems to think that the US current account deficit has already peaked, and his detailed estimates point to capital inflows easily covering the present trade shortfall.
22. There is a certain literature that tries to examine the US external sustainability question directly through either unit root tests for the ratio of the current account balance to GDP or changes in private saving and investment or the co-integrating relationship between exports and imports. The results have varied, but the latest contribution (Matsubayashi, 2005) still concluded that sustainability cannot be rejected.
23. However, Feroli (2003) predicts a period of US current surpluses before renewed deficits in a few decades. This might be explained by the heavy saving that typically occurs right before retirement.
24. Debelle and Galati (2005) find that reversals tend to occur when the current account deficit reaches 4 to 5% of GDP and net foreign indebtedness around 20% of GDP; they are also more likely when world output growth is slower and world interest rates higher. In a recent study covering more than a century, Adalet and Eichengreen (2005) also find the size of the trade balance to play a clear role, as does lagged growth in the home country of the world's reserve currency, with openness, per capita income and the fiscal balance having less robust outcomes.
25. Based on historical evidence since 1970, Edwards (2005b) estimates that growth could be cut from trend rates by 4 to 5 percentage points for a large, front-loaded reversal and even by 2½ to 4 points for a smaller, more gradual adjustment. Similarly, Debelle and Galati (2005) find that the average episode of current account adjustment involved a slowing of real output growth of 2 percentage points for one to three years. For his part Truman (2005) estimates that domestic demand growth will have to slow by at least one percentage point compared to the recent past. Assuming that the current account shrinks by 3 percentage points of GDP, but that real GDP growth is maintained, this amounts to $1 350 per person per year in addition to the terms-of-trade effect, which he pegs at $1 000 per person using a 30% depreciation and a 50% pass-through. The 1980s episode in fact had an annual growth slowdown of 2¼ percentage points and an annual domestic demand slowdown of 3¼ percentage points. Freund and Warnock (2005) are rather more sanguine: their look at post-1980 reversals in industrial countries generates an average growth shortfall relative to trend of only 0.15 percentage points for each percentage point of GDP adjustment in the deficit.
26. There is a growing literature – primarily with respect to developing countries – on what has become known as "sudden stops" (of capital flows), which tend to accompany current account reversals. See, for example, Calvo *et al.* (2004) and Edwards (2004). However, the observed coincidence of current account reversals and currency crises is attributable only to developing countries; industrial countries with reversals on average experienced an appreciation (Edwards, 2005a). Reversals have a significant negative effect on long-run real per capita growth in a large sample of countries. For larger countries this depressive effect is greater the more open the country is to international trade in goods and services, but smaller the more open it is to capital flows.
27. It would be up to monetary policy to ensure that full employment is maintained during the adjustment period
28. The long-term average gap in rates of return between US foreign assets and liabilities has averaged 1.2 percentage points before capital gains are taken into account but 3.1 percentage points in total. One important reason for the persistence of this gap is that 60% of US foreign assets are equity related, whereas the corresponding figure for its liabilities is only 38% (mainly because of the large share of foreign official assets).
29. However, foreign governments held only 16% of all US assets held by foreigners at end-2004, up from 12% in 2000 and 15% in 1992, but well below the 26% share recorded in 1982 (Hung, 2005).

30. Truman (2005) argues that the interest-rate effect of a reduction in capital inflows should be comparable to those of budget deficit cutting. Citing Laubach (2003), he says that the total effect of a fall equivalent to three percentage points of GDP should therefore be something of the order of ¾ percentage point. Most recently, Warnock and Warnock (2005) estimate that foreign capital inflows have lowered the yield on the ten-year Treasury note by some 150 basis points, with official flows responsible for about 60 basis points of that.
31. Skepticism that this "system" can last has been led by Eichengreen (2004). There are a variety of forces that will make it difficult for it to endure: a near-certainty of capital losses for dollar holders and thus a strong temptation to quit the cartel; internal dislocations in the United States (including structural resource misallocation); and risks of inflation in the undervalued-currency areas in Asia (because of imperfect sterilisation) and to their financial systems more generally.
32. As shown by Gourinchas and Rey (2005a), the wealth transfer to the United States is about ½ percentage point of GDP for every percentage point depreciation in the dollar (since about 70% of foreign assets are denominated in foreign currencies and such assets represent 71% of GDP). That means that the 16.3% fall in the dollar in 2002-04 offset roughly 55% of the impact of the current account deficits in those years.
33. They showed that a unit standard deviation shortfall of the ratio of net exports to net foreign assets yields a predicted 4% (annualised) increase in the rate of trade-weighted depreciation in the subsequent quarter.
34. A number of possible explanations for this asymmetry present themselves (Ferguson, 2005). As mentioned above, a rise in expected future income, possibly caused by the productivity acceleration of the past decade and the associated increase in stock-market wealth, would be expected to reduce desired saving, as would the lower interest rates and greater housing wealth seen in recent years. While stock markets have risen largely in tandem around the world over the past decade, the US market is far larger in relation to its economy, and equities represent a greater share of US wealth than elsewhere. Structural factors, especially ongoing financial liberalisation, could be encouraging private agents to re-optimise their spending patterns, as previous constraints on the ability to borrow are overcome. However, there is little evidence that this process has been unique to the United States.
35. Hatzius (2005b) posits that the glut has been due to a shift in the global distribution of income from low- and middle-income workers in OECD countries to emerging markets, oil producers, high income workers and multinational corporations. The latter group have higher savings propensities, at least in the short run. He shows that there has been a tight correlation between the global saving rate and a rough and ready calculation of the share of global GDP accruing to production and non-supervisory workers in OECD countries. The latter share has fallen by more than 3 percentage points since 1999 at the same time as the global saving rate has risen by more than 2 percentage points.
36. IMF (2005) extend the hypothesis to include higher trade openness, greater global competition and the rapid expansion of international capital flows as capital controls were dismantled.
37. This additional willingness to invest abroad is more likely to be exploited for investments in the United States because of its culture of innovation, favourable investment climate, security, transparency, protection of investor and property rights, and high perceived rates of return (Greenspan, 2004 and Ferguson, 2005). However, IMF (2005) suggests that the United States could have become a less attractive destination for foreign investors: securities markets abroad, especially in the euro area, have developed rapidly, increasing the scope for broader-based currency diversification.
38. Their view is based on the argument that such integration raises counterparty risk and on the observation that ultimately it is goods markets that have to bear the adjustment burden and their integration has not kept pace.
39. In the event that either NIIP exceeds 25% of GDP or the deficit on goods and services was greater than 5% of GDP (both of which are now true), this legislation (US Congress, 2005) would require the US Trade Representative to convene an emergency meeting of the Trade Policy Review Group so as to develop a plan of action to reduce the trade deficit and then to report back to Congress on that plan.
40. However, an earlier article by Lane and Perotti (1998) had shown that the depressive effect on net and gross export volumes is larger for wages than non-wage consumption.

41. See Erceg *et al*. (2005) for the lower-bound estimate and Gale and Orszag (2004) for the upper limit. Others have found elasticities both greater and smaller than this range (and even of the opposite sign). Recent OECD work found an effect of about 40% (Brook *et al*., 2004).
42. However, the evidence on how much retirement savings through pension funds represents new savings is inconclusive (Bernheim, 2002).
43. In fact, a regression of the current account deficit just on the change in home mortgage debt using quarterly data from 1952 has a coefficient of determination of 0.5 (Greenspan, 2005).
44. However, relatively little empirical work has looked at this. Tilton (2005) showed that the likely biggest gainers would be a variety of machinery and equipment sectors, especially semiconductors and electronic components. Gourinchas (1999) found that a 1% appreciation of the real exchange rate in France destroyed 0.95% of tradable-sector jobs over a two-year horizon. Job creation was seen to be more responsive than destruction, especially in import-competing tradables. Depreciation episodes tend to lead to "chill", that is a simultaneous reduction in both creation and destruction, whose downside is an increase in the average age of physical capital.
45. One note of caution is that tradability is increasing over time: some services have become tradable thanks to the plunging price of telecommunications. See Chapter 5 for a discussion of such "offshoring". Perhaps in part for this reason the IMF (2005) estimates that the share of tradables in the US economy is 32%, as it was in the 1980s, though the OECD's STAN database used in Figure 4.6, with a fixed sectoral allocation, shows much lower numbers and a sharp fall. In level terms the order of magnitude used here is confirmed by Gourinchas' (1998) more careful analysis.
46. Gourinchas (1998) finds that a 10% real appreciation of the dollar leads after a three-quarter lag to a 0.44% increase in job destruction in the tradables sector and a 0.17% increase in job creation (resulting in increased "churn", as opposed to greater "chill" in the event of depreciation) for a net loss of 0.27% (mostly concentrated in import-competing sectors). The US industrial base has shrunk in response to what McKinnon (2001) calls the international monetary version of the Dutch disease.
47. The US government already spends around $0.7 billion per year for programmes related to manufacturing technology administered by the National Science Foundation and the National Institute of Standards and Technology, for example. Its large defence spending also contributes to manufacturing competitiveness.
48. Of course thus far that adjustment has been towards services, which are mainly non-tradable. The United States has the OECD's largest service sector measured by employment and third-largest by value added. Some but by no means all of that is explained by its higher real income *per capita*.
49. This contrast is illustrated by the fact that displaced workers find new jobs much faster than their European counterparts but are much more likely to experience pay cuts of 30% or more – see Chapter 1 of OECD (2005b). This might have deeper negative implications if it were to lead to increased support for protectionist policies.
50. They write: "The labour market adjustment mechanism relies on inter-sectoral mobility of labour, so labour market policies that promote the reallocation of workers across sectors maximise the trade balance improvement that can be achieved from a fiscal reform of a given magnitude."
51. The only other recommendation made to the United States in Kongsrud and Wanner (2005) is that it should ensure the portability of pension rights.
52. Obstfeld and Rogoff (2005) show that in a three-country model if substitution elasticities are raised to the point that the adjustment horizon is 10 to 12 years, rather than one to two, the dollar's equilibrium decline against the euro, for example, is reduced by 77%.

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Chapter 5

Labour market issues

This chapter discusses developments in the labour market, which have been quite unusual in the current business cycle. While movements in unemployment have not been out of line with traditional patterns, this has resulted from a combination of both abnormally weak job creation and labour-force participation. Possible explanations for these trends are considered. These include higher trend productivity growth and offshore outsourcing on the one hand and demographic factors and rising school enrolment on the other. The issue of job quality – both in terms of earnings and working conditions – is also addressed. Finally, after a brief review of labour-market policies, some areas are identified where reforms or initiatives would be desirable.

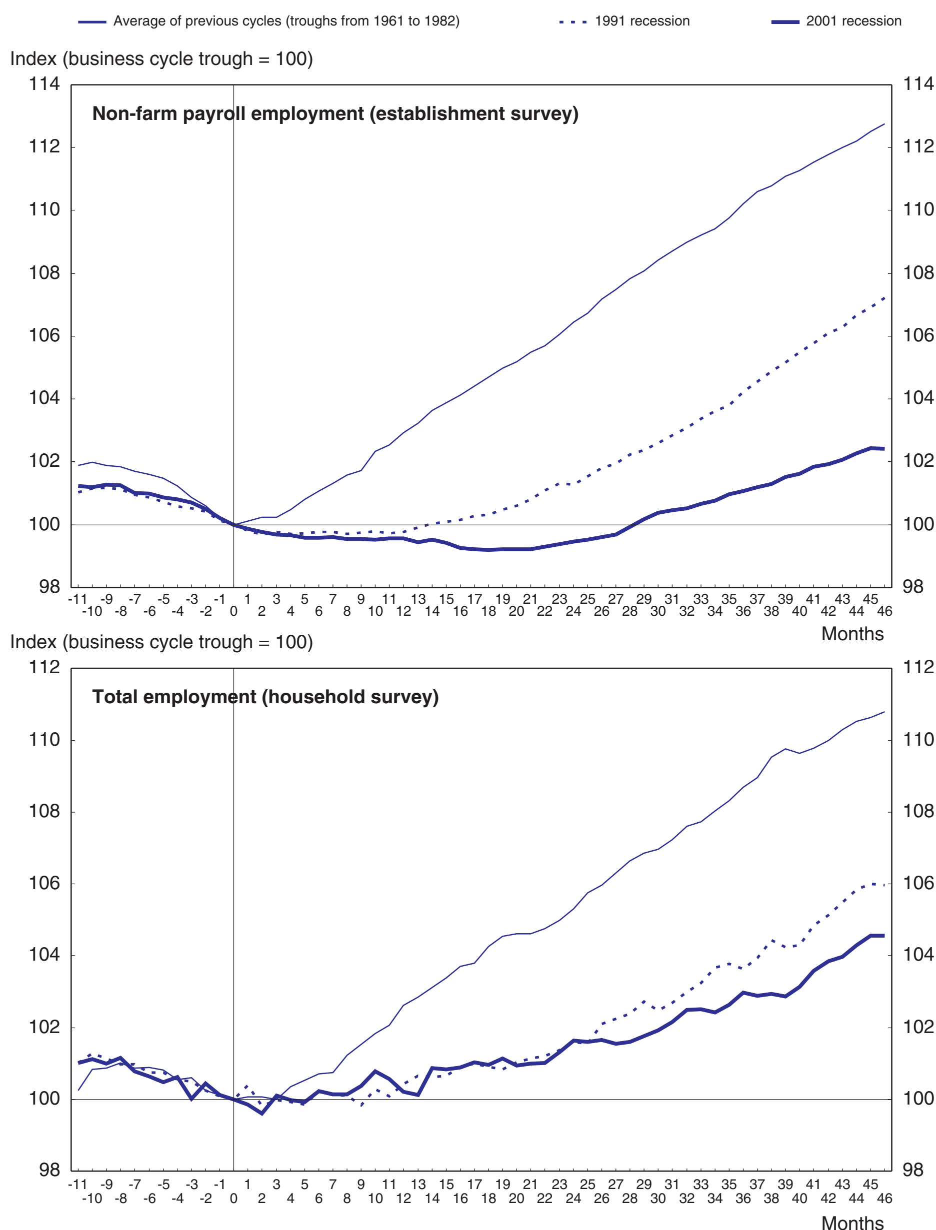
The stylised facts

The typical pattern of aggregate employment over the business cycle is for net job creation to decrease during a recession but then to rebound fairly rapidly during the subsequent recovery. By contrast, non-farm payroll employment continued to contract for one and a half years after the last recession had ended in late 2001, a half again as long as in the cycle of the early 1990s, which had already shown an unusually long lag between the turnarounds in output and employment (Figure 5.1, first panel). Moreover, its subsequent recovery has been subdued by historical standards, with non-farm payroll employment surpassing its pre-recession level only this past winter. Since the cyclical trough, it has grown by less than 2%, as compared with about 6% in the early 1990s and around 12% on average in previous cycles over a corresponding period. These differences are somewhat smaller – albeit still substantial – for the household survey measure of total employment (Figure 5.1, second panel), which is probably less reliable than the establishment survey (see Box 1.1 in OECD, 2004). The anaemic rate of net employment growth during the current economic expansion has been caused by a lack of job creation (which, at about 7% of total employment per quarter, has been 1 percentage point lower than in the early 1990s), and not by an unusually high rate of job destruction. The weakness of employment has been most pronounced but by no means solely present in manufacturing; the service-producing sector has also been underperforming relative to previous upturns.

Unemployment has displayed a much more traditional pattern in recent years (Figure 5.2, first panel). While it has receded more slowly than during economic upswings up to the 1980s, it also increased less during the preceding recession. In fact, it has moved very much like in the cycle of the early 1990s, although the average duration of unemployment has remained somewhat higher for longer than at that time. Labour-market slack – as measured by the difference between the actual and estimated structural unemployment rate – has also been very similar to that in the previous cycle when it was eliminated in the fourth year of the recovery. Moderate unemployment despite weaker labour demand reflects an unusually protracted decline in the labour-force participation rate (Figure 5.2, second panel). In the early 1990s, labour-force participation began to recover midway through the second year of the cycle, prolonging the rise in the unemployment rate. This time, three and a half years into the upswing, the participation rate is still about 1 percentage point below its cyclical peak, with no clear sign of recovery. Not all population groups have seen such a fall, but, as discussed below, a significant part of the recent decline in the overall participation rate appears to be structural. Indeed, the cyclical rise in the number of discouraged workers was not out of line with previous experience.

Another feature of the current expansion was the low share of value added being earned by labour recorded two and a half years from the cyclical trough (Figure 5.3, first panel). However, with a marked rebound thereafter, labour's share has recovered most of the unusual losses relative to the average in previous cycles. At the same time, real hourly

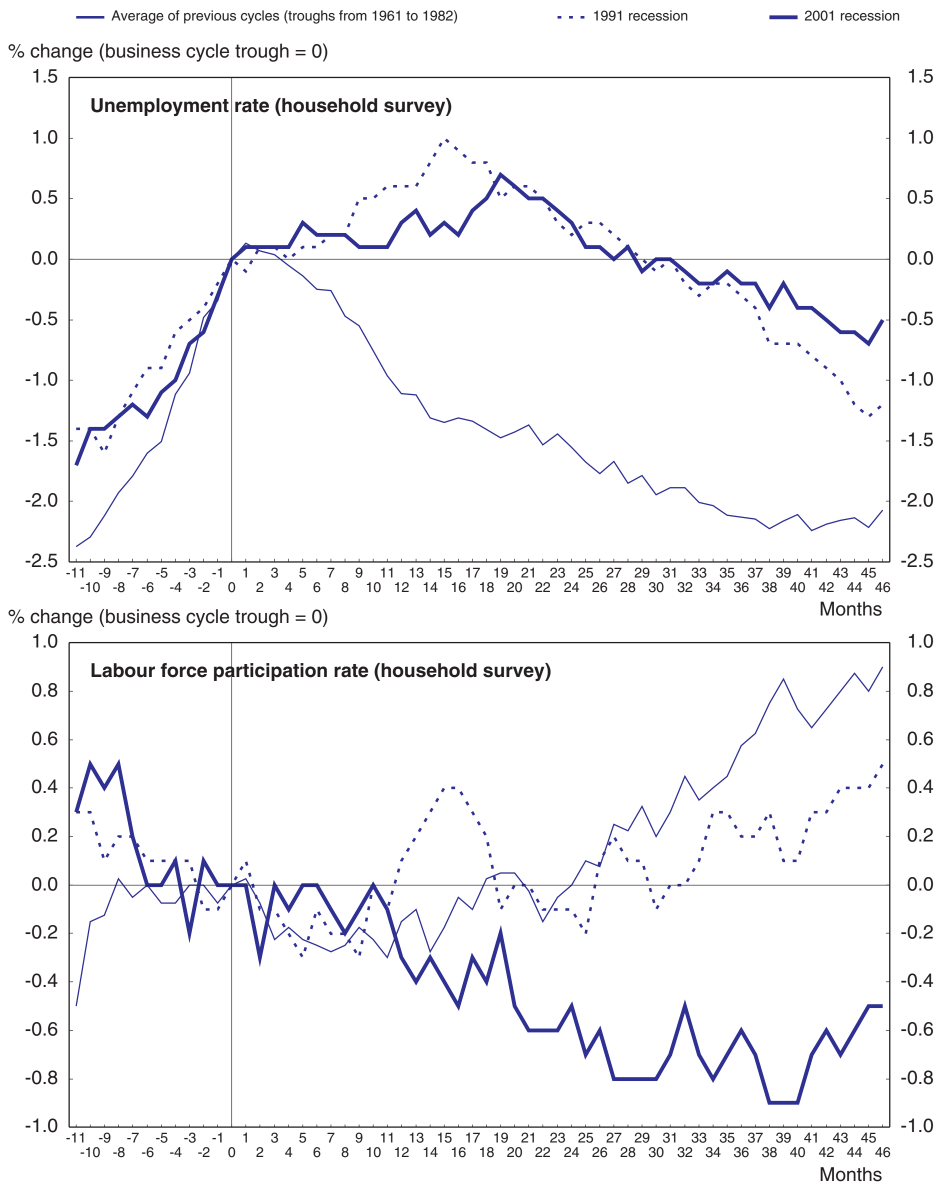
Figure 5.1. **Employment**



Source: Bureau of Labor Statistics.

compensation of employees in the non-farm business sector has developed broadly in line with historical experience, rising even more than usual over the first three and a half years of the economic recovery following a recent spurt (Figure 5.3, second panel). However, it has lagged behind hourly productivity growth (see below), whose recent strength has largely benefited capital: only about one-half of the rise in value added in the business sector has so far accrued to labour in the form of increased employment, more hours per employee and higher hourly compensation, less than two-thirds of the share realised on average in prior business cycles.

Figure 5.2. **Unemployment and labour force participation**

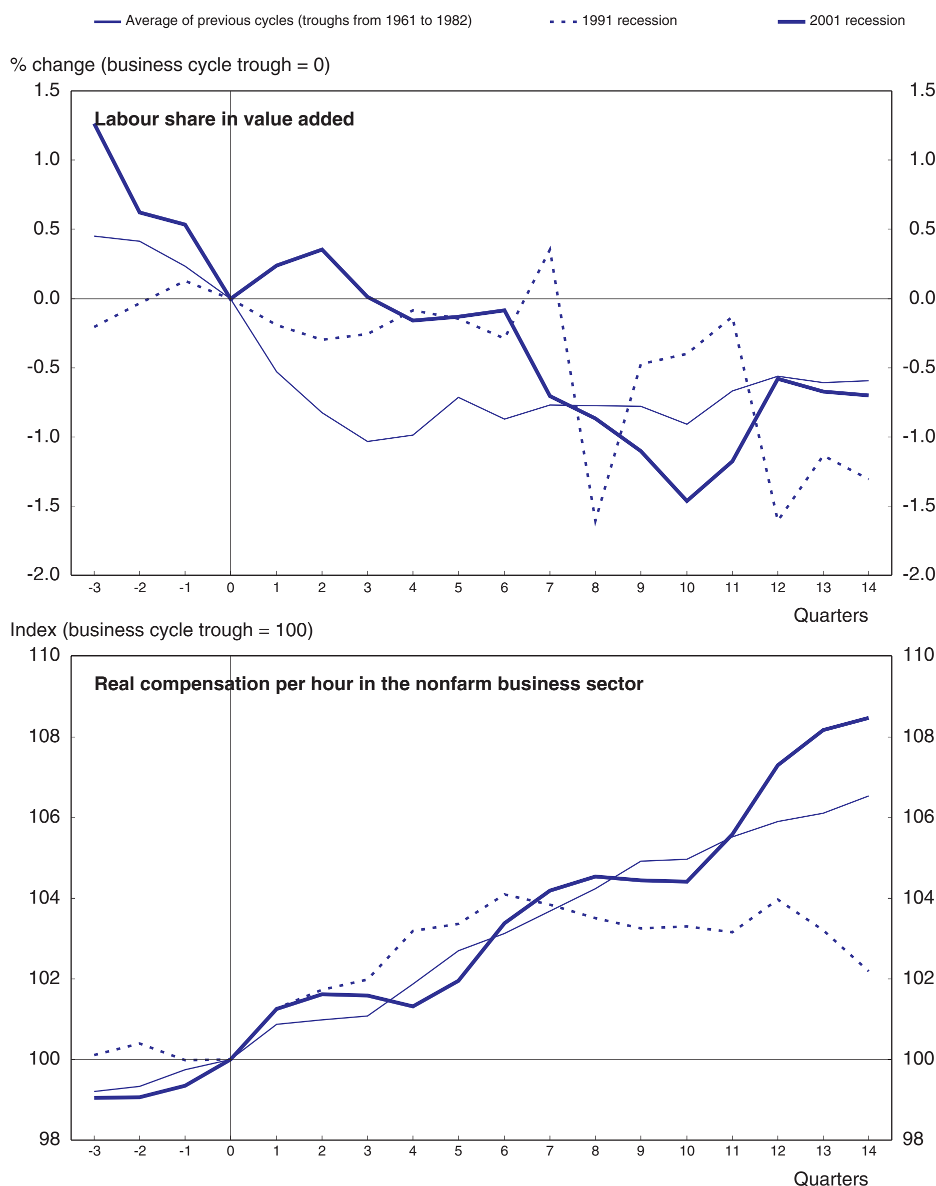


Source: Bureau of Labor Statistics.

Labour demand

Because of the relatively long time it took for employment to pick up following the 1990-91 recession commentators talked about a "jobless recovery". With an even weaker employment response, its successor has been named the "job-loss recovery". Indeed, the employment-to-population ratio is about 2 percentage points below where it typically would be at this point in an expansion, with little progress made over the past year. As a result, the United States has fallen from 6th to 10th place in the OECD in employment/population since the beginning of the decade. A perception has arisen that a major culprit behind the dearth of jobs is "offshoring" – the growing practice of firms to

Figure 5.3. **Labour compensation**



Source: Bureau of Labor Statistics and Bureau of Economic Analysis.

relocate part of their operations to lower-wage countries abroad, but most researchers have emphasised the role of productivity instead (Schultze, 2004). Other explanations for reduced labour demand include structural change, the nature of economic shocks and uncertainty. On the basis of trends in job relocation and permanent job losses some studies (Groshen and Potter, 2003; Schweitzer, 2004) have concluded that an increased pace of economic restructuring may be a factor holding back employment growth. Against this, others have pointed out that disappointing employment developments do not reflect high rates of job destruction but an unprecedented, widespread drop in job creation, which may be associated with specific features of the current cycle, for instance the relative weakness

of exports and business investment by historical comparison (Faberman, 2005). Finally, uncertainties surrounding the economic outlook – geopolitical factors, the "twin deficits" (see Chapter 4), corporate governance issues – may have contributed to a general reluctance to hire (see, for instance, Federal Reserve Bank of Boston, 2004). The importance of such factors is difficult to gauge, however, and other influences, such as reduced economic volatility, should have had the opposite effect. The following discussion focuses on productivity and offshore outsourcing.

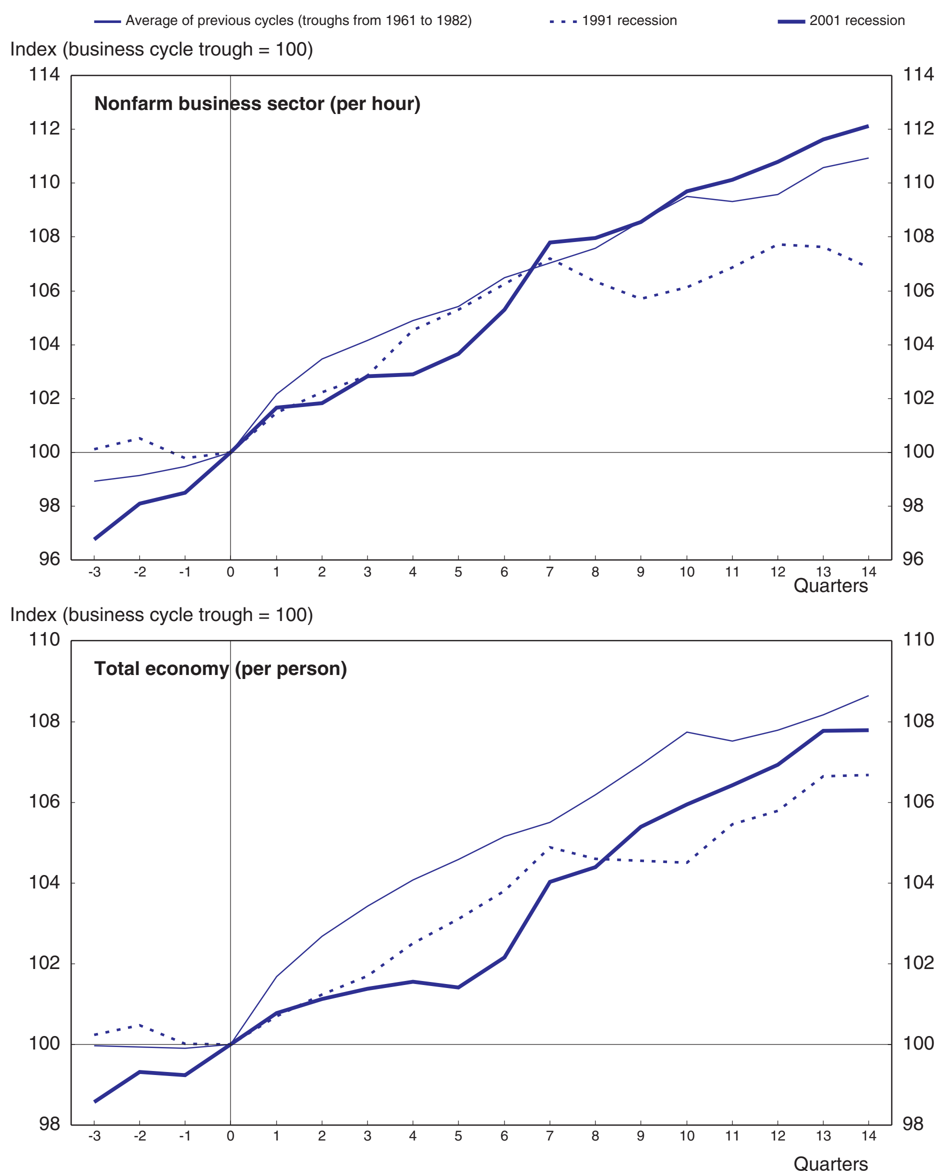
Productivity

Productivity has been the dominant engine of growth in output during the current recovery. It is quite unusual for productivity to be the main source of growth for such a long time: it normally decelerates as companies gain confidence during the expansion and raise employment or hours per worker. By contrast, in the current cycle, it hardly slowed during the recession and has continued to show robust growth in the fourth year of the expansion. As a result, in the non-farm business sector, so far in this cycle output per hour has increased significantly more than in the previous recovery and also somewhat more than on average in the past (Figure 5.4, first panel). Since the cyclical peak in the first quarter of 2001, it has grown at an annual rate of about 4%, as compared to the already rapid 2½ per cent rate recorded in the second half of the 1990s. The picture does not change significantly if productivity is related to the number of employees rather than hours. In the economy as whole, on the basis of household survey employment data, performance has been less outstanding, but still markedly better than in the early 1990s (Figure 5.4, second panel).

The productivity resurgence in the second half of the 1990s and its likely causes are by now well documented. Plausible explanations have been offered relating to rapid technological progress and capital deepening, especially of informational and organisational capital. Less well understood is the further subsequent productivity acceleration, which occurred despite a slowing of investment in both conventional capital goods and information technology (IT). Growth accounting (Jorgenson *et al.*, 2004) points to a broad-based pick-up in total factor productivity (TFP) as businesses use new technologies and other innovations to improve the efficiency of production (Table 5.1). Still, IT production is estimated to have accounted for almost half of the increase in aggregate TFP growth after 1995, far exceeding the 5% share of IT goods in aggregate output. Overall TFP growth has probably contributed almost two-fifths to the acceleration in labour productivity as compared to more than one-half for capital deepening. Again, a disproportionate part of the increased capital deepening is attributable to IT (about one-half, with information processing equipment and software accounting for about one-quarter of private fixed investment since the mid-1990s). Most researchers do not expect the economy to revert to the slow pace of productivity growth observed in the 1970s and 1980s.

Although arithmetically somewhat faster productivity growth "explains" the weakness of employment until recently, it is not necessarily the fundamental cause (Baily and Lawrence, 2004). It did raise the bar, however, in the sense that aggregate demand would have had to grow more strongly than otherwise in order to maintain robust employment growth, which did not occur because the economy was hit by a number of shocks (such as the terrorist acts of 11 September 2001, the investment overhang, along with the stock market correction). Moreover, although permanent technology shocks that

Figure 5.4. **Labour productivity**



Source: Bureau of Labor Statistics and Bureau of Economic Analysis.

boost productivity can cause employment losses, they are unlikely to have significant consequences for job growth over a longer period. While the direct effect of technological progress is to reduce the demand for labour, its indirect effect is a decline in unit labour cost, entailing higher demand for output and labour. There is evidence that the relationship between productivity and job growth was indeed negative in the 1960s and 1970s, but that this trade-off disappeared thereafter, giving way to a slightly positive correlation (Cavelars, 2005). The acceleration of productivity in the second half of the 1990s was followed by strong job creation and the lowest unemployment rate for a generation. A

Table 5.1. **Sources of US output and productivity growth**

Annualised percentage change

	1959- 2003	1959-73	1973-95	1995- 2003
Private output	3.58	4.21	3.06	3.90
Hours worked	1.37	1.36	1.57	0.85
Average labour productivity	2.21	2.85	1.49	3.06
Contribution of capital deepening	1.21	1.41	0.89	1.75
Information technology	0.44	0.21	0.40	0.92
Non-information technology	0.78	1.19	0.49	0.83
Contribution of labour quality	0.26	0.33	0.26	0.17
Total factor productivity	0.74	1.12	0.34	1.14
Information technology	0.25	0.09	0.24	0.53
Non-information technology	0.49	1.03	0.10	0.61

Source: Jorgenson *et al.* (2004).

similar outcome is likely for the next few years, absent major countervailing influences (see Chapter 1).

Offshore outsourcing

One of the potential negative factors having received an enormous amount of attention is "offshoring", that is the procurement of services or goods inputs by a firm from a source in a foreign country. While domestic outsourcing and international outsourcing of material inputs have been a fact of life for a long time, the recent expansion of the range of internationally tradable activity to many services made possible by technological advances and its competitive effects have been perceived as much more problematic (Mann, 2005). Although the scale of this phenomenon has probably been exaggerated (see below), the worry that it could spread has led to a sharp drop in the support for free trade among white-collar workers in the United States in the last few years (Amiti and Wei, 2004). Offshore outsourcing causes controversy because some jobs are lost immediately and visibly, while other potential impacts such as lower costs, job creation in other sectors and faster economic growth are less visible, more diffuse and typically delayed.

Despite widespread media attention, there is considerable uncertainty about the extent of international outsourcing and its effects. Import statistics provide some indirect evidence, although they do not allow an identification of US imports previously produced by US employees, and there is no clear line of demarcation between offshoring activities and simple purchases of goods and services abroad. In any case, they rather suggest that the importance of offshore outsourcing for the US economy is limited and that other countries are much more affected. Looking at trade data in the services categories most intensely reported, in the United States imports of business services other than computer and information services amounted to only 0.4% of GDP in 2003 compared with 2% in Germany, for instance, and much higher percentages in smaller economies (Table 5.2). In the United States, this share has roughly doubled every decade, measuring 0.1% in 1983 and 0.2% in 1993. Interestingly, India and China, two countries that have been portrayed as major recipients of outsourcing in the media, import more business services relative to their GDP than the United States, and their import shares of such services has also been growing over the past two decades or so. In the categories of computer and information services, which are quantitatively an order of magnitude smaller than other business services, the situation is similar. Moreover, like trade in goods, trade in services is a two-

Table 5.2. **Outsourcing by international comparison**

Imports, 2002

Rank	Country	Other business services	Rank	Country	Computer and information services
A. Ratio to local GDP (per cent)					
1	Angola	35.01	1	Cyprus	2.06
4	Ireland	15.44	2	Luxembourg	1.25
44	India	2.40	4	Belgium	0.57
57	Germany	1.96	13	Germany	0.31
74	France	1.33	29	Russia	0.17
75	Russia	1.33	30	United Kingdom	0.17
85	United Kingdom	1.03	43	China	0.09
99	China	0.63	48	France	0.08
103	Japan	0.62	57	Japan	0.05
117	United States	0.39	73	United States	0.01
B. Ratio to value-added of local service sector (per cent)					
1	Angola	138.67	1	Luxembourg	1.60
5	Ireland	28.28	4	Ireland	0.81
37	India	4.96	5	Belgium	0.79
59	Germany	2.90	12	Germany	0.45
70	Russia	2.37	26	Russia	0.31
78	China	1.87	29	China	0.27
80	France	1.86	33	United Kingdom	0.23
90	United Kingdom	1.44	53	France	0.11
104	Japan	0.93	59	Japan	0.08
115	United States	0.53	74	United States	0.02

Source: IMF, *Balance of Payments Statistics Yearbook*.

way street. Most countries not only outsource to other countries but also receive outsourced services from the rest of the world, for which the word "insourcing" has been used as a shorthand. Of course, given the high level of aggregation in the trade data, it is not clear whether countries are actually importing and exporting exactly the same service. Still, using exports of business and computing services as a proxy for insourcing, it turns out that, unlike Germany but like India and China, the United States is among the top net recipients of global service outsourcing (Table 5.3). Although net insourcing in the United States has not picked up strongly like, for instance, in India, it has shown a slight upward trend. A recent study (Groshen *et al.*, 2005) estimates that, in 2003, the US trade surplus on services was equivalent to 1.2 million jobs, unchanged from ten years earlier; by comparison, 3.8 million jobs were embodied in net imports of manufactured goods, three times the estimate for 1983 but still only a fraction of total private employment of 130 million.

Labour market statistics provide limited information about the employment effects of offshoring. The Department of Labor's Mass Layoff Survey shows that in the United States extended layoffs due to overseas relocation have tended to increase but still represent a small fraction of workers laid off (about 1½ per cent in 2004). Most such layoffs have been in the manufacturing sector. However, the Survey identifies only a portion of total layoffs, because it covers only relatively large establishments (50 or more employees). Occupational and general employment statistics indicate that occupations and industries commonly associated with offshoring have experienced greater than average job declines

Table 5.3. **Outsourcing and insourcing**

2002, million US dollars

Rank	Country	Other business services	Rank	Country	Computer and information services
A. Outsourcing (imports)					
1	United States	40 929	1	Germany	6 124
2	Germany	39 113	2	United Kingdom	2 602
3	Japan	24 714	3	Japan	2 148
4	Netherlands	21 038	4	Netherlands	1 586
5	Italy	20 370	5	Spain	1 572
6	France	19 111	6	United States	1 547
9	United Kingdom	16 184	9	France	1 150
11	India	11 817	10	China	1 133
18	China	7 957	14	Russia	592
20	Russia	4 583			
B. Insourcing (exports)					
1	United States	58 794	1	Ireland	10 426
2	United Kingdom	36 740	2	United Kingdom	5 675
3	Germany	27 907	3	United States	5 431
4	France	20 864	4	Germany	5 185
5	Netherlands	20 074	5	Spain	2 487
6	India	18 630	10	France	1 191
8	Japan	17 401	11	Japan	1 140
14	China	10 419	12	China	638
29	Russia	2 012	25	Russia	137

Source: IMF, *Balance of Payments Statistics Yearbook.*

since 2001 (United States Government Accountability Office, 2004a). Yet, the reasons for these declines cannot be specifically linked to international outsourcing, since other factors, such as the collapse of the dot.com bubble, have probably contributed. On the basis of trade data, Schultze (2004) estimated that the aggregate job loss from outsourcing of business, professional and technical services over the three years to 2003 might have been between 155 000 and 215 000. Studies carried out by private consulting firms have put forward somewhat higher figures (their estimates are summarised in Annex 5.A1). But even substantially higher numbers would still be small in relation to the size of the US labour market and the magnitude of the annual job creation and destruction that characterise the dynamic American economy. Moreover, as shown above, in the broad area of business and computing services the United States has a large export market that continues to expand, providing a growing number of jobs for American workers.

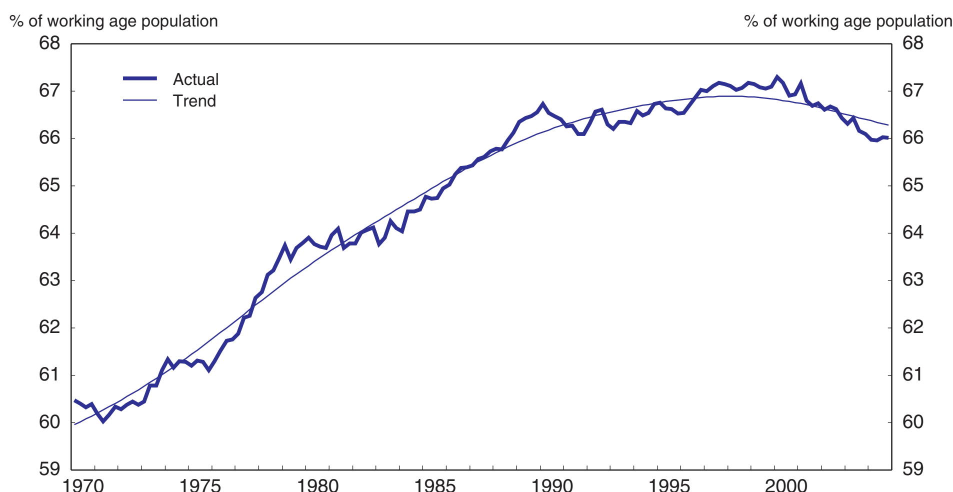
The issue thus is not so much current but rather potential future offshoring and whether it might increasingly adversely affect the US labour market. The studies summarised in Annex 5.A1 project that up to half a million information technology jobs will be displaced within the next few years and that potentially up to 3½ million jobs across all occupations will shift outside the United States over the next decade. Such projections are, however, subject to great uncertainty, since the information available does not even permit the estimation of the current level and impact of offshore outsourcing with any precision. Moreover, many of the studies of job losses do not take into account other economic effects of offshoring that might offset those losses, or they focus only on one industry. Model simulations suggest that, over time, international outsourcing should raise

productivity and GDP sufficiently to leave overall employment and unemployment broadly unchanged (Baily and Lawrence, 2004). Nonetheless, in the short run, job turnover associated with offshore outsourcing is not costless and may disproportionately affect certain regions, sectors and populations. Jensen and Kletzer (2005) find that job insecurity in tradable activities, especially service activities, is above average, although this does not necessarily mean that jobs move offshore. OECD analysis shows that the share of occupations potentially affected by offshoring is relatively high, at 18% of total employment, although, unlike in Europe, it has tended to decline in the United States (OECD, 2005). This highlights the importance of adjustment assistance policies (see below), not least to avoid a protectionist backlash.

Labour supply

Like labour demand, labour supply has slowed markedly in recent years. This is largely attributable to the fact that the rate of growth of the labour force has fallen below that of the working-age population, which has changed comparatively little. Although the labour-force participation rate tends to decrease when job prospects are poor, as shown above, recent declines have easily exceeded the cyclical norm. This raises the question of whether economic slack is being reflected increasingly in the participation rate rather than in the unemployment rate. The answer to this question hinges on whether recent declines in participation have been due to cyclical or structural factors. The fact that the downturn in the participation rate coincided with the weakening of economic activity in 2000-01 suggests an association with the business cycle. According to the household survey, the number of those leaving the labour force because of "discouragement over job prospects" rose significantly beginning in 2001 before receding over the past year. However, it has not surpassed the peak recorded in the previous cycle. In fact, the upward trend of the participation rate seems to have peaked in the second half of the 1990s and begun to reverse at the end of the decade. A simple statistical fitting of a time trend suggests that the cyclically-adjusted participation rate is now declining at a rate of 0.1 per year (Figure 5.5). Underlying this development is the levelling off of female participation after its

Figure 5.5. **Labour force participation: trend and cycle**



Source: Bureau of Labor Statistics and OECD calculations.

doubling over the prior five decades. At the same time, male participation has continued its steady downtrend. This section discusses several factors – demographic changes, educational enrolment, disability, retirement decisions and immigration – that have an impact on labour supply and might help disentangle cyclical and more permanent influences.

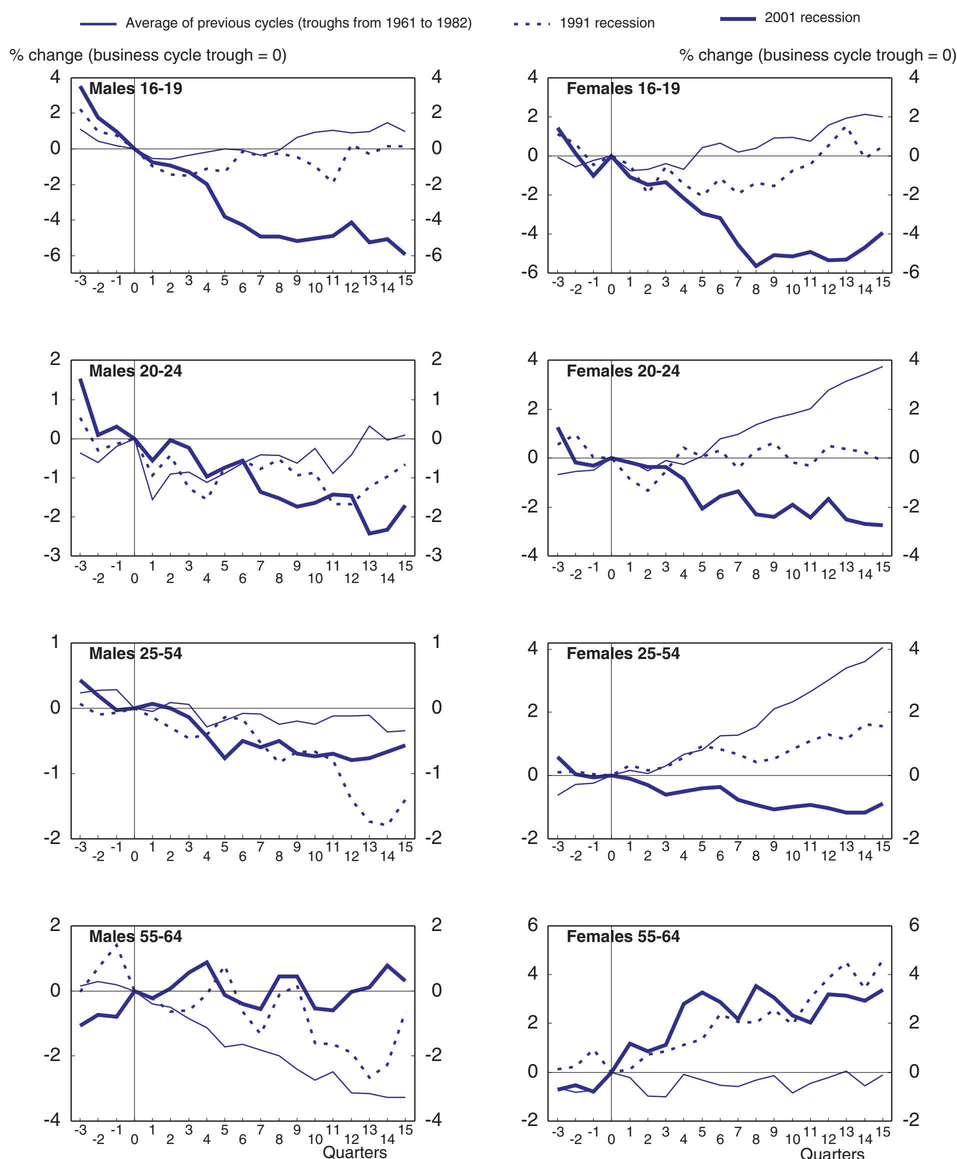
Demographic trends

Demographic changes are not an important part of the explanation of the decline in the labour-force participation rate. In general, one might expect the aging baby-boom generation to put downward pressure on the rate, as this cohort moves towards its retirement years when participation has traditionally been lower. Although this possibility is clearly a concern for the future, changes in the age composition of the population have so far not accounted for much of the drop in the participation rate. The overall participation rate reflects declines for all demographic groups other than older workers, but the deviation from the cyclical norm has been most pronounced for teenagers of both genders (Figure 5.6). The drop in the participation rate for young adults and, in particular, prime-age workers has been smaller. While for all these groups the fall in participation was very similar for men and women in the current business cycle, female participation rates have diverged much more from previous cycles when their upward trend was hardly interrupted during economic downturns. As mentioned, the exception has been older workers, whose labour-force participation rate has compared favourably with previous experience, increasing somewhat for men and rising markedly for women. This group being four times as numerous as that of teenagers active in the labour market, the increase in their participation rate has more than offset the decline in teen participation. On the other hand, the aging of the baby-boom generation shifts individuals from the prime-age into the older-workers group, whose average participation rate remains much lower despite recent rises, thereby slightly reducing the overall participation rate (Congressional Budget Office, 2004a).

School enrolment

The sharp fall in teen labour-force participation in the current cycle accounts for about half of the total decline, although those aged 16 to 19 comprise only around 5% of the labour force. The main reason cited in a number of analyses is higher educational enrolment. According to one estimate (Coffin, 2004) as much as 40% of the decline in teen participation since the end of the recession can be explained by increases in school enrolment and teen unemployment. The proportion of teenagers enrolled in summer school, in particular, has increased markedly while, at the same time, the July labour-force participation rates for this population have plunged. The decision to stay in school during the summer may in part be influenced by students' perceptions about how difficult it is to get a part-time job. With fewer employment opportunities, school is a natural alternative. However, it is hard to argue that cyclical factors dominate. Youth labour-force participation rates have trended downward since the early 1990s, while enrolment rates have continued to drift upwards (Figure 5.7). The most likely reason for the growth in enrolment rates is the attraction of better job opportunities available to those who complete more education. Returns to education have risen enormously. For instance, the earnings advantage of male college graduates compared with high school graduates of the same age – which was approximately 50% in the late 1970s – has almost doubled since then (Congressional

Figure 5.6. **Labour force participation rates by age and gender**



Source: Bureau of Labor Statistics.

Budget Office, 2004b). In addition, workers with more education typically have jobs with better fringe benefits and are less likely to be unemployed. However, higher enrolment rates for youth have not led to parallel improvements in educational attainment. While tertiary degrees have increased, the percentage of 25 to 34 year-olds having attained at least upper secondary education has remained flat. A tightening of graduation standards may have played a role, as might immigration concentrated among young males.

Labour supply growth has not only been dampened by rising school enrolment but also by falling participation among out-of-school youth. This tendency, which started well before the recent economic downturn, has been most pronounced for male teenagers,

Figure 5.7. **Educational enrolment and labour force participation rates**

Persons aged 16 to 24, October

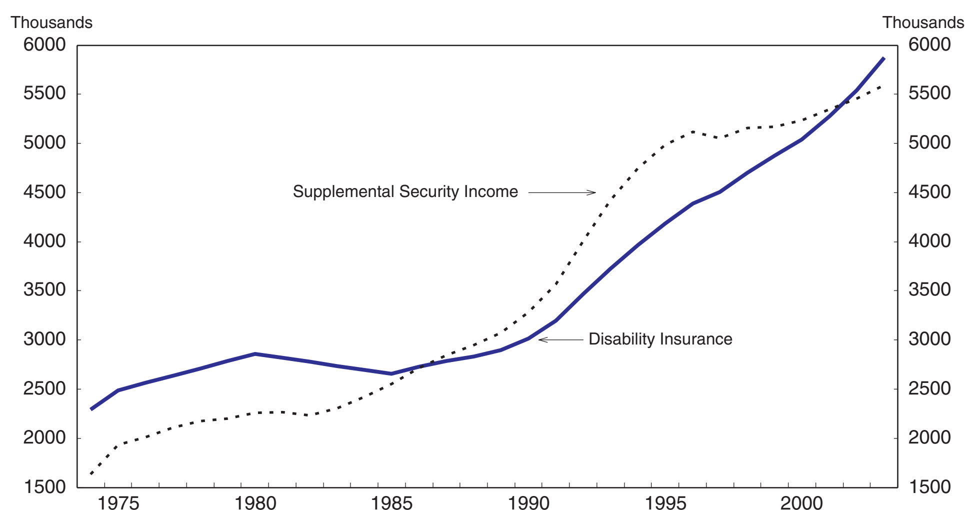
Source: Bureau of Labor Statistics, Monthly Labor Review, July 2004.

reflecting a decline both in their availability for, or interest in, work and in the relative job opportunities for them. Sectoral and occupational shifts in employment have benefited female youths compared to their male counterparts, and the entry of (mainly male) immigrants (see below) into the labour force has reinforced the deterioration in employment opportunities for male youths and may have discouraged them from looking for work (Congressional Budget Office, 2004b). Indeed, while the number of "discouraged workers" has declined significantly over the past year, this decline has been limited to those aged 25 years and over.

Disability

The participation rates for prime-age workers have also declined over the past few years. One reason may be greater incentives for the low skilled to take up disability rather than unemployment benefits. This is a long-standing trend: both the number of those receiving disability benefits under the Supplemental Security Income programme and under the Social Security system (see below) have more than doubled over the past 20 years or so (Figure 5.8). The percentage of those aged 25 to 64 that collect benefits from one of the two programmes or both has also nearly doubled since 1984 when it was around 3%. This partly reflected a change in legislation that year which, for both programmes, broadened the definition of disability while reducing the stringency of screening governing access to benefits by giving more voice to applicants and medical providers. Between 1984 and 2001, the rise in the share of non-elderly adults receiving Social Security disability insurance benefits is estimated to have reduced the unemployment rate by half a percentage point (Autor and Duggan, 2003). Over time, disability application rates appear to have become substantially more responsive to adverse cyclical shocks, not least because of a gradual increase in the replacement rate associated with this benefit for low-skilled workers. This is attributable to the fact that the benefit is indexed to the average wage, and the dispersion of earnings has tended to increase. In addition, the real value of the accompanying medical benefits under Medicaid has risen, an important factor in a context where a growing share of low-skilled workers do not enjoy company-paid health

Figure 5.8. **Persons receiving disability payments**



Source: Social Security Administration, Annual Statistical Supplement, 2004

insurance. Another factor contributing to increased use of disability benefits is the fact that, while access to them became less stringent, the opposite has been case for entry to unemployment and early retirement benefits (which are less generous). The importance of disability in explaining labour-force participation trends is illustrated by the fact that, according to the Department of Labor, the proportion of prime-age women reporting "illness or disability" as the reason for "not working or looking for work", which was 12½ per cent in the early 1990s, has almost doubled since then (the respective share for prime-age men being relatively stable at a higher level). Although both the coverage and generosity and the incidence of disability benefits, which are closely correlated, are near the average of member countries (OECD, 2003), the tendency for disability benefits to replace unemployment benefits is problematic, since disability beneficiaries are less likely to return to the labour force when the economic situation improves.

Retirement

In contrast to these other population groups, older workers (aged 55 and over) have increasingly participated in the labour force, adding about 1 percentage point to the overall rate since the start of the recession. The reasons for this tendency are not well understood. Improvements in health may play a role, allowing a postponement of retirement. An additional reason may be the removal of the earnings test and other modifications to Social Security. Another factor that may have led workers to bypass early retirement is the adverse effect on their wealth holdings of the stock market correction. Indeed, defined-contribution corporate pension plans, which shift the financial risk to employees, have become prominent since the mid-1990s. Nonetheless, defined-benefit plans remain an important source of retirement income among American workers, and the failure of major plan sponsors in a few industries has led to the termination of pension plans, with insurance providing only limited compensation. Some may need to retain health insurance until they become eligible for Medicare. All this, along with the public debate about the funding crisis of Social Security, may have affected older workers' sense of retirement security and induced (or obliged) them to remain in the labour force for longer. However,

the long-standing trend toward declining participation among men of this age group halted already in the mid-1990s and has since reversed gradually. At the same time, unlike among younger women, the upward trend of participation among older women has continued and even accelerated. In recent years, participation rates also have been rising rapidly for both men and women aged 65 to 69. This reflects not only later retirement but also the return from retirement to work, often in some limited, part-time capacity. Whether this group's participation rate continues to rise may depend more on their overall perception of retirement security than on labour-market conditions.

Immigration

Immigrant labour has been the largest source of growth in the labour force, accounting for about half of its increase since the beginning of the 1990s and virtually all of its net change since the beginning of the decade (Camarota, 2004). Increasingly, immigrants have little formal education and are competing with unskilled native workers, putting downward pressure on their wages (see section below) and employment opportunities. Hence, the influx of immigrants may have indirectly contributed to the decline in labour-force participation of out-of-school male youth, given that foreign-born men are more likely to be in the labour force than foreign-born women (Congressional Budget Office, 2004b). As discussed below, there would seem to be scope for raising the net benefits of immigration, for instance by concentrating it among workers whose skills are in scarce supply and by adjusting admission levels in response to business cycle conditions, although this requires addressing the problem of illegal immigration (Hanson, 2005). According to the most recent estimates, there are about 10 million undocumented immigrants in the United States, the majority of whom are low-wage workers (Council of Economic Advisers, 2005).

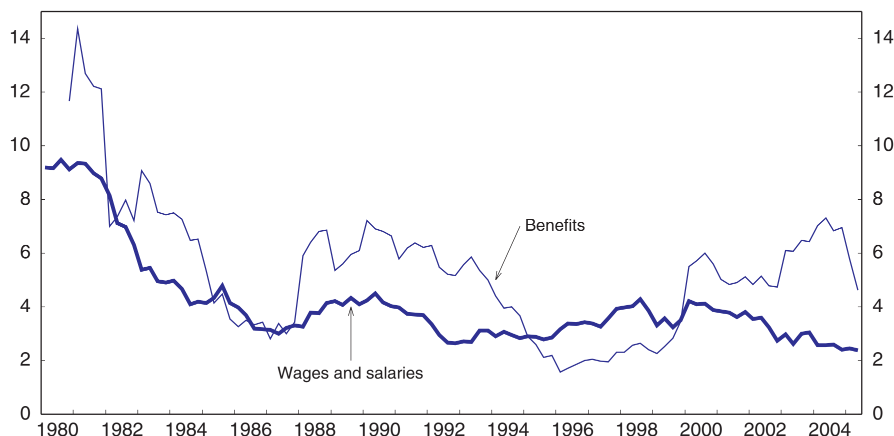
Compensation and job quality

While labour compensation per worker has not been out of line with historical norms, wage gains have lagged overall compensation growth more in this expansion than previously, reflecting soaring healthcare and pension benefits (Figure 5.9). The benefit explosion seems to have had substantial labour-market effects. Baicker and Chandra (2005) estimate that a 10% increase in premiums for employer-provided health insurance reduces the likelihood to be employed by 1½ per cent and results in an offsetting decrease in wages of more than 2%. To some extent, the weaker-than-usual wage increases (especially relative to productivity gains) may reflect cyclical factors. Using data from the biannual Displaced Worker Surveys (DWS), Farber (2005) found that for re-employed job-losers with education beyond high school the earnings loss in the 2001-2003 period was dramatically larger than in any earlier period for which data are available; however, he also observed that in the 1997-99 period, the late phase of the previous upswing, the earnings decline suffered by displaced workers was at a historical low. Coincidently, this was also a period when – following the spread of managed care in the health sector – benefit growth was unusually weak.

Although the DWS does not provide direct information as to whether international trade caused job losses, using industry exposure as a proxy, Kletzer (2001) concluded that wage cuts experienced by re-employed trade-displaced workers are quite similar to those experienced by displaced workers for other reasons. Nonetheless, model simulations suggest that, as the US economy becomes more exposed to imports embodying low-cost

Figure 5.9. **Wages and benefits**

Private industry, year-on-year changes



Source: Employment Cost Index, Bureau of Labor Statistics.

labour, the distribution of income shifts towards capital: the initial impact of offshoring is to increase profits and displace labour; over time, higher productivity and lower prices increase real compensation, leaving workers better off, but a shift in the income distribution is a persistent consequence of the ongoing process of offshoring (Baily and Lawrence, 2004). Other authors explain the divergence between capital and labour income by institutional factors, such as the decline in the unionisation rate (partly associated with the growing service sector) and a rising role of institutional investors among shareholders (Bivens and Weller, 2005). According to some studies (*e.g.* Borjas, 2004), immigration seems to have exerted substantial downward pressure on wages, although this is a long-standing trend, and other research suggests that, on average, immigration has little effect on native wages (Council of Economic Advisers, 2005).

The deterioration of job quality has been a recurrent theme and has received renewed attention recently, with researchers presenting both anecdotal and empirical evidence of an acceleration of this process. Yet, there are many ways of defining and measuring the concept of "job quality", so it is difficult to reach agreement about its evolution. One study (Bernstein *et al.*, 2004) concluded that, almost three years into the recovery, the quality of jobs in expanding sectors had remained below that in contracting sectors, and an Employment Quality Index developed by private-sector researchers (Tal, 2004) indicates a dramatic decline in job quality in the early part of this decade, followed by only a slight improvement over the past year. Data prepared by the Bureau of Labor Statistics appear to contradict this analysis. The reason for this difference is twofold. First, the Bureau's work focuses on occupations rather than industries and therefore provides a more precise picture of the change in the wage structure. Second, the Index defines job quality more broadly, taking into account not only shifts in relative compensation but also the development of part-time and self-employment, which are considered to be of a lower quality and less stable. The weight given to such factors is of course arbitrary. One aspect of job quality that has clearly deteriorated is health insurance coverage. From 2000 to 2003, the share of those covered by employer-sponsored plans dropped by more than

3 percentage points to 60½ per cent of total dependent employees, while coverage for lower-income workers fell by 4 points to a little over 20%.

Policies

Active labour market policies comprise a variety of programmes, and the current Administration has announced a number of new initiatives to make job training more responsive to skills in demand (Department of Labor, 2004). Nonetheless, except in the late 1970s and early 1980s, active policies have played only a small role in the US labour market. Among the OECD countries for which data are available, only Mexico spends less on active measures in relation to GDP. At the other extreme, Sweden's public expenditure on active labour market policies as a percentage of GDP is ten times as high as that of the United States (Table 5.4). In terms of participation in programmes, the difference is less striking, with participant inflows as per cent of the labour force in the United States about one-fourth of those in Sweden. In general, these programmes use the federal-state partnership model where the federal government provides the lion's share of the financing and broad guidelines, while the states design and implement the programmes. Performance levels or targets for main programmes are negotiated by the Department of Labor for each state, and states that repeatedly miss them face a reduction in their federal grants. A major overhaul of the delivery of employment services took place with the passage of the Workforce Investment Act (WIA) in 1998, which laid the foundation for integrating workforce developing services through local One-Stop Career Centers. WIA is intended to meet the needs of all workers, but it also covers programmes aimed at targeted groups such as disadvantaged youth and dislocated workers. Spending on youth initiatives is in fact comparable to that in other member countries, but expenditure on work measures for the disabled is very low by international comparison.

The United States is unique within the OECD for having operated a targeted programme for trade-displaced workers, the Trade Adjustment Assistance (TAA) programme, for over 40 years. It is national in scope and, in principle, available to all workers losing their jobs due to imports. However, in practice, the Department of Labor's interpretation of the law has restricted eligibility to manufacturing industries. TAA offers a more generous set of unemployment benefits and training to workers certified as being trade-displaced than are available to other displaced workers. But the cumbersome procedure involved in certifying job losers for TAA has resulted in low take-up rates and often long delays in the receipt of adjustment assistance (Kletzer and Rosen, 2005). The TAA Reform Act of 2002 provided for greater income support. The TAA now includes a refundable tax credit for health insurance and an experimental wage insurance scheme, the Alternative Trade Adjustment Assistance (ATAA) programme. Since August 2003, workers at least 50 years of age eligible for TAA may choose the alternative programme instead. ATAA offers workers who start a new full-time job within 26 weeks of separation a wage subsidy of 50% of the difference between their new and old salary up to a maximum amount for two years. An evaluation of the TAA Reform Act (United States Government Accountability Office, 2004b) found that, because of the new time limits, workers tend to enrol in services more quickly and petition-processing time has been reduced significantly. Stricter deadlines may, however, have negatively affected some workers, especially during large layoffs, as they do not always leave enough time to assess workers' training needs. The implementation of the health coverage tax credit has led to a sharp increase in the issuance of training waivers, which are necessary for workers to qualify. On the other hand,

Table 5.4. **Public expenditure and participant inflows in labour market programmes in selected OECD countries**

Programme categories and sub-categories	United States							
	Public expenditure as a percentage of GDP				Participant inflows as a percentage of the labour force			
	1999-2000	2000-01	2001-02	2002-03	1999-2000	2000-01	2001-02	2002-03
1. Public employment services and administration	0.04	0.04	0.04	0.04				
2. Labour market training	0.04	0.04	0.03	0.03	. .	0.97	0.94	. .
a) Training for unemployed adults and those at risk	0.04	0.04	0.03	0.03	–	0.97	0.94	. .
b) Training for employed adults	0.01	–	–	–	–	–	–	. .
3. Youth measures	0.03	0.03	0.03	0.02	. .	0.44	0.44	. .
a) Measures for unemployed and disadvantaged youth	0.03	0.03	0.03	0.02	. .	0.36	0.35	. .
b) Support of apprenticeship and related forms of general youth training	–	–	–	–	. .	0.09	0.09	. .
4. Subsidised employment	0.01	0.01	0.01	0.01	0.37	0.38	0.35	. .
a) Subsidies to regular employment in the private sector	–	–	–	–	0.37	0.33	0.29	. .
b) Support of unemployed persons starting enterprises	–	–	–	–	–	–	–	. .
c) Direct job creation (public or non-profit)	0.01	0.01	0.01	0.01	. .	0.05	0.06	. .
5. Measures for the disabled	0.03	0.03	0.03	0.03	. .	. .	. .	. .
a) Vocational rehabilitation	0.03	0.03	0.03	0.03	. .	. .	. .	. .
b) Work for the disabled	–	–	–	–	–	–	–	. .
6. Unemployment compensation	0.23	0.30	0.55	0.57	. .	. .	. .	. .
7. Early retirement for labour market reasons	–	–	–	–	–	–	–	. .
TOTAL	0.38	0.45	0.71	0.71	. .	. .	. .	. .
Active measures (1-5; for inflows, 2-5)	0.15	0.15	0.15	0.14	. .	1.80[1]	1.74[1]	. .
Passive measures (6 and 7)	0.23	0.30	0.55	0.57	. .	. .	. .	. .

Programme categories and sub-categories	Sweden							
	Public expenditure as a percentage of GDP				Participant inflows as a percentage of the labour force			
	1999	2000	2001	2002	1999	2000	2001	2002
1. Public employment services and administration	0.29	0.30	0.35	0.37				
2. Labour market training	0.47	0.29	0.30	0.29	3.79	2.84	2.68	2.50
a) Training for unemployed adults and those at risk	0.46	0.29	0.29	0.28	3.21	2.42	2.32	2.40
b) Training for employed adults	0.01	0.01	0.01	0.01	0.58	0.42	0.36	0.10
3. Youth measures	0.03	0.02	0.02	0.02	0.73	0.62	0.55	0.61
a) Measures for unemployed and disadvantaged youth	0.03	0.02	0.02	0.02	0.73	0.62	0.55	0.61
b) Support of apprenticeship and related forms of general youth training	–	–	–	–	–	–	–	–
4. Subsidised employment	0.44	0.26	0.23	0.21	3.33	2.97	2.11	1.95
a) Subsidies to regular employment in the private sector	0.17	0.14	0.18	0.17	2.78	2.66	1.89	1.70
b) Support of unemployed persons starting enterprises	0.07	0.05	0.04	0.04	0.36	0.30	0.22	0.25
c) Direct job creation (public or non-profit)	0.20	0.07	–	–	0.19	–	–	–
5. Measures for the disabled	0.55	0.50	0.49	0.50	0.85	0.90	0.87	0.99
a) Vocational rehabilitation	0.03	0.03	0.03	0.03	0.51	0.55	0.43	0.50
b) Work for the disabled	0.52	0.47	0.46	0.47	0.34	0.34	0.44	0.48
6. Unemployment compensation	1.53	1.31	1.04	1.04	. .	. .	. .	. .
7. Early retirement for labour market reasons	0.09	0.06	0.03	0.01	. .	. .	. .	. .
TOTAL	3.39	2.75	2.45	2.45	. .	. .	. .	. .
Active measures (1-5; for inflows, 2-5)	1.77	1.37	1.38	1.40	8.70	7.33	6.22	6.05
Passive measures (6 and 7)	1.62	1.37	1.07	1.05	. .	. .	. .	. .

Note: . . Data not available; – Nil or negligible.

1. Participant inflows for category 5 “Measures for the disabled” are not included.

Source: OECD Database on Labour Market Programmes.

at the time of the evaluation, it was still unclear how many workers would take advantage of the wage insurance provision. Some state officials and employers found it problematic that, to be eligible for the wage insurance programme, workers must lack easily transferable skills yet find reemployment within 26 weeks of layoff.

There are several programmes for the disabled. The Supplemental Security Income (SSI) programme gives benefits to disabled individuals based on need and is means-tested. It is federally administered, but most states supplement it. The Disability Insurance portion of the Social Security system provides benefits based on prior earnings history and is not means-tested. Benefit levels are adjusted for receipt of multiple benefits. Moreover, SSI benefits are adjusted for earned income, and DI benefits are denied to those who are engaged in substantial gainful work. Thus, there are significant disincentives to work. In addition, vocational rehabilitation is essentially voluntary and available only after a relatively long period of sickness. There have been repeated government efforts to encourage employment among the disabled. Attempts in the 1980s to tighten access to disability benefits and increase control through the greater use of continuing disability reviews largely failed and led to a backlash in the middle of the decade. Another disincentive to engage in work is related to the fact that entitlement to free health care is coupled with a disability claim through Medicare and Medicaid. To reduce benefit dependence, 1999 saw the introduction of Medicare coverage of those who return to work and of incentives for Medicare buy-in for those permanently off benefits, measures mainly aimed at recipients of disability insurance benefits (OECD, 2003).

Some policy adjustments have also been made with respect to immigration. Historically, the United States has had a generally “open door” policy toward immigration, notwithstanding repeated periods of restriction (OECD, 1997). The Immigration Act of 1965, which provides the framework for current immigration policy, abolished national-origin quotas and based policy largely on “family reunification”. Indeed, although the Immigration Act of 1990 increased the cap on employment-based “green cards”, the latter typically make up fewer than 15% of residence permits issued, and about half of these are for accompanying family members. Employment-based green card issuances are significantly below their ceilings, partly due to background and security checks and partly due to cumbersome requirements regarding the labour certification process requiring a firm to undergo an extensive, government-supervised search for US workers before the petition to hire a foreign-born worker an be approved (Council of Economic Advisers, 2005). To address these problems, in 2002 the Administration proposed to move to a streamlined application process, and accordingly new rules were published at the end of 2004. The delays and costs associated with processing for employment-based permanent residency has prompted employers to make greater use of temporary worker visas. However, in 2004, the government ran out of visas for skilled personnel seven months before the end of the fiscal year, and the situation seems to have improved little, despite recent legislation providing additional visas to foreign students graduating from US universities. With a view to curbing illegal immigration, the Administration’s Temporary Worker Program (TWP) proposed at the beginning of 2004 would give temporary visas (for up to six years) to foreign workers who fill jobs for which employers can show they are unable to hire Americans. People already working in the United States illegally would be allowed to join the programme for a fee. The programme would also offer incentives for workers to return home.

Scope for action

While the United States appears to have the best labour-market adjustment capacity in the OECD (Kongsrud and Wanner, 2005; see Chapter 4) and policy in this area has been quite efficient and innovative, there is obviously room for improvement. A number of concerns have been raised regarding the way the performance of labour-market programmes is measured and monitored. In response to some evidence that local operators (that is, employment services at the state level) may be "gaming" the system in order to improve their recorded performance, in December 2003 the Department of Labor issued guidelines to states and grantees concerning performance measures and the definition of programme participation and exit. It is important that the Department closely monitor whether these guidelines are being respected. In the field of trade adjustment assistance, the new alternative programme provides wage insurance but limits this option to older workers. If the net impact of this programme proves to be positive, there may be a case for extending the coverage to other groups, although some targeting would probably be necessary to limit the amount of deadweight loss. Moreover, the restrictive interpretation of eligibility criteria for traditional trade adjustment assistance, which *de facto* excludes service-sector workers, needs to be reconsidered at a time when offshoring is receiving such intense attention. Given the importance of educational achievement for labour-market outcomes, the observation that higher school enrolment, which is a factor behind the decline in labour-force participation, has not translated into improved high school completion rates needs to be addressed (see Chapters 3 and 4). As

Box 5.1. **Policy recommendations regarding the labour market**

- Closely monitor whether the new guidelines for labour market programmes are being followed and are sufficient to eliminate "gaming" in the way enrolments and exits are recorded.
- Carefully evaluate and, if experience is positive, expand trade adjustment assistance programmes (including wage insurance and health care support) to include younger and service-sector workers, if not all dislocated workers, regardless of the cause of dislocation.
- Take measures to ensure that rising school enrolment translates into higher educational attainment, especially for young males, by speeding up and closely monitoring the implementation of the outcome-oriented No Child Left Behind Act and making sure that it is adequately funded.
- Reduce work disincentives for the disabled that result from restrictions in, and inconsistencies between, various government programmes by tightening access to disability benefits, reducing the system's generosity (*e.g.* through changes to benefit indexation) and making greater efforts at vocational rehabilitation (which is essentially voluntary). Increase spending on employment programmes for the disabled, which is extremely low by international comparison, while ensuring that the ensuing benefits exceed the costs.
- Facilitate immigration of high-skilled workers while curbing illegal entry of low-skilled foreigners in order to improve the job opportunities of native youth and lower the fiscal burden associated with immigration. Make sure that recent reforms aimed at streamlining the administrative process reduce the huge backlog in employment-based applications.

noted, another factor contributing to weak labour-force participation has been a tendency for workers to take up disability rather than unemployment benefits. While the United States in general does not spend much on active measures, though possibly getting better value for money, one field where more efforts are clearly desirable is the integration of the disabled in the labour market. At the same time, the disability benefit system needs to be reformed to reduce inherent work disincentives: the New Zealand example – in which all are expected to work if at all possible – is instructive. Finally, progress is urgently needed in overhauling immigration policy. The benefits of immigration could be increased considerably by concentrating it among workers whose skills are scarce and speeding up employment-based applications.

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ANNEX 5.A1

Private sector estimates of offshoring and its potential effects

Source	Scope and methodology	Findings
Deloitte Research[1]	Scope: Global and US financial services industry and employment.	In the financial service sector, 850 000 jobs may move offshore (15% of industry employment).
	Methodology: Surveys major financial services firms and applies estimates of the value of planned offshoring to industry costs and employment. Uses an estimate of US financial services labour based on the industry size in Germany.	
Forrester Research[2]	Scope: Examines 18 different occupational categories in the services sector of the US economy.	Across all services occupations, 3.3 million jobs are projected to move offshore by 2015, about 600 000 jobs may be offshored by 2005.
	Methodology: Ranks each occupation by four factors related to offshoring, then applies a growing percentage share of jobs offshored (depending on the rank) for 2000, 2005, 2010 and 2015. Employment is based on 2000.	
Gartner, Inc.[3]	Scope: IT industry and employment (IT vendors, IT services providers and IT jobs within non-IT enterprises).	By the end of 2004, 500 000 IT jobs may be displaced. One out of every 10 jobs within US-based IT vendors and IT service providers may move to emerging markets, as may 1 of every 20 IT jobs within user enterprises (non-IT companies that employ IT workers).
	Methodology: Bases estimated on professional discussions with IT suppliers and purchasers about their offshoring plans and knowledge of industry. Uses information Technology Association of America estimate of 10.3 million IT practitioners in the United States in2003 as the employment base.	
Goldman Sachs[4]	Scope: Examines both services and manufacturing industry offshoring.	Estimates that US producers have cumulatively moved fewer than 200 000 jobs to overseas affiliates but could increase the number of jobs overseas to a few hundred thousand per year over the next 2 to 3 years. Up to six million jobs could be affected by offshoring over the next decade.
	Methodology: For services occupations, bases estimates of offshoring on two approaches: 1) estimated the share of jobs that could be relocated abroad on a sector-by-sector basis, based on conversations with industry experts and 2) estimated the share of each occupation that could be offshored.	

Source	Scope and methodology	Findings
Global Insight, Inc.[5]	Scope: Examines offshoring in IT sector only (software and other IT services), but estimates economy-wide effects.	About 104 000 of the 372 000 IT jobs were lost from 2000 to 2003 owing to offshoring (or 2.8% of total core IT jobs in 2000). After initial higher unemployment (2000 to 2002) primarily due to displaced IT jobs, net employment rebounded with jobs being created in both the IT sector (though more slowly than if there were no offshoring) and in other sectors of the economy. Other effects include higher real earnings (due to lower inflation and higher productivity), increased spending on IT (diffusion through the economy), higher gross domestic product, and increased exports.
	Methodology: Forecasts 2004 to 2008 based on an assumed 40% savings to baseline cost associated with IT software and service offshore outsourcing. Model forecasts the economy with offshore outsourcing and without to compare the impact on key variables.	
McKinsey Consulting[6]	Scope: Focuses on IT and Business Process Offshoring (BPO) costs.	Of the $1.45 to $1.47 of value created globally by offshoring $1.00 of US labour costs, the United States captures $1.12 to $1.14, while receiving countries capture about $0.33. This effect is due to new revenue (US exports), repatriated earnings, and redeployed labour.
	Methodology: Case study of BPO in India. Estimates costs and cost savings for steps in are-engineered business process. Case study may not be representative of other offshoring cases.	

1. Deloitte Research, "The Cusp of a Revolution: How Offshoring Will Transform the Financial Services Industry", (2003).
2. Forrester Research, "3.3 Million US Services Jobs to Go Offshore", by John McCarthy (11 November 2002).
3. Gartner, "US Offshore Outsourcing: Structural Changes, Big Impact", by Diane Moretto (15 July, 2003).
4. Goldman Sachs, "Offshoring: Where Have All The Jobs Gone?" (19 September 2003).
5. Global Insight, "The Impact of Offshore IT Software and Services Outsourcing on the US Economy and the IT Industry" (March 2004).
6. McKinsey Consulting, "Offshoring: Is it a Win-Win Game?" (August 2003).

Source: United States Government Accountability Office (2004).

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Chapter 6

Energy and environmental issues

This chapter discusses developments in the energy and environmental areas, which are closely linked, as well as related policies. After a decade of relative calm, energy markets have been subject to considerable strain. The associated sharp rise in prices has focused attention again on reforms long needed in this sector. Although energy intensity in the United States has been declining, it is significantly higher than in the OECD as a whole, partly reflecting internationally low energy taxes. The latter are also a factor behind high, albeit declining, per capita emission levels. Supply incentives are still biased against renewable forms of energy whose share is very low. And major blackouts have highlighted the need for improving the reliability of the country's electricity grid, an issue addressed in the recently passed energy bill.

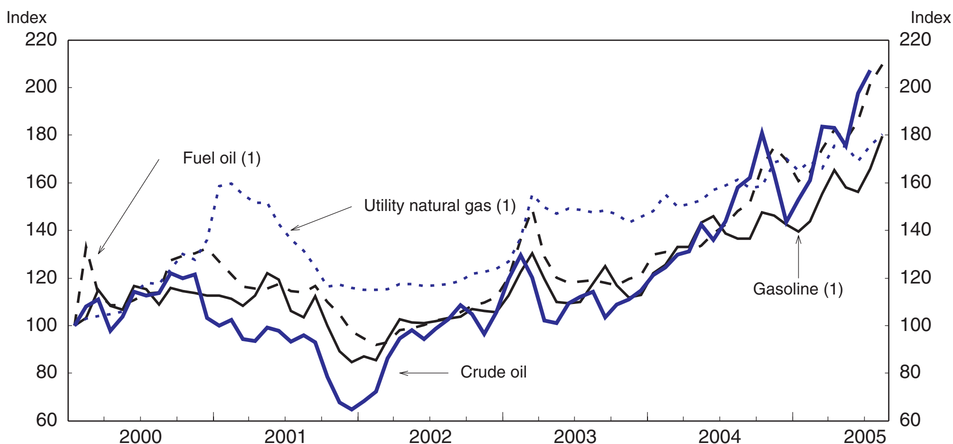
Energy

The evolution of energy markets

Following a period of broad stability through most of the 1990s, energy prices have risen dramatically, boosted by developments in global crude oil markets, with the 2001 recession providing only temporary respite (Figure 6.1). Markets have been subject to a degree of strain not experienced for a generation, as increased demand and lagging additions to productive capacity have combined to eliminate the slack that had helped contain energy prices before their recent spurt. Since 2003, the rise in the value of imported oil alone has amounted to around 1% of GDP. Although energy price movements are largely determined by international developments, domestic influences also play a role (and have international repercussions because of the size of the United States). Falling demand for petroleum and deregulation of the domestic refining industry in the 1980s, as well as divestitures imposed by the competition authorities, led to a marked decline in US refining capacity. The latter is still 8% below its previous peak, despite some additions to existing facilities since the mid-1990s, with refineries typically operating at annual utilisation rates of more than 90% (Federal Trade Commission, 2004). As a result, the United States has had to buy about 5% of its refined fuel from other countries. Accordingly, refining margins have surged (temporarily reaching record levels of nearly $20 per barrel, according to Verleger, 2005). In addition, the operations of, and output produced by, refineries have become subject to extensive environmental regulations at the federal and state levels, which have balkanised the market for gasoline in particular. Apart from their direct effect on costs, these regulations have also raised prices because many foreign refiners cannot comply with them. Most recently, supply shortages of crude oil, natural gas and, especially,

Figure 6.1. **Energy prices**

Index, seasonally adjusted, January 2000 = 100



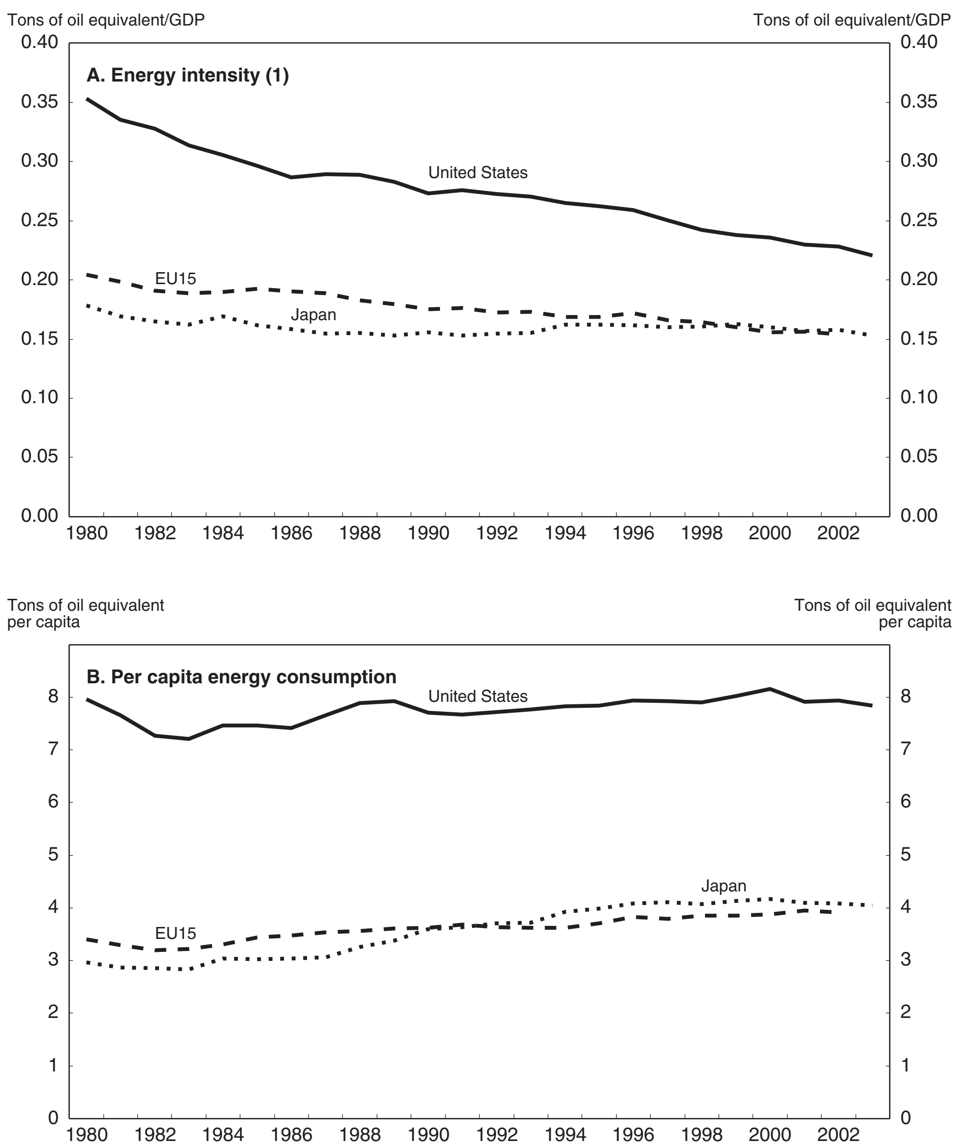
1. Consumer price index.

Source: Bureau of Labor Statistics.

refined products associated with major hurricanes have put significant upward pressure on refining margins and energy prices more generally (see Chapter 1).

Energy intensity, as measured by energy use relative to GDP, has been on a downward trend, as in the majority of member countries. By contrast, and again as generally abroad, per capita energy consumption has tended to drift upwards, with some fluctuations in response to movements in energy prices and economic growth. However, relative to GDP and in particular in per capita terms, energy expenditures in the United States are much higher than in the other major OECD regions (Figure 6.2). Primary energy supply is dominated by fossil fuels, with oil and gas accounting for about two-thirds and coal for

Figure 6.2. **Energy intensity and consumption**



1. Total energy consumption per unit of GDP, tons of oil equivalent, $2 000, 2000 purchasing power parities.
Source: Environment database and OECD Annual National Accounts.

most of the rest. Renewable sources of energy remain relatively insignificant, and their share is lower than in the mid-1990s. The contribution of imports, principally oil but also gas, is approaching one-third of energy supply, and for oil alone the import share has exceeded two-thirds with a lack of refinery capacity entailing growing imports of products of late. Energy exports have been limited and have stagnated since the beginning of the 1980s. With imports surpassing exports as early as in the 1950s, the share of *net* imports in total energy supply has steadily increased to more than one quarter. Transportation is a major energy consumer, accounting for the bulk of petroleum use and more than one-quarter of overall energy use. The more than 200 million light vehicles on US roads consume 11% of total world oil production. Public transportation represents only around 1% of total passenger miles compared to around 10% in Europe and roughly 7% in Canada (Shapiro *et al.*, 2002). It consumes only half the fuel of private vehicles (and emits far less carbon and other pollutants).

Electricity has been the fastest growing source of delivered energy and represents two-fifths of total energy use. Coal accounts for more than half of electricity generation, nuclear power and gas for the bulk of the remainder. As electricity demand continues to grow – though probably at a somewhat slower rate in the future (Energy Information Administration, 2005) – and some generating facilities are being retired, there will be substantial needs for new generating capacity, as well as associated transmission and distribution infrastructure. Some 1300 additional power plants of about 300 MW in size are expected to be required over the next two decades (International Energy Agency, 2002). At the same time, the construction of new transmission facilities, which has declined by 30% since 1990 despite growing demand for transmission capacity, needs to be stepped up urgently. Indeed, the quality of electricity supply in terms of interruptions and voltage fluctuations is only average by international comparison (Figure 6.3), and major blackouts have highlighted the need for remedial action (Box 6.1).

The transformation of the US electricity sector from one built upon regulated vertically integrated local monopolies owning and controlling generation, transmission and distribution assets to one that features efficient wholesale and retail competition has been a significant challenge, with transmission policies that would support this process complicated by a number of institutional and political factors. As discussed in some detail in the special chapter of the previous *Survey*, while the restructuring of wholesale markets has made some progress, retail-sector deregulation has stalled following the California debacle, which brought about price spikes, rolling blackouts and financial difficulties for the state's largest utilities at the beginning of the decade. According to the latest information, only 17 states and the District of Columbia have competitive retail markets in operation, some having suspended or repealed retail restructuring. The combination of small vertically integrated utilities combined with state regulation has had the effect of limiting investments in transmission capacity that would have created linkages between generating facilities that are dispersed over large geographic areas (Joskow, 2004). As the current mix of regulations facilitates the use of transmission capacity, while effectively discouraging construction of new facilities, there is a need for reviewing incentives and co-ordinating regulations governing the interstate transmission grid (Council of Economic Advisers, 2004).

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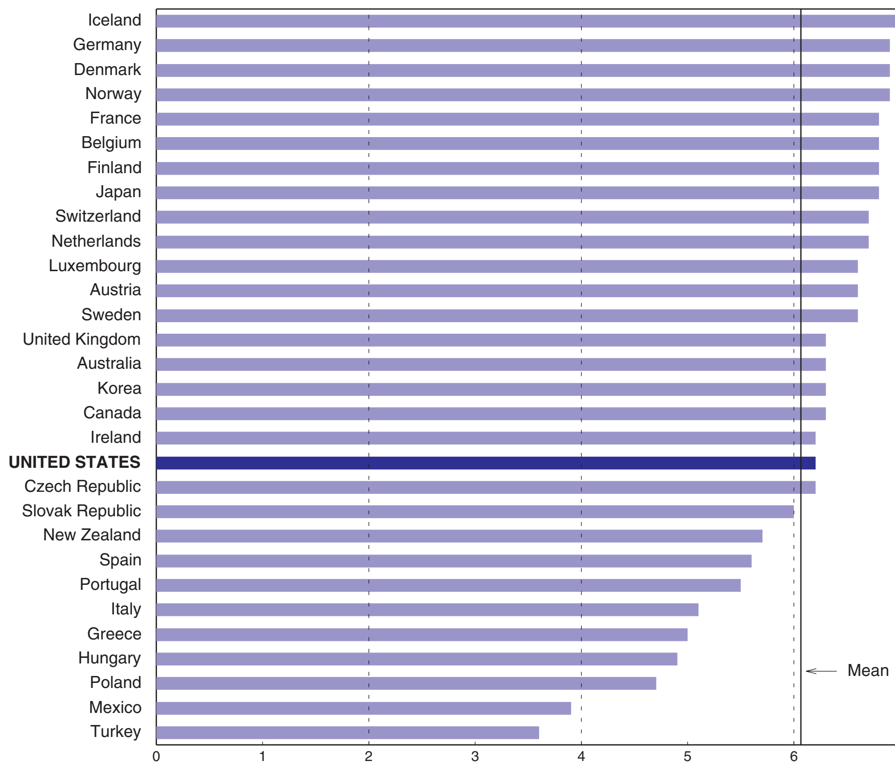
Figure 6.3. **Quality of electricity supply**[1]



1. The quality of electricity supply (in terms of lack of interruptions and lack of voltage fluctuations) is 1 = worse than in most other countries, 7 = equal to the highest in the world.

Source: Global Competitiveness Report, 2004-2005, World Economic Forum.

Policies

Shortly after taking office, the new Administration issued a report outlining its National Energy Policy, which focused on the need to expand domestic production (with a view to increasing energy security) and to improve transmission infrastructure (US Government, 2001). The plan pledged to ease the regulatory climate facing energy producers, including environmental protection rules, and to provide tax credits and research support for a variety of energy-related projects. It also proposed expanding the use of nuclear power in the United States and funding research on reprocessing spent nuclear fuel and for the development of cleaner burning coal technologies. At the same time, federal agencies were directed to expedite permits for energy projects and to take account of any adverse effects on energy supply when introducing new rules or regulations. The President also ordered the Strategic Petroleum Reserve (SPR) to be filled to approximately 700 million barrels (about 95% of storage capacity). This goal was reached this summer, although subsequently there was a drawdown related to Hurricane Katrina. However, while in 1985 the SPR provided import protection for almost four months, it currently covers only just under two months of oil imports. More recently, the Environmental Protection Agency (EPA) has been directed to simplify existing regulations so that oil refineries can more easily expand their capacity. In the original National Energy Policy, comparatively limited attention was placed on curtailing energy demand to reduce reliance on foreign sources, for instance through taxation, although the plan included

Box 6.1. **The 2003 blackout in the Northeast**

On 14 August 2003, large portions of the Northeast and Midwest of the United States and the province of Ontario in Canada experienced an electric power blackout. The outage affected an area with an estimated population of 50 million people. Power was not restored for 4 days in parts of the United States, and parts of Ontario suffered rolling blackouts for more than a week before full power was restored. Estimates of the event's total costs in the United States are in a range of $4 billion to $10 billion. The blackout was the most important since 1965 when an outage in the Northeast affected 30 million people for 13 hours. An investigation commissioned by the US and Canadian governments found that the 2003 blackout was caused by deficiencies in practices, equipment and human decisions by various organisations (US-Canada Power System Outage Task Force, 2004). The utility in Ohio where the problem started was operating on the very edge of reliability standards, leaving little reactive margin, and, in any case, its operators were not adequately trained or prepared to recognise and deal with emergency situations. At the same time, the organisations responsible for the interconnected grid's reliability failed to provide effective diagnostic support, lacking an effective way to identify the location and significance of transmission problems. According to the investigation, the 2003 blackout had several factors in common with earlier ones: inadequate vegetation management (leading to tree-line contact); failure to ensure operation within secure limits; failure to identify emergency conditions and communicate that status to neighbouring systems; inadequate operator training; and inadequate coordination of protective devices or systems. New causal features identified include: inadequate interregional visibility over the power system; dysfunction of the area's supervisory control and data acquisition as well as energy management systems; and a lack of adequate backup capability.

The intergovernmental Task Force made numerous recommendations, and remedial actions to correct the direct causes of the 2003 blackout have already been taken. However, some recommendations required legislative measures, in particular those aimed at strengthening regulation and supervision. More specifically, the Task Force considered that reliability standards should be made mandatory and enforceable, with penalties for non-compliance, and that the independence of reliability organisations from parties they oversee should be ensured. Moreover, it drew attention to changing market conditions that affect system liability. As evidenced by the absence of major transmission expansion projects undertaken over the past 15 years, utilities have found ways to increase the utilisation of existing facilities to meet increasing demand without adding significant high-voltage equipment. As a result, the system is being operated closer to the edge of reliability than it used to be. Thus, without major investments, it is likely to remain vulnerable to cascading outages. The Energy Policy Act of August 2005 includes provisions to strengthen electric transmission system reliability through the establishment of an Electric Reliability Organisation to develop and enforce mandatory reliability standards; establishes Federal siting authority for transmission lines deemed in the "national interest" to ensure a better functioning of the power grid; and promotes development of transmission infrastructure by offering tax incentives for new construction and repealing rules that have discouraged investments.

income tax credits for the purchase of vehicles with hybrid engines or fuel cells and fuel economy standards for light trucks have been tightened recently (see below). No change in support for public transportation has been advocated, despite the fuel savings and emissions reductions that would ensue.

Legislation to implement the Administration's energy policy – the Energy Policy Act of 2005 – was passed only last August, although some of the proposed measures had been adopted separately (for instance, loan guarantees and tax advantages for the Alaska natural gas pipeline and tax incentives for both oil and gas production and renewable energy use). Sticking points that complicated the adoption of the energy bill included the proposed repeal of the 1935 Public Utility Holding Company Act (PUHCA). The Act was originally aimed at breaking up the trusts that controlled electric (and gas) distribution networks. A number of changes subsequently modified PUHCA, notably the 1992 Energy Policy Act, which allowed the construction, ownership and operation of power plants for wholesale power sales of electricity in more than one geographic area and required utilities to provide transmission services to wholesale generators. Nonetheless, PUHCA remained a barrier to competitive entry, since many utilities that supply a large share of electricity to retail customers are still vertically integrated. The issue was how to strengthen oversight in order to prevent abuses – such as cross-subsidisation of competitive functions (generation and supply) by regulated functions (transmission and distribution) – without unnecessarily obstructing market forces and impeding investment. The voted Act resolved this problem by strengthening the ability of the Federal Energy Regulatory Commission (FERC) to address market abuses. Another pending measure was the introduction of mandatory reliability standards, an issue that had gained considerable immediacy in the wake of the 2003 blackout. With independent power producers now accounting for two-fifths of total electricity generated, there may be growing pressures to "cut corners" to gain a price advantage, and voluntary compliance rules are probably no longer sufficient. It was therefore important to establish the jurisdiction of the FERC for all reliability matters over all participants in bulk power systems, develop sound reliability standards and make compliance with them mandatory and enforceable by law, although the challenge again was to prevent regulation from jeopardising the benefits of increased competition.

These were by no means the only controversial issues. Most prominent were the arguments about permitting drilling in Alaska's Arctic National Wildlife Refuge and protecting producers of fuel additives from defective-product lawsuits. These provisions were finally dropped to ensure the passage of the Act. Moreover, the energy legislation has been criticised for adding to the already generous subsidisation of the energy sector and for not being sufficiently focused. A review of the around 75 existing programmes and tax breaks suggests that annual federal support to the energy sector in 2003 was already worth between $37 and $64 billion (Koplow, 2004). Official estimates are lower, as they are based on a narrower definition of support, but none of the estimates takes into account external costs. A considerable margin of error notwithstanding, the Energy Policy Act would seem to imply that subsidisation of the energy sector could double if all programmes authorised by the Act are fully funded. Given the dominance of traditional sources of energy in total supply, it is not surprising that they benefit most. To be sure, the Act provides for $3.2 billion in support for energy production that uses renewable resources through 2015 by extending the existing tax credit for electricity produced through wind, biomass and landfill gas and creating a tax credit for residential solar energy systems. But this compares with total support of $14.6 billion, and it remains to be seen whether incentives for

renewable forms of energy – which avoid the atmospheric externalities of fossil fuels – will be sufficient to reverse the decline in their share. As in other areas, it is also necessary to ensure that support is not environmentally harmful: for example the considerable expansion of the definition of renewables to include dirty fuels such as landfill gas would imply subsidising landfilling at the expense of recycling. Moreover, it is questionable whether imposing the addition of ethanol to gasoline – on top of the already existing tax incentives – will have net positive effects (with respect both to the environment and energy security), given the considerable amounts of petroleum needed to produce ethanol from corn or other agricultural products. The energy bill in the end did not include a "renewable portfolio standard" as already exists in 18 states (one amendment aimed to mandate 10% of electricity be generated from renewable energy sources by 2020). Tax breaks for energy efficiency and conservation are expected to total $2.7 billion through 2015, and the Act establishes new efficiency standards for a wide variety of consumer products and commercial appliances. Development of new technologies is supported by high levels of funding for research and development, in line with the priorities set out in the National Energy Policy. Advanced fuels and engine designs are seen as a means of improving efficiency of energy use and of reducing emissions. Deployment of new technologies will be difficult, however, in the absence of market incentives to put a value on carbon emissions (International Energy Agency, 2002).

Most recently, the serious consequences of the two hurricanes that hit the Gulf coast seem to have revived legislative activity in a number of directions. Besides new calls for further strengthening of vehicle fuel efficiency standards, for permission to be granted to states to waive federal moratoriums on offshore exploration for oil and natural gas, and for opening the Arctic National Wildlife Refuge to such drilling, there have been less helpful proposals to tax suppliers' "excess" profits. Stimulating refinery construction by siting them on closed military bases (as allowed by the Energy Policy Act) and exempting them from some Clean Air Act provisions have also been advocated.

Environmental aspects

Performance indicators

Environmental quality in the United States has continued to improve. This is most visible in the case of air pollution, which has remained largely decoupled from economic growth. Since 1970, while real GDP has nearly tripled, total emissions of the six principle – "criteria" – air pollutants have fallen by more than half (Table 6.1). The most impressive achievement has been the near elimination of lead emissions. The only air pollutant whose emissions seem to have stopped falling in recent years is particulate matter. Despite these positive results overall, air pollution intensities (both relative to GDP and per capita) are still quite high compared to those of other OECD countries, where they have also rather tended to decline (Figure 6.4). In the United States, emissions of mercury and particulates from old coal-fired power stations and of ozone precursors from motor vehicles contribute to persistent regional pollution problems such as smog and haze (OECD, 2005), highlighting the importance of recent policy measures in this area (see below).

Fuel efficiency has been stable for a decade as the weight and power of the vehicle fleet has significantly increased, outweighing the benefits of more efficient combustion technologies. Emissions of carbon dioxide from energy use, which account for the bulk of greenhouse gas (GHG) emissions, have closely tracked population growth but fallen short

Table 6.1. **National air pollutant emissions estimates**

	Millions of tons per year							
	1970	1975	1980	1985[1]	1990	1995	2000[1]	2004[2]
Carbon monoxide (CO)	197.3	184.0	177.8	169.6	143.6	120.0	102.4	87.2
Nitrogen Oxides (NO_x)[3]	26.9	26.4	27.1	25.8	25.2	24.7	22.3	18.8
Particulate matter (PM)[4]								
PM10	12.2[1]	7.0	6.2	3.6	3.2	3.1	2.3	2.5
PM2.5[5]	n.a.	n.a.	n.a.	n.a.	2.3	2.2	1.8	1.9
Sulfur dioxide (SO_2)	31.2	28.0	25.9	23.3	23.1	18.6	16.3	15.2
Volatile organic compounds (VOC)	33.7	30.2	30.1	26.9	23.1	21.6	16.9	15.0
Lead[6]	0.221	0.160	0.074	0.022	0.005	0.004	0.003	0.003
Totals[7]	301.5	275.8	267.2	249.2	218.2	188.0	160.2	138.7

1. In 1985 and 1996 EPA refined its methods for estimating emissions. Between 1970 and 1975, EPA revised its methods for estimating particulate matter emissions.
2. The estimates for 2004 are preliminary.
3. NO_x estimates prior to 1990 include emissions from fires. Fires would represent a small percentage of the NO_x emissions.
4. PM estimates do not include condensable PM, or the majority of PM2.5 that is formed in the atmosphere from "precursor" gases such as SO_2 and NO_x.
5. EPA did not estimate PM2.5 emissions prior to 1990.
6. The 1999 estimate for lead is used to represent 2000 and 2003 because lead estimates do not exist for these years.
7. PM2.5 emissions are not added when calculating the total because they are included in the PM10 estimate.

Source: Environmental Protection Agency.

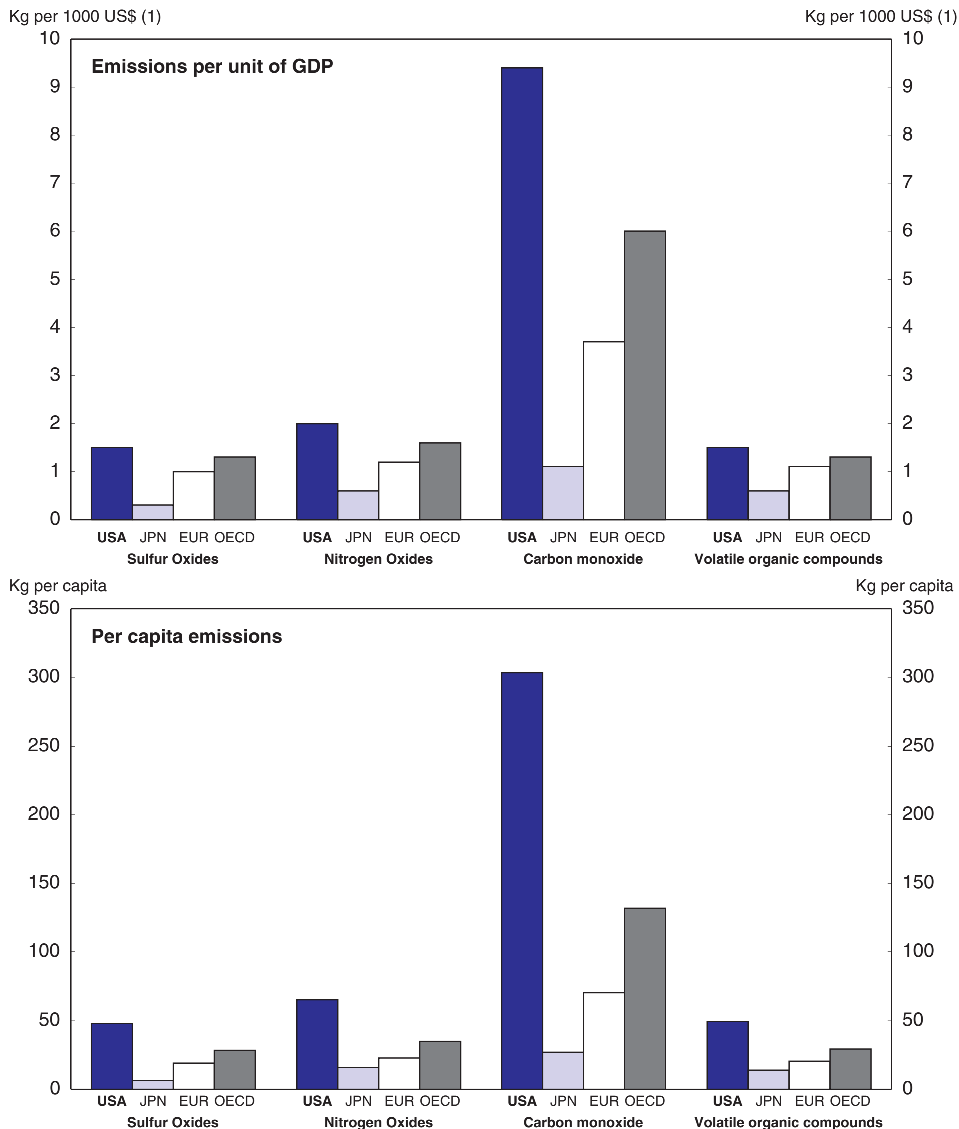
of GDP growth. The resulting decline in emission intensity has been comparable to the rate of change in other OECD countries. However, given faster economic growth than abroad, the rise in GHG emissions in the United States has outpaced that in the rest of the OECD. Moreover, not only do GHG emissions in the United States exceed those in other member countries, but they also remain among the highest in terms of both per capita and per unit of GDP (Figure 6.5). The average US vehicle produces almost twice as much carbon dioxide emissions as is the case in most other countries due both to lower average vehicle fuel economy and higher average vehicle travel. The transport sector currently accounts for one third of national carbon dioxide emissions, and this share is projected to approach one half by 2020, absent a change in policy. Fuel consumption could be slowed significantly by adjusting price signals to take account of environmental externalities related to private vehicle use (or by other policies that would promote the application of new technologies toward fuel economy rather than weight and power). US fuel prices are much lower than those in other OECD countries, and raising energy taxes would have a powerful effect on energy consumption and emissions of pollutants, especially carbon dioxide (Box 6.2). So would a shift from private to public transportation. In any case, the belief that there is a trade-off between road safety and fuel economy has been somewhat discredited, as recent research shows that design and quality can largely offset the risks resulting from low vehicle weight.

Policies

The decoupling of environmental pressures from economic growth owes a lot to policies pursued in this area since the 1970s (OECD, 2000). The successes have not come cheaply – the country is spending in the neighbourhood of 2% of GDP to meet the environmental standards it has set (Morgenstern and Portney, 2004) – but seem to have been worth the effort. According to a range of studies, in the aggregate, the benefits of

Figure 6.4. **Total emissions of traditional air pollutants**

2000



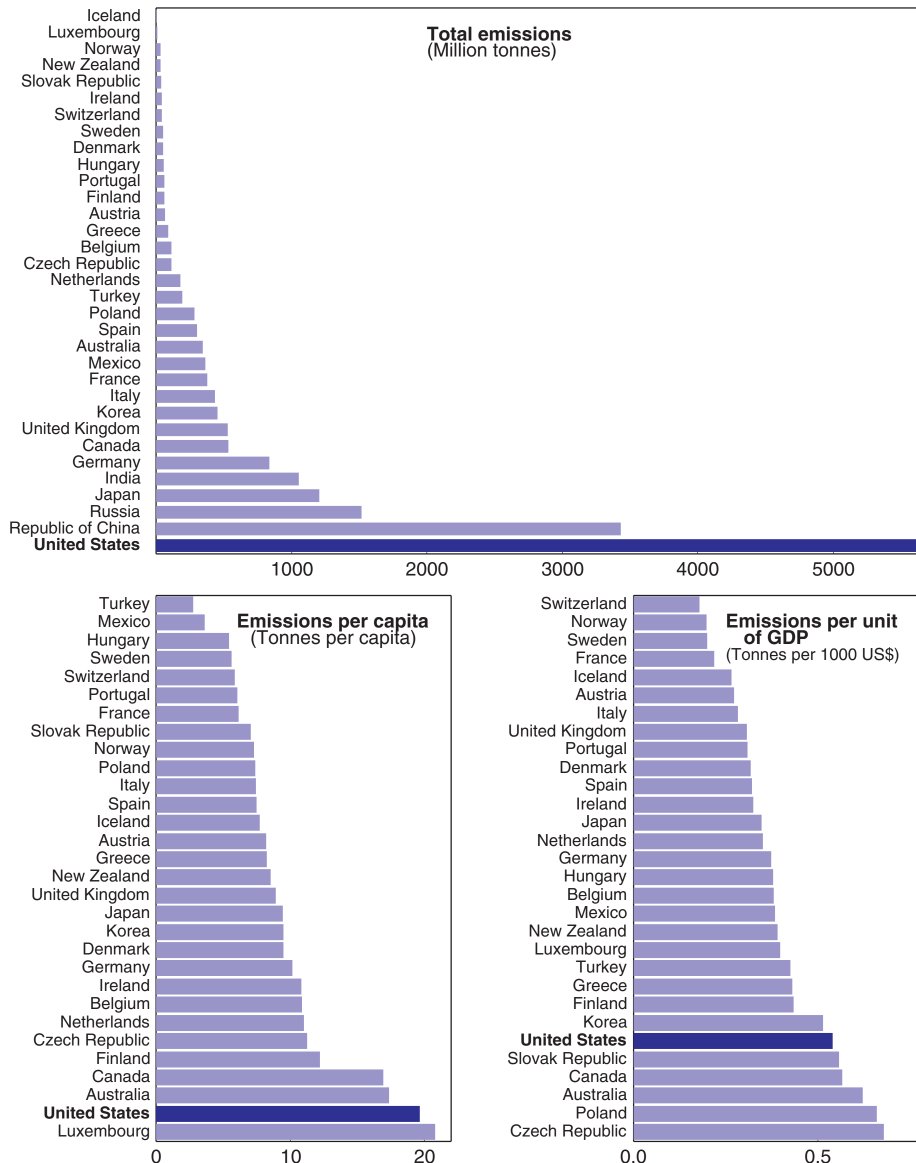
1. GDP at 1995 prices and purchasing power parities.

Source: OECD Environmental Data 2004.

US air management policies appear to clearly exceed costs. Nonetheless, the question arises whether it is possible to get better value for the money. Traditionally, the United States' approach to environmental management has strongly relied on command-and-control regulations (such as for achieving improved vehicle fuel economy so as to reduce emissions of air pollutants). In practice, as instructed by law, the EPA sets national standards at levels deemed necessary to protect public health; to achieve these standards, EPA and other territorial authorities seek to select policy measures that optimise the cost-effectiveness of implementation (OECD, 2005). Although in recent years increasing priority has been attached to using more flexible instruments for implementing environmental

Figure 6.5. **Carbon dioxide emissions from energy use**

2002



Source: International Energy Agency, CO_2 emissions from fuel combustion database and OECD Economic Outlook 77 database.

policies in order to reduce regulatory and compliance costs, environmental regulations in the United States are still perceived to be at least as stringent as those prevailing on average in the OECD area (Figure 6.6). While strict regulations may appear to be good for society, there is evidence that command-and-control regulations tend to be less cost-efficient than other forms of control (Council of Economic Advisers, 2004). Cap-and-trade schemes, which "cap" the amount of allowable emissions and allow firms to trade emissions permits under the cap, have in several cases been found to yield substantial cost savings (Table 6.2). The United States has been a pioneer in developing and applying systems of tradable permits (see below). Still, the use of economic instruments to apply the

Box 6.2. **Why are US per capita emissions of carbon dioxide from energy use so high?**

From Figure 6.5 it can be seen that emissions of carbon dioxide from energy use per capita vary substantially across OECD member countries. The United States emits more than any other OECD country, in large part because it has the highest population. But it also emits more per person than any other OECD country except Luxembourg, 127% more than the median country (New Zealand). In order to gauge how important are the various fundamental determinants of emissions in tonnes (EMISSIONS) in explaining their pattern across OECD countries, a fairly simple regression model was employed. The explanatory factors used were deemed to comprise: population (POP), per capita GDP (GDPPC), population density (DENSITY), the share of hydro and nuclear in total energy supply (H2ONUKE) and the level of energy taxes (TAX). The model to be estimated was therefore:

$$\ln(\text{EMISSIONS}) = \alpha + \beta^{*}\ln(\text{POP}) + \eta^{*}\ln(\text{GDPPC}) + \delta^{*}\ln(\text{DENSITY}) + \theta^{*}\,\text{TAX} + ø^{*}\ln(\text{H2ONUKE}) + \varepsilon$$

where ln is the natural logarithm and μ is an error term, which is assumed to be of a normal distribution. GDP was measured using purchasing power parity exchange rates. The proxy used for energy tax rates was the amount of tax levied on unleaded gasoline; since it is therefore measured with error, one might surmise that its estimated coefficient would be biased towards zero, and potential endogeneity problems could render a structural interpretation inappropriate. Positive values were expected for β and η while δ, θ and ø were expected to be negative. Initial estimation for 29 OECD countries (Iceland was omitted because it is not a member of the International Energy Agency and thus the energy tax figure was missing) showed that δ was not significantly different from zero and that β was not significantly different from unity (it was 0.99). Thus, the equation was re-specified to impose the unit constraint, transforming the equation into per capita terms. In that form the results were:

$$\ln(\text{EMISSIONS/POP}) = -4.92 + 0.749^{*}\ln(\text{GDPPC}) - 0.541^{*}\text{TAX} - 0.042\ln(\text{H2ONUKE})$$

(3.89) (5.82) (2.64) (1.46)

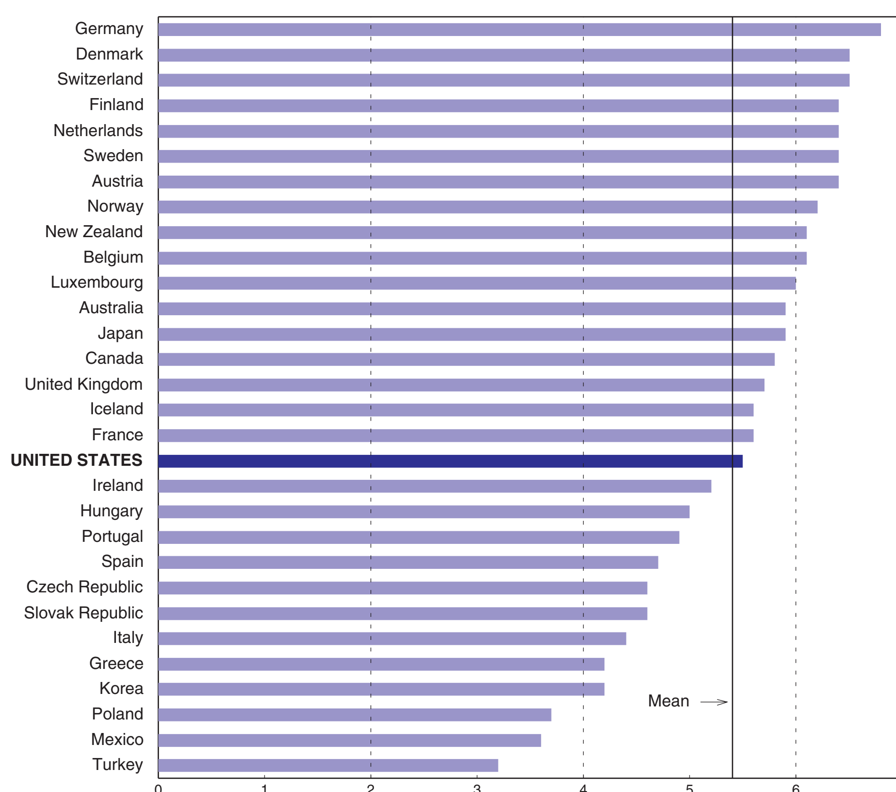
RSQ = 0.620 RBSQ = 0.575 SEE/MEAN = 13.636%

All coefficients are of the expected sign and significantly different from zero, except H2ONUKE, whose significance is marginal at best.

For the United States the equation predicts emissions per capita of 16.28 tonnes, 17% less than the actual level in 2002 of 19.61 tonnes. The GDPPC term is clearly important. If the United States had the income level of the median country (Finland), *i.e.* 23.3% less than its actual level, then its predicted emissions would be reduced by 19.8%. On the other hand, the share of hydro and nuclear energy in total energy supply in the United States is only slightly below that of the median country (New Zealand), and therefore that factor "explains" only 0.6% of the greater-than-average per capita emissions in the United States. Hence, there remains a substantial share of the extra amount of emissions that is left to the tax variable.

Indeed, if the United States were to raise its energy tax rate, it might have a powerful effect. For example, if it charged the tax rate used by the median member country – Ireland – ($0.752 per litre, rather than the actual $0.103), the equation results imply – admittedly tentatively – that such a policy might cut annual emissions by around 1.44 billion tonnes or by 5 tonnes per capita per year. This is more than 25% of current emissions and equals the total emissions of France, Italy, Belgium and the United Kingdom combined.

Figure 6.6. **Stringency of environmental regulations**[1]



1. Stringency in environmental regulations is 1 = lax compared with most countries, 7 = among the world's most stringent.

Source: *Global Competitiveness Report, 2004-2005*, World Economic Forum.

user-pays and polluter-pays principles remains limited, with the result that market signals often do not encourage environmentally friendly production and consumption choices. Moreover, the recent emphasis on voluntary initiatives raises a number of issues regarding transparency, stakeholder involvement and effectiveness, which will need to be addressed to justify their increasing prominence in the policy package. Voluntary measures are an important component of the instrument mix, but they should not be chosen over regulations or economic instruments when these would be more cost-effective. In view of the often disappointing experience with voluntary approaches, environmental performance reviews have recommended moving away from them (OECD, 2004). And a comparison of voluntary approaches and tradable permit systems suggests that it could be beneficial to convert the former into the latter (OECD, 2003). In any case, for voluntary programmes to be effective, they must be accompanied by adequate monitoring

Table 6.2. **Cost savings of tradable-permit systems**

Programme	Traded commodity	Years of operation	Cost savings (2003 dollars[1])
Emissions trading programme	Criteria air pollutants	1974 to present	Total, $1-$12 billion
Lead phase-down	Rights for lead in gasoline	1985 to 1987	Total, $400 million
Acid rain reduction	SO_2 emission reduction credits	1995 to present	Annual, $0.9 to $1.8 billion

1. Base year for values for emissions trading programme not specified.

Source: Council of Economic Advisers (2004).

mechanisms to ensure accountability and facilitate evaluation. As to the enforcement of regulations, the authorities have pointed out that, even as inspection numbers have decreased, the proportion leading to prosecutions has increased and the sanctions imposed have included amounts to deter future violations in addition to compensation for the benefits the polluter might have derived from non-compliance (OECD, 2005).

In contrast to some OECD countries, which rely to a greater extent on environmental taxes, the US approach to air pollution management focuses on tradable permit programmes, investment in research and development and direct controls on source emissions and fuel content. Under the Clean Air Act of 1970, whose implementation has been found to have had substantial net economic benefits (Environmental Protection Agency, 1999), emissions cap-and-trade programmes for sulphur dioxide (SO_2) and nitrogen oxides (NO_x) were developed in the 1990s to facilitate cost-effective emission reductions (OECD, 2000). The SO_2 trading system, in particular, which focuses on emissions by fossil-fuel-fired power plants, is regarded as highly successful. In place since 1995, it has lowered emissions far below mandated levels – which require a cut by half from 1980 to 2010 – and has limited the cost of reducing emissions noticeably. The more recent NO_x trading programmes differ with respect to the number of states involved, compliance periods and the expected reductions, while Congress has adopted national emission standards for power plants. To extend progress in the area of air pollution, objectives for further reducing emissions of SO_2, NO_x and – for the first time – mercury from power plants were proposed by the Administration as part of its "Clear Skies" initiative in 2002. Atmospheric emissions are to be cut roughly by half by 2010 and by two-thirds by 2018 *via* a national cap on each pollutant and allowance trading systems. While the targeted reductions would be a step in the right direction, modelling by the EPA suggests that the ceilings are too high to create real incentives for increased energy efficiency or shifts to cleaner fuels. Although passage of Clear Skies legislation is the Administration's preferred solution, as it would reduce the risk of litigation and associated regulatory uncertainty, the bill has stalled in Congress. In the meantime, the Administration is pursuing a regulatory path, admittedly a second-best solution, to achieve the targeted results. The Clean Air Interstate Rule, issued by EPA in 2005, provides states with a solution to the problem of power plant pollution that drifts across borders, establishing a cap-and-trade system to reduce NO_x and SO_2 emissions in 28 Eastern states and Washington, D.C. The 2005 Clean Air Mercury Rule also offers a cap-and-trade programme, making the United States the first nation in the world to control mercury emissions from utilities.

In general, fiscal instruments in the United States are little used to internalise environmental costs or to influence consumption choices having environmental consequences (proposed tax credits for hybrid vehicles are an exception). Fuel taxes are low in general, and taxes on diesel and gasoline-powered motor vehicles in particular are the lowest in the OECD (except Mexico). It is therefore not surprising that the average fuel economy of the US motor vehicle fleet is also among the lowest. Fuel efficiency improved markedly with the introduction of Corporate Average Fuel Economy (CAFE) standards for new cars in the late 1970s but, with no further significant changes in standards, has remained broadly stable since the mid-1980s. Fuel economy of light trucks (including pickups and sports utility vehicles), which have a less stringent standard, was much lower to begin with and has even worsened, while purchases have shifted to such vehicles. Fuel economy standards for light trucks have been raised by 7% for the model years 2005 to 2007. The Department of Transportation has recently proposed to raise them another 6% by 2010 and to change from the

current fleet-wide standard for light trucks to a size-based system in 2011, with larger vehicles qualifying for lower standards. While these are positive steps, absent a willingness to make heavier use of tax measures, they should be followed up with further tightening of CAFE standards for all vehicle classes. Moreover, a significant reduction in fuel consumption requires the use of price signals to reflect environmental externalities related to private vehicle use, although recent gasoline price increases should have a noticeable effect on demand.

The United States has not ratified the Kyoto Protocol, an international agreement to reduce GHG emissions, to which most OECD countries are party. The Administration has consistently argued that absolute reductions in GHG emissions would harm economic growth excessively and that major developing countries should also be party to the agreement to effectively reduce global GHG emissions. Its Climate Change Plan, issued in 2002, aims at cutting the emissions *intensity* of output by 18% over the following ten years, which would slow the rise in emissions but still leave them almost one-third above the negotiated Kyoto target. Considering that existing technologies for GHG reduction are not cost effective, the government prefers to promote the science of climate change and related research, focusing on breakthrough technologies such as carbon sequestration. By the end of 2005, the Administration will have spent over $20 billion on such activities. The FY 2006 budget proposal continues strong support for such research and development and extends incentives for the purchase of hybrid and fuel-cell vehicles and electricity production from alternative energy sources. The Administration's climate change policy relies primarily on voluntary and non-regulatory actions and does not include the introduction of a trading system for GHG emissions, as it exists for air pollutants. To address concerns about adverse economic effects of reducing GHG emissions, a bi-partisan commission has proposed the implementation of a mandatory economy-wide tradable-permits system that would cap the initial cost of emissions and link subsequent action with comparable efforts by other countries (The National Commission on Energy Policy, 2004). Meanwhile, some 25 states have acted independently or in concert to deal with climate change, moving beyond the non-regulatory and voluntary federal approach. Examples are legislation passed in California in 2002, limiting CO_2 emissions from new cars and light trucks, and the 2005 initiative of a group of North-Eastern States to introduce a cap-and-trade system for such emissions. There are also a number of private-sector initiatives, and, as a result, some firms have announced their intention to cut emissions voluntarily; others have joined the City of Chicago to form the Chicago Climate Exchange to trade emission credits. Nonetheless, most major power producers and energy-intensive businesses in the United States continue to oppose any regulatory action.

Concluding remarks

Despite electricity crises and the recent oil price shock, progress in the area of energy and environmental policies, which in many ways overlap, has been slow. Legislation to implement the Administration's National Energy Policy announced four years ago was only passed this summer, and the government"s efforts to get a legislative foundation for its Clear Skies initiative have made no headway. As has been argued in this chapter, the rapid implementation of reforms is clearly desirable so as to limit the inexorable rise in energy demand and the attendant dependence on foreign and less reliable sources of supply and to reduce the costs of environmental improvement. Box 6.3 provides some recommendations in this regard.

Box 6.3. **Policy recommendations regarding energy and environmental issues**

Energy

- Persevere with the implementation of the National Energy Policy to ensure that the numerous problems in this sector are addressed in a coherent way by speedily implementing the 2005 Energy Policy Act and complementing it by additional initiatives (for example to support public transportation).
- Remove undue obstacles to oil and gas exploration and reduce regulatory barriers to new investment in refinery capacity.
- Give even more weight to providing incentives for renewable energy production and, if this proves insufficient to diversify energy supply, consider the use of a federal renewable portfolio standard (that is, a quantified target) as an alternative to tax credits.
- Give priority to enhancing energy efficiency, in particular in the transport and building sectors, by using economic instruments where possible or otherwise setting mandatory standards and quantified targets.
- To realise the benefits of improvements in energy infrastructure, in particular in electricity transmission and generation, carefully monitor the changes embodied in the Act to ensure that markets are contestable. Make further efforts to increase regional integration of electricity markets and rapidly implement the Act's provisions aimed at enhancing the electricity grid's reliability.
- Ensure that the level and distribution of funding for energy research and development is geared to meeting both energy and environmental policy goals.

Environment

- When increasing government support to the energy sector, identify and reduce environmentally harmful subsidies.
- Make sure that current and projected environmental benefits from existing regulations are maintained or bettered in setting the caps under future trading regimes, such as the Clear Skies initiative.
- Given the influence of US emissions on global greenhouse gas levels, take measures to stabilise and then reduce them in an economically efficient manner by introducing some mixture of a domestic cap-and-trade system for carbon dioxide emissions, as it exists for some air pollutants, and a carbon tax on all carbon-based energy products.
- Make greater use of economic instruments to integrate environmental concerns in the transport sector. Preferably increase fuel taxes so as to take on board externalities, but, as a second-best solution, tighten CAFE (corporate average fuel economy) standards further.

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