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Chapter 2

Potential employment

The trend growth rate of GDP has slowed, mainly because of tighter limits on how quickly employment can grow. In particular, the labour force participation rate, which used to be rising quickly, is now trending down. Against this background, this chapter considers three policies that bear on long-term employment trends. Raising the age at which workers become eligible for full social security benefits would discourage premature retirement and make the social security system more financially secure. The disability insurance system is discouraging a rising share of the population from staying in the workforce and should be made less generous and more selective. Substantial increases in the federal minimum wage are planned; however, increases in the Earned Income Tax Credit would achieve the same objectives more effectively and with less risk of job losses.

Employment limits are slowing economic growth

The growth of the US economy is slowing. Whereas GDP rose at an annual average rate of 3¼ per cent in the 1970s, 80s and 90s, it has risen at a rate of only 2½ per cent so far in the 2000's. OECD projections are that this slower rate of growth will continue, more or less, over the next few years. A major reason for this slowdown is a reduction in the sustainable rate of growth of employment (or, more broadly, labour input).

This can be seen if GDP is decomposed into its "potential" or normal level, and cyclical deviations about this level. Potential GDP can then be further decomposed into labour input (aggregate hours), services from the capital stock, and productivity. Growth in labour input can be expressed as the sum of growth in the working age population, the labour force participation rate, the full-employment rate (one minus the NAIRU), average hours worked, and a discrepancy that reflects data differences and (negligible) aggregation errors.[1] Table 2.1 and Figures 2.1 and 2.2 show how these components have grown over time. Accounting identities that link these variables are set out in Annex 2.A1. Data measurement is discussed in OECD (2006a). For further details, see Beffy, Ollivaud, Richardson and Sédillot (2006).

Table 2.1. **Growth rate of potential output and its components**

Average annual percentage change

	1964-69	1970-79	1980-89	1990-99	2000-06	2007
Potential GDP	3.9	3.3	3.1	3.2	2.8	2.7
Of which:						
Labour productivity	2.5	1.4	1.2	1.5	2.2	2.1
Labour input	1.4	1.9	1.8	1.7	0.6	0.6
Of which:						
Hours	–0.5	–0.5	0.0	0.0	–0.2	–0.1
Employment	1.9	2.4	1.9	1.7	0.8	0.7
Of which:						
Population	1.6	2.0	1.3	1.2	1.2	1.2
Participation	0.3	0.5	0.4	0.1	–0.2	–0.3
Full employment rate	–0.1	–0.1	0.1	0.1	0.1	0.0
Discrepancy	0.1	0.0	0.1	0.3	–0.3	–0.2
Memorandum items:						
Total factor productivity	1.6	0.6	0.5	0.6	1.0	1.0
Capital services	4.3	4.4	4.3	4.6	4.4	3.9
Actual GDP	4.4	3.4	3.1	3.3	2.5	

Note: All series except actual GDP are smoothed.
Source: OECD Analytical database.

Not surprisingly, the slowdown in GDP from the stronger growth rates of previous decades to the more moderate growth in recent years is matched by a similar slowdown in the growth rate of potential GDP. The slowdown in potential reflects a large slowdown in the sustainable growth rate of labour input. Whereas potential labour input grew, fairly

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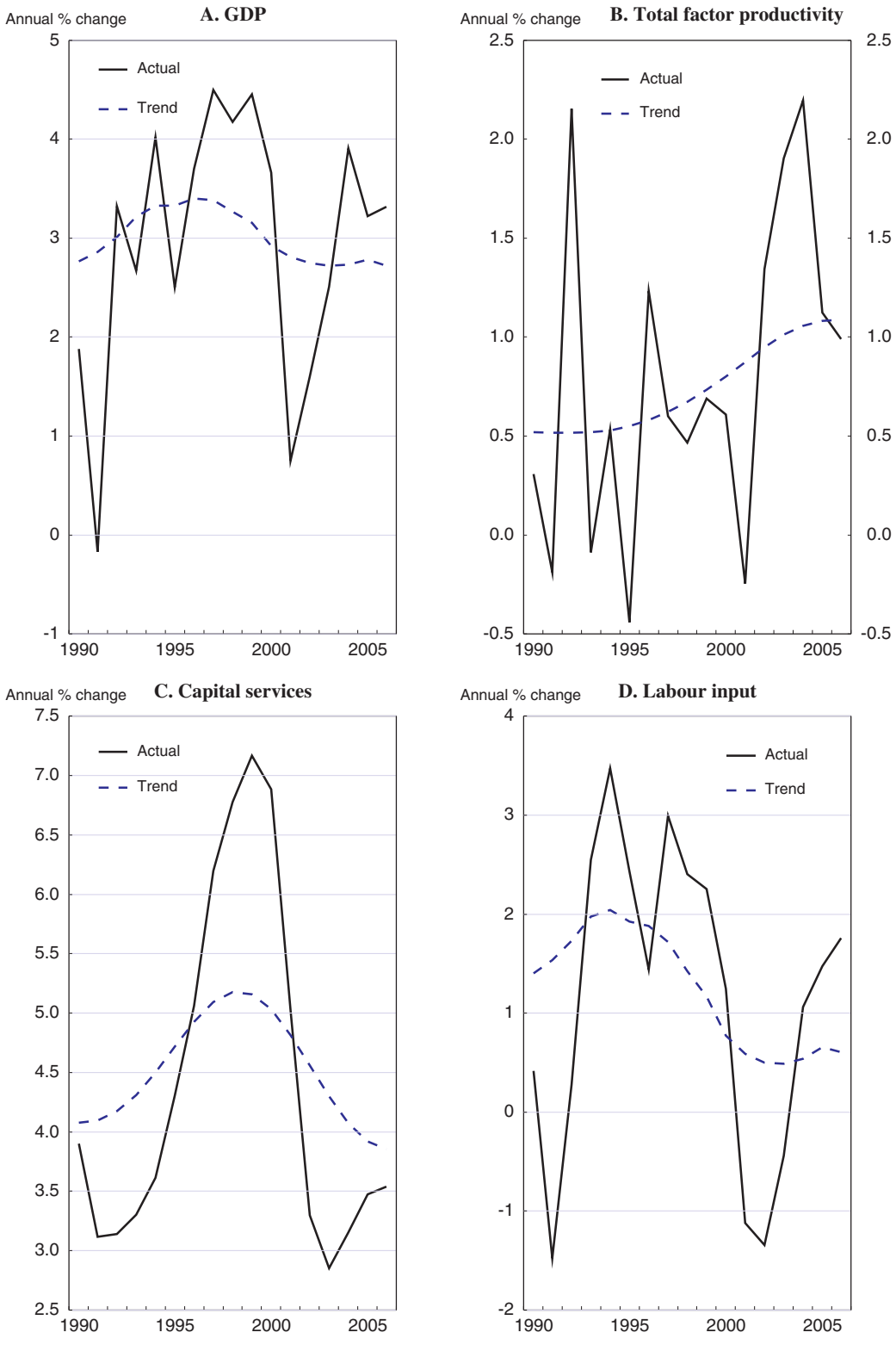
Figure 2.1. **Potential GDP and its components**



Source: Bureau of Labour Statistics; Bureau of Economic Analysis; OECD, Analytical database.

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steadily, at an annual average rate of about 1¾ per cent over the previous several decades, it has been growing at a much more modest rate of 0.6% since 2000. That slowdown in turn largely reflects a 1 percentage point deceleration in employment, with average hours worked making a smaller contribution. The slowdown in labour input more than offsets a marked acceleration in productivity, whether measured as output per hour or on a total factor basis. For example, the trend growth rate of total factor productivity has accelerated from about half a per cent a year to 1% more recently.

Potential employment is now estimated to be growing at about 0.7% a year, compared to 1¾ per cent in the 1980s and 1990s. This slower growth means a monthly increase in non-farm payrolls of about 80 000. That provides a useful benchmark for assessing the strength of monthly data on employment – one of the primary indicators of economic activity. If population, the participation rate and the employment discrepancy are growing at trend, then employment growth in excess of that benchmark implies that the unemployment rate is declining. Payroll growth of 80 000 a month is well below recent estimates of "neutral" or "break-even" employment growth, most of which exceeded 100 000. However, those estimates seem to assume a relatively flat participation rate, which, as discussed below, is questionable.

Interpreting changes in trend employment is difficult because of substantial divergences between the two main measures. The measure used in Table 2.1 and Panel A of Figure 2.2 uses payroll data from a survey of employers (the "establishment survey"), to which are added estimates of employment in agriculture and the self-employed. An alternative measure, from a survey of households, shows considerably faster growth in employment over this decade. In general, the establishment survey is believed to be more accurate, but the household survey permits decomposition into changes in population, participation and unemployment. The difference between these two measures shows up as the line in Table 2.1 labelled discrepancy. It means that the 2007 trend growth in employment is 0.2 percentage points slower than can be accounted for by changes in population, participation or unemployment. Furthermore, 0.5 percentage points of the deceleration in employment since the 1990s is difficult to attribute among these factors.[2] Hence, while the slowdown in GDP growth over the last decade can largely be attributed to slower growth in potential employment, explaining the deceleration in employment is considerably harder. Panel F of Figure 2.2 shows the discrepancy, measured as the ratio of the establishment-based estimate of employment (plus employment in agriculture and the self-employed) to that of the household survey.

With respect to factors that can be more easily interpreted, about ¼ percentage point deceleration in the growth in potential employment since the 1990s, and over half a percentage point since the 1970s and 1980s, can be attributed to a turnaround in the labour force participation rate (Figure 2.2, panel D). This is discussed in more detail in the following section. Changes in the other components of potential employment, that is, the NAIRU and population growth, have been relatively small.

Before turning to issues more directly related to trends in employment, a few broader comments on the OECD's estimates of potential output may be appropriate. The OECD's estimate of the current growth rate of potential GDP – 2.7% in 2007 and 2008 – is similar to other forecasts. For example, Jorgenson, Ho and Stiroh (2007, Table 4) show eight recent estimates from public and private sector experts. The mean estimate of potential GDP growth is 2.7% (standard deviation, 0.2). OECD estimates for productivity and aggregate hours growth also lie well within the range of recent estimates.

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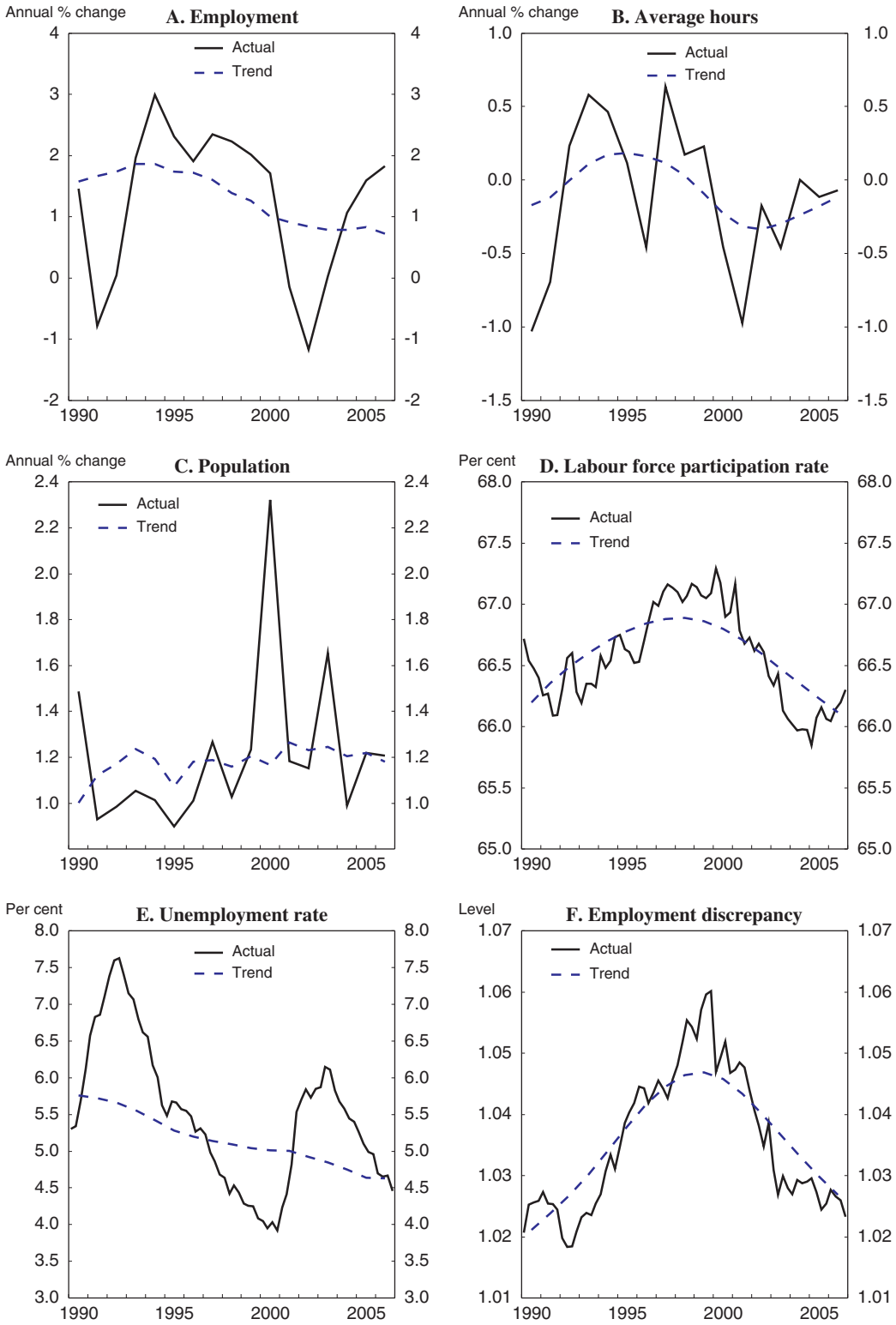
Figure 2.2. **Components of labour input**



Source: Bureau of Labour Statistics; OECD, Analytical database.

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OECD estimates have been revised down substantially over the last year, as have those of other forecasters. Projections of current and expected growth in potential GDP had hovered a little over 3% for several years, rising to 3.4% in the *Economic Outlook* of late 2005. Changes in methodology and measurement make identifying the causes of this revision difficult. However, one clear and important factor has been downward revisions to the estimated trend in the labour force participation rate. Whereas this was projected to be flat a few years ago, it is now projected to detract 0.3 percentage points from trend GDP growth. Other forecasters have made similar revisions.[3]

A great deal of economic commentary over the last year has discussed possible changes in the growth of trend labour productivity (discussed in Chapter 1). The annual revisions to the National Income and Product Accounts reduced estimates of investment over recent years, leading to a markdown in the estimate of the contribution of capital services of one to two tenths of a percentage point. Downward revisions to GDP had a similar effect on estimates of total factor productivity growth. But offsetting these revisions, incoming data on productivity through mid 2006 had been strong. Recent quarterly estimates have been weaker, but that partly reflects cyclical lags and may be heavily revised. Although changes in measurement make comparisons difficult,[4] OECD projections of growth in GDP per hour worked are not very different now from those of several years ago.

Labour force participation

As noted above, a major factor in the slowdown in economic growth has been a turnaround in the trend labour force participation rate. Figure 2.3 shows longer term movements.

The downward trend in labour force participation is expected to continue for some time, in large part because of demographic developments. As shown in Figure 2.4, different age groups have very different labour force participation rates. Workers tend to join the labour force in their late teens or early twenties, then leave in their sixties.

These movements interact with changes in the share of different age groups. In particular, the birth rate in America was unusually high after World War II through to the 1960s. This gave rise to a bulge, known as the baby boom, that has progressively moved through the population distribution (Figure 2.5). In the 1970s and 80s, the baby boomers entered the labour force. However, this movement also raised the working age population, so the participation rate was little affected. (In the United States, the participation rate is measured as a share of the population aged 16 and over.) Now, as the baby boomers approach retirement age, labour force participation will decline.

Multiplying participation rates by population shares gives a simple estimate of the effects of demographic changes. Aaronson *et al*. (2006) do this for 28 disaggregated age-sex categories. Their analysis includes Census projections out to 2015. Given the predictable patterns evident in Figure 2.5, some confidence can be placed in these projections. The results are shown in Table 2.2.

Over the last two decades, the effect of changing population shares has been small, as the baby boomers have progressed through their prime working years when participation rates are flat. However, as they move into their sixties the aggregate participation rate will decline substantially. This aging of the population, by itself, will reduce the participation rate by 2 percentage points over the next decade, or 0.2 percentage points a year.

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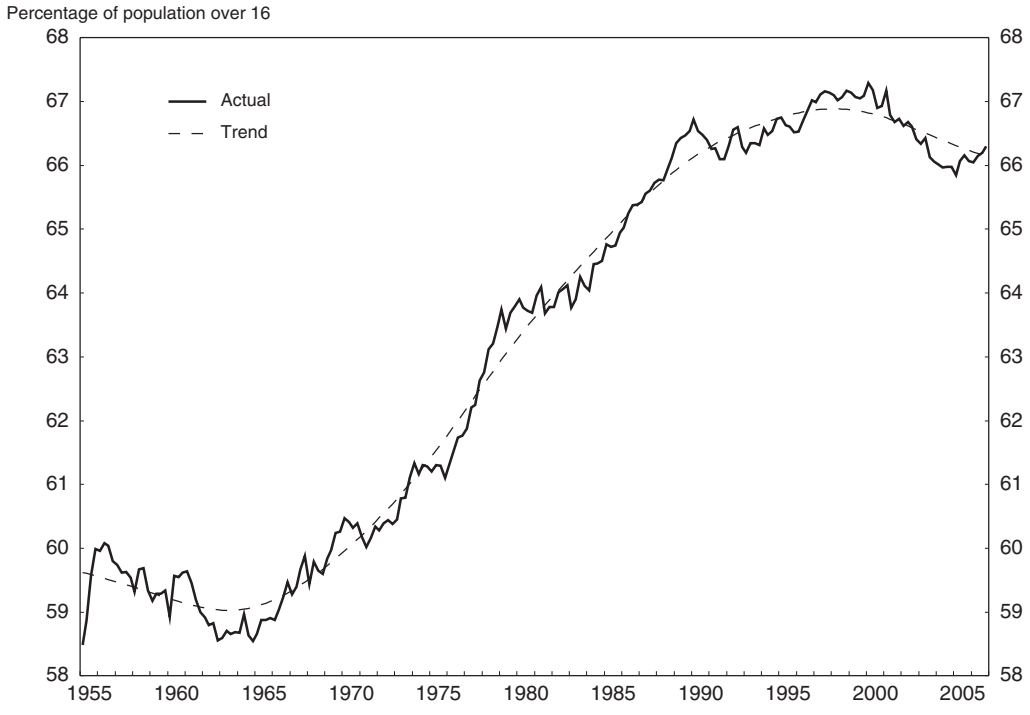
Figure 2.3. **Labour force participation rate**



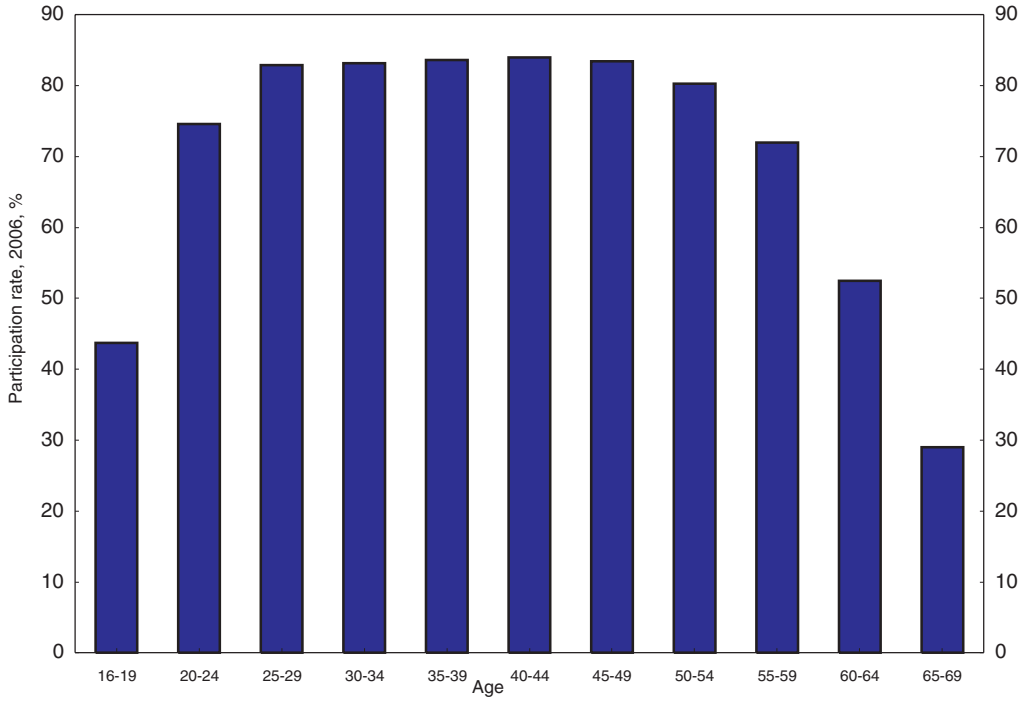
Source: OECD Analytical database.

StatLink http://dx.doi.org/10.1787/008704653143

That estimate assumes that the participation rate of each age-sex demographic category will be constant. However, there are reasons for expecting participation rates within age-sex categories to decline, so the aggregate participation rate will decline by more than the above shift-share analysis indicates. In particular, the participation rate of prime-age males has been declining steadily by a percentage point or two each decade since the 1950s. This is partly due to increased resort to disability benefits, discussed in a following section, and to earlier retirement. There are doubtless many other factors at work, but the steadiness of the decline makes disentangling these difficult. However, that steadiness also makes forecasting simple: previous trends might be expected to continue. For a long time, the downward drift in male participation was offset by a much larger increase in female participation. The increase in female participation is often attributed to changing social and legal views. Goldin and Katz (2002) emphasise the role of oral contraceptives. These factors seem to have stabilised and the trend in female participation has levelled out over the last decade.

Taking these and other factors into account, Aaronson *et al.* project the aggregate participation rate to decline by about 0.3 percentage points (of the working-age population) a year over the next decade. This represents a significant reversal of previous trends. For example, the participation rate *rose* at an annual average rate of 0.23 percentage points from 1970 to 2000. Holding other factors (such as productivity per worker) constant, this turnaround takes three-quarters of a percentage point away from the annual growth rate of potential GDP.

Figure 2.4. **Labour force participation rate by age**



Source: Bureau of Labour Statistics, *Employment and Earnings*, February 2007, Table 2.

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Aaronson *et al.*'s projections are also substantially lower than those for other forecasters, including the Congressional Budget Office (CBO), the Bureau of Labor Statistics, and the Social Security Administration. With regard to the estimates of the CBO (2006), which rival Aaronson *et al.* in terms of thoroughness, a small part of the difference reflects projections of population shares – the CBO assumes higher immigration inflows than census projections, and hence a less dramatic aging of the population. The main difference seems to lie in the within-group projections, though the reasons are not entirely clear. Since Aaronson *et al.*'s estimates were published, the participation rate has *risen* markedly. Taking these and other factors into account, OECD projections assume a trend decline in the labour force participation rate of 0.2 percentage points a year.

Policies to increase the participation rate

A declining participation rate is not, in itself, an obvious cause for concern. If individuals choose to retire, or withdraw from the workforce for some other reason, then that decision presumably reflects a balancing of the costs and benefits and they are better off for it. However, taxes, social insurance benefits, and retirement income programmes can distort these decisions. It is important that such distortions be no larger than necessary, given the various objectives facing governments.

The most obvious of these distortions is the disincentive to work caused by taxation. In theory, the effect of taxes is ambiguous, with the effect of lower incomes boosting effort, while substitution effects lower it. In practice, substitution effects appear to be more important, particularly for temporary changes in taxes. Interesting evidence on this comes

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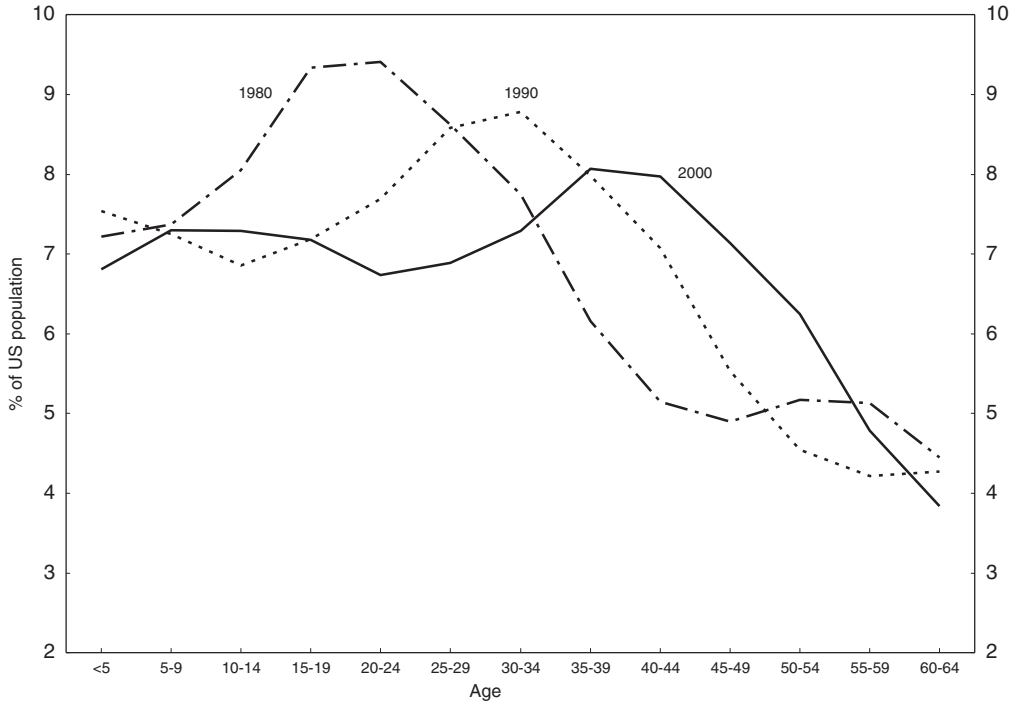
Figure 2.5. **Distribution of US population by age**



Source: Statistical Abstract of the United States, 2007, Table 11. Resident Population by Age and Sex.

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Table 2.2. **Contribution of changing population shares to change in the aggregate labour force participation rate, 1980-2015**

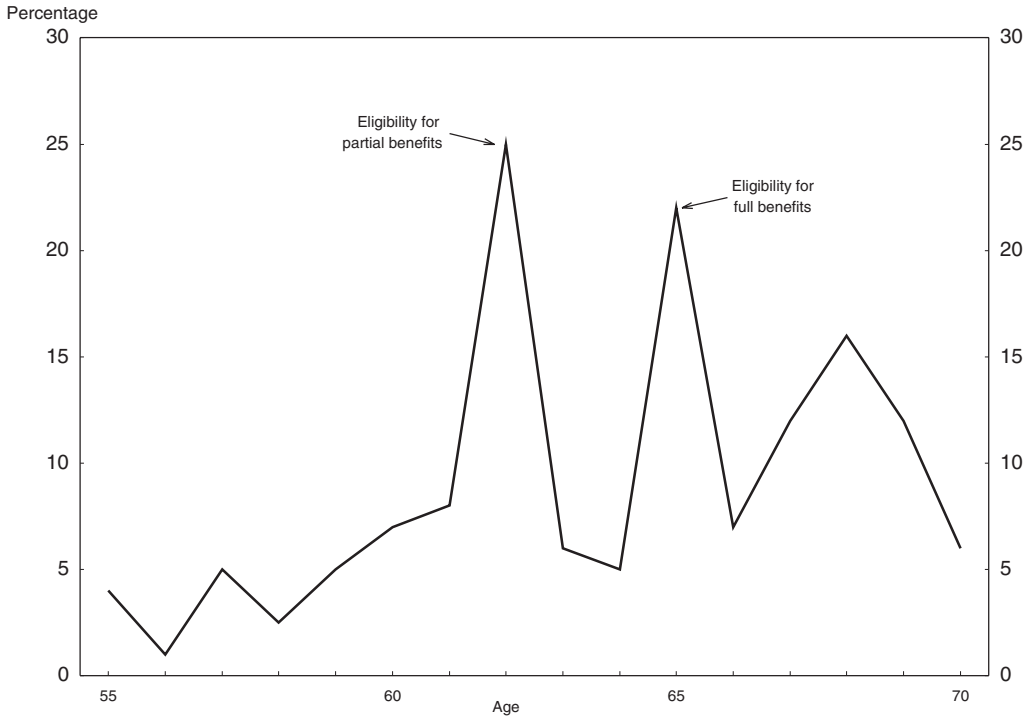
	Total change accounted for by changing population shares	Total change in aggregate labour force participation rate
1980-1995	0.6	2.4
1995-2005	–0.4	–0.4
2005-2015	–2.1	

Source: Aaronson *et al.* (2006, Table 2, Figure 3).

from Iceland's one-year "tax-holiday". As a result of a change from taxing previous year's income to current-year income, income earned in Iceland in 1987 was untaxed. Bianchi, Gudmundsson and Zoega (2001) found that this led to a one-year spike in the employment rate from 78% of potential weeks worked to 81%. On average, they found that each 1% rise in after-tax wages led workers to work 0.4% more weeks.

For many purposes, the more interesting issue is the response to long-term changes in tax rates, which is likely to be lower than the response to temporary changes (because income effects are larger and substitution effects are smaller). There is a very large literature devoted to this. For recent surveys, see Blundell and Macurdy (1999) or Gruber (2005). This finds that work decisions of "primary earners" (the main source of income for a household) respond fairly weakly to changes in after-tax wages, with an elasticity of labour supply with respect to after-tax wages of about 0.1. However, other workers in the family are much more responsive, with elasticities of between 0.5 and 1. Most of the

Figure 2.6. **Retirement hazard rate, males**



Source: Gruber and Wise (1999).

StatLink http://dx.doi.org/10.1787/008760462334

response of these "secondary earners" comes from the decision to work at all, with a smaller part coming from the decision over how many hours to work.

These findings provide some (arguably modest) support for policies aimed at lowering taxes over the long term and restraining the growth in government spending. Specifically, government subsidies for public goods need to not only be justified by the benefits of those goods but also by enough to cover the deadweight efficiency losses arising from lower labour supply.

One policy intervention aimed at changing labour force participation rates is the Earned Income Tax Credit (EITC). The primary aim of this policy however is distributional: that is, to assist those on low incomes. The EITC is discussed at the end of this chapter, in the context of the minimum wage, a policy with much the same objectives, but much higher on the current policy agenda.

Another policy with important implications for labour supply is social security. Figure 2.6 shows retirement hazard rates for men at different ages. (The hazard rate, also called the exit rate, is the number of retirements as a proportion of the number of workers). There are dramatic spikes in retirement rates at age 62, when workers are first eligible for partial social security benefits and at age 65, when full benefits are paid. Interestingly, there was no spike at age 62 before the introduction of early retirement in 1961. Furthermore, countries that start paying benefits at age 60, such as France, Germany or the Netherlands, have large spikes in retirement rates at age 60 instead (Gruber and Wise, 1999). The clear implication is that the age at which social security benefits are paid

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provides a very powerful lever for influencing retirement decisions. Gruber and Wise (1999) provide further evidence.

Increasing the age at which benefits can first be claimed raises difficulties. Gruber and Wise find that the social security system is neutral with respect to retirement decisions at this age. A retiring worker gets an extra year of benefits and pays one year less of payroll taxes. However, benefits for early retirees are reduced to reflect their likely longer duration. This, together with the tendency of wages and hence benefits to increase, exactly offset the benefits of early retirement. Hence, although raising the early retirement age would increase labour supply and income, it would do so by creating a distortion (penalising early retirement). Furthermore, because the reduction in benefits for early retirees is actuarially fair, it would not improve the financing of Social Security.

A stronger case exists for delaying the age at which workers receive full benefits, which is gradually phasing up from 65 to 67. Beyond this age, the social security system provides strong disincentives to continue working. Workers who postpone retirement receive a Delayed Retirement Credit but this is insufficient to compensate for the loss of benefits. In contrast to raising the early retirement age, raising the Full Benefits Age reduces distortions. Perhaps more important, increasing the Full Benefits Age would represent a reduction in the generosity of the Social Security system and hence move it toward actuarial balance. The previous *Economic Survey* of the United States considered issues relating to social security in some detail and recommended speeding up the transition from 65 to 67 for the age at which full benefits are paid and indexing it thereafter to changes in average life expectancy. The passing of time has raised the priority of this recommendation.

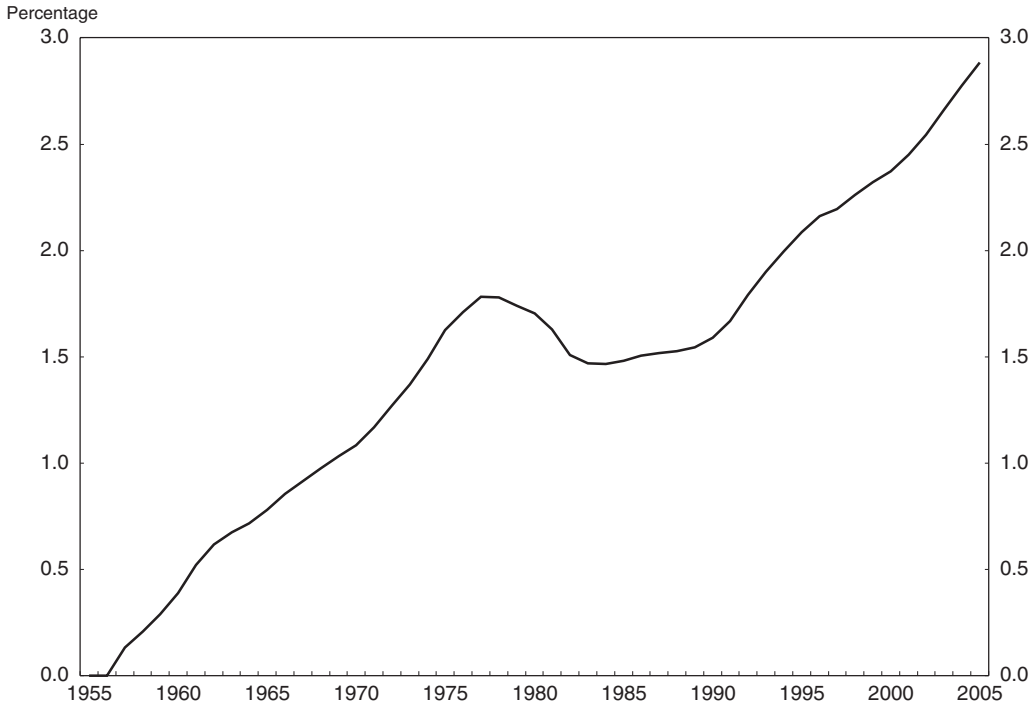
Disability benefits

One of the under-appreciated features of the US labour market has been the dramatic increase in the number of people receiving disability benefits. As shown in Figure 2.7, the share of the population aged 16 and over receiving benefits (specifically, disabled workers, excluding dependents) has grown from zero, when the programme was introduced in 1956, to 3% in 2005, representing an average rate of increase of 0.06 percentage points a year. The current rate of admissions to the programme exceeds the rate of exit by a substantial margin, suggesting that this growth will continue for some time. This cumulative diminution of labour supply is large relative to many other factors that influence potential output. Furthermore, whereas other large influences often reflect shifts in preferences or technology, which governments do not control, the increase in disability rolls has been heavily influenced by government policy.

Why have the disability rolls grown so much? It does not seem to be because of increasing physical impairment: the annual mortality rates of men and women aged 50 to 64 fell by 29% and 17% respectively between 1981 and 2001. Other measures of health show similar improvement over time. Nor does the aging of the population account for any but a small part of the increase, which has doubled over the last two decades.

According to Bound and Waidman (2001) and Autor and Duggan (2006), much of the recent increase reflects a relaxation of eligibility restrictions in 1984. For example, the new provisions made it easier for sufferers from back pain, arthritis and mental impairments to get benefits. Musculoskeletal and mental disorders (the corresponding data categories) have subsequently grown from afflicting a small share of disability recipients in 1983, to

Figure 2.7. **Disability recipients as share of over-16 population**



Source: Social Security Bulletin, Annual Statistical Supplement, table 5.D3; OECD Analytical database.

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accounting for most new awards in 2003. Furthermore, because these conditions have early onset and low mortality, the expected duration of benefits has lengthened from 6 years in 1983 to 14 years in 2004.

A second important factor has been the increasing generosity of the programme. Disability beneficiaries receive heavily subsidised medical care, the relative value of which has increased substantially. Furthermore, key parameters in the formula determining benefits are indexed to average wages, which have increased faster than the wages of unskilled workers. These factors have increased replacement rates, particularly at the bottom of the wage distribution and for workers without health insurance. As shown in Table 2.3, the replacement rate for a male worker in his 50s at the 10th percentile of the wage distribution has risen from 68% in 1984 to 86% in 2002. That seems high. This increase did not reflect any direct legislative action and appears to have been unintended. Indexing the bottom bracket to the Consumer Price Index would help restore original replacement rates.

Table 2.3. **Replacement rates for men aged 50-61**

Per cent

	1984	2002
10th percentile	68	86
Median	34	46
90th percentile	18	22

Source: Autor and Duggan (2006).

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As might be expected following this, a large part of the growth in beneficiaries has been among low-skilled workers. The enrolment rate of male high-school dropouts aged 55-64 rose from 15% in 1984 to 20% in 2004. Meanwhile, the enrolment rate of similar workers with a college degree rose from 3% to 4%.

Originally, disability insurance was conceived as providing benefits for the "totally and permanently disabled". If that intention had been put into effect then the incentive effects of high replacement rates would not be a problem. However, as the programme has been reinterpreted and administered, benefits are often paid to those who are capable of work. The clearest evidence of this is that factors unrelated to physical impairment, such as education (see previous paragraph) or the business cycle have large effects on the number of beneficiaries. In both of the last two recessions applications rose by about a quarter, before falling back as the economy recovered (Autor and Duggan, 2006, Figure 4). Although there are good reasons for expecting education and unemployment to be strongly correlated with *partial* disability, it is less clear that they should affect total or permanent disability.

Precise measurement of the effect of disability benefits on labour supply is difficult. However, Bound (1991), Bound, Burkhauser and Nichols (2001), and Chen and Van Der Klauuw (2005) find that the labour supply of men aged over 45 applying for disability benefits would have been about a third higher were it not for the availability of the programme. Gruber (2000) analysed changes in Quebec's insurance system; this was quite similar to that of the United States, but permitted unusually clear tests. He found a 36% increase in benefits lead to a 12% increase in non-participation by older men.

Disability benefits in the United States are not unusual by international standards (OECD, 2003). Recipiency rates in the United States are near the OECD average (Figure 2.8)[5] though growing relatively quickly. Replacement rates seem to be similar (though standardised measurement is difficult); however, reflecting lower unskilled wages, overall benefit levels tend to be somewhat lower in the United States. As this suggests, the fundamental goals of the programme are widely shared.

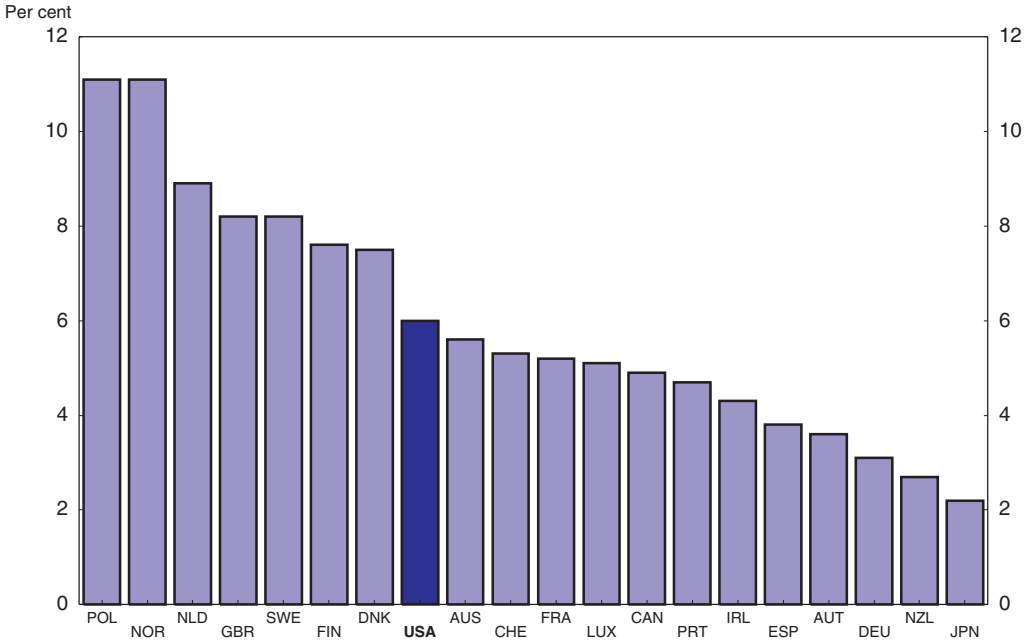
Consistent with this, appropriate policy with regard to disability insurance can involve some difficult tradeoffs among competing objectives. However, there does seem to be a case for change. Current legislation was last reviewed substantially in the early 1980s and, as discussed above, the programme has evolved in unintended ways since then. In particular, replacement rates at the bottom of the wage distribution and for workers without health insurance have risen to punitive levels, encouraging capable workers to leave the workforce.

Proposals to make disability benefits less generous have obvious political and economic difficulties. An alternative means of reducing replacement rates would be to provide medical insurance to partially disabled workers. However, that would be fiscally costly and raise controversial issues of health policy. While lower replacement rates would be desirable, there may be greater scope for improving the targeting of benefits to those genuinely incapable of work. For example, Autor and Duggan (2006) propose greater use of independent medical evaluations and providing legal representation of the taxpayers' interest at appeals. They argue that these reforms would raise the rejection rate of non-deserving claims, reducing adverse incentives, without hurting those in need.

Particular attention needs to be paid to the interaction of high replacement rates with the broadening of eligibility criteria to cover difficult-to-verify impairments such as back-pain and mental disorders. Either of these measures, on their own, need not be important.

Figure 2.8. **Disability benefit recipiency rates**[1]

Persons aged 15 to 64[2]



1. Data refer to 2004, except for the United States (2003), France (2003) and Canada (2002).
2. The age group is 20 to 64 for Australia, Denmark, Luxembourg, Norway, Poland, Sweden, Switzerland and the United Kingdom.

Source: OECD (2006b, 2007), Carcillo and Grubb (2006).

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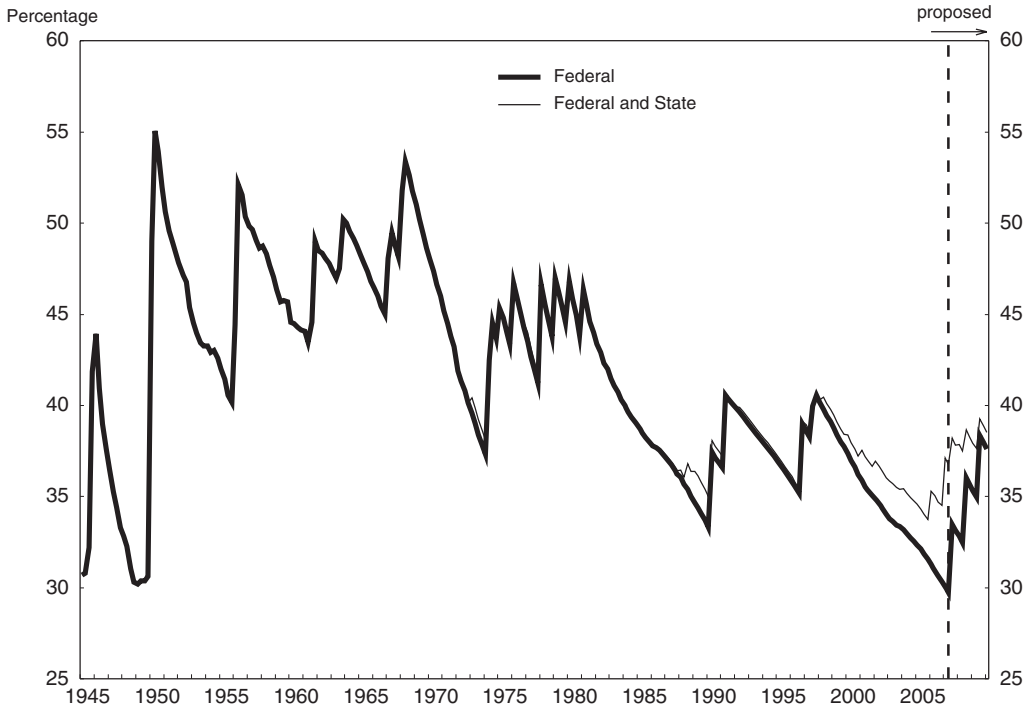
But together, they invite abuse. Thus the case for reducing replacement rates is strongest when impairments are difficult to verify. An explicit policy to this effect would seem unfair. However, a similar effect might be achieved by requiring successive levels of verification be passed before benefits are awarded. Those whose disability is obvious would then receive benefits earlier (and hence, in present value terms, higher) than those whose work eligibility is more doubtful.

The minimum wage

In mid-2007 Congress is expected to raise the federal minimum wage from its current level of $5.15 to $7.25 over the next two years, an increase of 41%. (At the time of writing, both Houses had passed bills to this effect, but with details that needed to be reconciled). The nominal change may sound dramatic, but it overstates the magnitude of the change in two respects. First, much of the increase represents a lagged catch-up to past inflation. Second, 29 states and the District of Columbia now have minimum wages that exceed the federal minimum. These higher minima will absorb much of the Federal increase. Based on the higher of Federal and state minima in each state, the average minimum wage is currently about $6.40 an hour.[6] The legislation under consideration by Congress would raise that to $7.40 (assuming no change in state legislation). That represents an increase from 37% of average hourly earnings of non-supervisory workers to 39% – assuming that average hourly earnings continue to grow at 4% a year. As shown in Figure 2.9, this would remain fairly low by historical standards.

Figure 2.9. **Minimum wage as fraction of average hourly earnings**



Source: OECD calculations based on Tulip (2004), Employment Standards Administration, Bureau of Labour Statistics.
StatLink http://dx.doi.org/10.1787/008822815264

There is an academic debate about whether increases in the minimum wage do more harm than good. On one side are economists who stress adverse employment effects and the poor targeting of the minimum wage. Neumark (2006) provides a good statement of this view. The other side includes 650 economists who signed a petition calling for a higher minimum wage (Economic Policy Institute, 2006). Although these economists each have their own reasons, they appear to view employment consequences as modest and outweighed by favourable distributional changes.

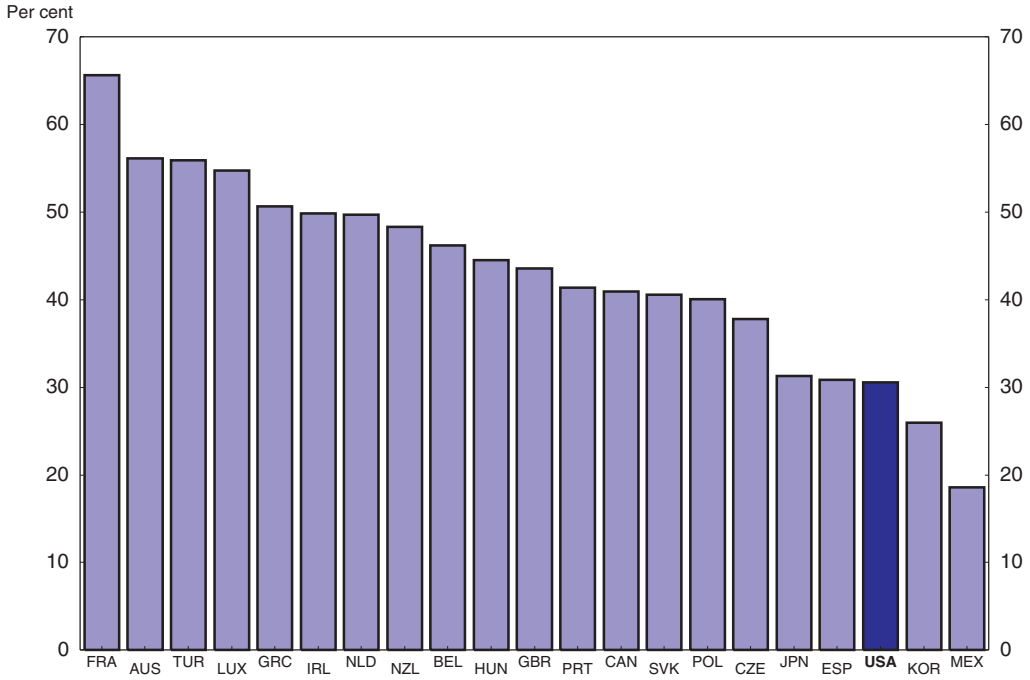
However, from a policy perspective, the important question is whether the minimum wage is the best instrument for achieving its objectives. On this issue, expert opinion is much more settled. According to Gary Becker (2006) and N. Gregory Mankiw (2006), "Most knowledgeable supporters of a higher minimum wage do not believe it is an effective way to reduce the poverty rate". This is important because, among legislators, the most commonly provided argument for raising the minimum wage is to reduce poverty.

The ineffectiveness of the minimum wage arises for three reasons:

First, the minimum wage does not help many of the working poor. It does little for the temporarily unemployed, part-time workers or workers with large families. This contrasts with the Earned Income Tax Credit (EITC), the Federal Government's other main policy instrument for helping the working poor. This explicitly takes family size into account. Because the EITC is based on annual, rather than hourly, income, it helps those who are only able to find temporary or part-time work.

Figure 2.10. **Minimum wage as fraction of median wage**

2005



Source: OECD, *Labour Force Statistics*, 2006.

StatLink http://dx.doi.org/10.1787/008828672717

Second, the minimum wage helps many workers who are not poor. Many low-wage workers, such as teenagers and married women, come from middle-class families. In 2005, only 15% of the 12.8 million workers paid an hourly wage of less than $7.25 in 2005 were in poor families (Table 2.4). In contrast, 46% of these workers were in families with incomes more than three times the poverty threshold. Again, this contrasts with the distribution of recipients of the EITC. The same data source suggests that 39% of EITC payments went to poor families, with only 6% going to workers in families at more than three times the poverty level. Furthermore, 58% to 60% of the benefits of increases in the EITC (depending on which parameters of the programme are varied) would go to poor families.

Table 2.4. **Distribution of low-paid workers and EITC payments by family income (after taxes and transfers)**

Family income (after taxes and transfers)	Distribution of hourly workers paid less than $7.25 (%)	Distribution of EITC payments (%)
Less than poverty threshold	15	39
Between 1 and 1.5 times poverty threshold	13	29
Between 1.5 and 2 times poverty threshold	9	16
Between 2 and 3 times poverty threshold	18	10
More than 3 times poverty threshold	46	6
Total	100	100

Source: CBO (2007, Tables 2 and 4) based on data from March 2005 Current Population Survey. For earlier, more detailed estimates see Burkhauser and Sabia (2005).

Third, the minimum wage may significantly reduce employment. Some recent research (for example, Card and Krueger, 1995) has concluded that increases in the minimum wage have negligible effects on employment. This contrasts with previous research (as surveyed in Brown, 1999) that appeared to consistently find negative effects. However, the extent of any disagreement is easy to overstate. The previous consensus focussed on small pockets of the labour market, such as teenagers and the low-skilled. Hence in aggregate terms, it only implied very small impacts of the minimum wage. So the policy implications (as opposed to the theoretical implications) of the two streams of research were not obviously in conflict. That said, the thrust of recent research has been that direct employment effects of the minimum wage are negative, though probably small. For a comprehensive (150 page!) survey of this literature, see Neumark and Wascher (2006). Neumark (2006) provides an accessible (opinionated) overview.

Indirect employment effects may be larger. Tulip (2004), Grossman (1983), Spriggs and Klein (1994) and others have found that increases in the minimum wage flow on to other wages, boosting inflation unless unemployment increases. Juhn, Murphy and Topel (2002) find that wage increases for unskilled workers have large labour supply effects giving rise to unemployment unless employment increases. Other studies, surveyed by Brown (1999) and Neumark (2006) suggest the minimum wage impairs training, school enrolment, job mobility and matching in the labour market. There are reasons to be sceptical of much of this research, particularly with regard to the magnitude of these effects. Many of these effects could be small. However, there is little theoretical or empirical reason for expecting them to be positive. So the risks of unfortunate labour market outcomes seem clearly skewed to the downside. Given, the difficulty of identifying benefits from a high minimum wage, policy makers may wish to avoid these risks.

Again in contrast, the Earned Income Tax Credit (EITC) boosts rather than reduces employment. In principle, the employment effects of wage subsidies like the EITC might be either positive or negative, due to offsetting income and substitution effects and the increase in marginal tax rates as the subsidy fades out. In practice, studies find negative effects are difficult to discern while positive effects are substantial. Surveys by Holt (2006) and Eissa and Hoyes (2005) conclude (in Eissa and Hoyes words) "the overwhelming finding of the empirical literature is that the EITC has been especially successful at encouraging the employment of single parents, especially mothers". For example, Eissa and Leibman (1996) found that the expansion of the EITC in 1986 raised the workforce participation rate of single mothers by 1.4 to 3.7 percentage points. Studies have also found *negative* effects on the participation of women in two-earner families, but these results are smaller and harder to discern. Moreover, the research does not mean that the same favourable results would necessarily be obtained at higher levels of the EITC.

If the EITC achieves the objectives of the minimum wage more directly and effectively and with less risk of job loss, why do many policy makers prefer to raise the minimum wage? The most common answer is the visibility of the cost. A higher minimum wage is initially paid by employers, many of whom would presumably pass the cost increase on through higher prices. Many consumers may be unaware of the reason for those higher prices. In contrast, the EITC involves explicit budget transfers that are well understood by other taxpayers. It is sometimes said that "fiscal constraints", such as implicit or explicit PAYGO rules, make increases in the EITC more difficult than increases in the minimum wage. This assumes that households will be more accepting of a reduction in their real disposable income if it is brought about through higher prices than by taxes.

Box 2.1. **Recommendations on potential employment**

Increasing the social security retirement age would remove distortions favoring early retirement and move the Social Security system towards actuarial balance.

- Speed up the transition from age at which full social security benefits are paid from 65 to 67 and index it to further increases in life expectancy thereafter.

The disincentive effects of the disability insurance system have been unintentionally increasing due to declining relative wages for unskilled labour and the rising real value of medical benefits, discouraging a rising share of the population from staying in the workforce.

- Reduce high replacement rates.
- Tighten eligibility. In particular, delay awards for hard-to-verify impairments.
- Consider greater use of independent medical examinations and legal representation of the Social Security Administration at appeals.

The minimum wage is an ineffective and inefficient instrument for helping the working poor. It helps many workers who are not poor, fails to help many who are poor and risks sizeable job losses. In contrast, the Earned Income Tax Credit achieves the objectives of the minimum wage more directly with better employment effects.

- Future increases in state and federal minimum wages should be avoided.
- The Earned Income Tax Credit should be increased.

Notes

1. The OECD's decomposition differs from many others in that it does not distinguish between trends in the non-farm business sector and those in the overall economy. There are advantages in both approaches – that of the OECD's is that it is simpler, more transparent and facilitates international comparisons.
2. Some of the difference between the two measures reflects multiple job holding, which boosts the establishment survey relative to the household survey. Perhaps the largest source of difference is with regard to illegal immigration, which households may be less inclined to report than employers. For discussions, see Perry (2005) and Wascher (2005).
3. Another important cause of the OECD's revisions has been projections of the employment discrepancy. As household employment has continued to outstrip payrolls, the OECD has given more weight to the likelihood of this persisting (until the next Census rebenchmarking). This factor may be more specific to the OECD's particular accounting framework, as other forecasters give this much less emphasis.
4. OECD estimates now focus on economy-wide productivity whereas they used to be built up from estimates for the business sector (see endnote 1).
5. The recipiency rate in Figure 2.8 is higher than in Figure 2.7 due to the inclusion of veterans and SSI recipients and exclusion of the over-65 population.
6. The higher of the federal or state minimum for each state and the District of Columbia is multiplied by its share of national employment.

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ANNEX 2.A1

The OECD's decomposition of potential output

Potential GDP (GDPVTR) is assumed to reflect a Cobb-Douglas production function, with labour (LABOUR) and capital services (KTVS) as inputs, multiplied by total factor productivity (TFP):

$$GDPVTR = TFP * LABOUR^{0.68} * KTVS^{0.32}$$

Where 0.68 is the labour share* and most mnemonics are those used in the OECD's database. Taking logarithms and differencing shows changes in potential (approximately equal to percentage changes) as a function of growth in productivity, labour and capital.

$$\Delta\ln(GDPVTR) = \Delta\ln(TFP) + 0.68\Delta\ln(LABOUR) + 0.32\Delta\ln(KTVS)$$

Labour input, or aggregate hours, is the product of average hours (HRST) and potential employment (ETPT), the latter being measured as the trend in non-farm payrolls plus agricultural employment plus the self-employed.

$$LABOUR = HRST * ETPT$$

The household survey measure of potential employment (ETS) is the product of trends in population (POPT), the participation rate (LFPRS) and the employment rate at full employment (1 – NAIRU).

$$ETS = POPT * LFPRS * (1 - NAIRU)$$

Multiplying the household survey by the trend employment discrepancy (CLFS = ETPT/ETS) gives:

$$LABOUR = HRST * CLFS * POPT * LFPRS * (1 - NAIRU)$$

Taking logarithms, differencing and expressing as approximate percentage changes gives:

$$\Delta\%LABOUR \approx \Delta\%HRST + \Delta\%CLFS + \Delta\%POPT + \Delta\%LFPRS + \Delta\%(1 - NAIRU)$$

The elements of the right hand side are shown in Table 2.1.

* This is higher than the wage share shown in Figure 1.7 for several reasons, the most important of which is that it includes an estimate of the labour share of the self-employed.