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In recent years, the focus of economic theory has been on the role of the state. Critics have argued that the state is responsible for the inefficiencies and distortions in the economy. In contrast, others have argued that the state is necessary to provide public goods and to correct market failures. This book provides a critical analysis of the role of the state in the economy. It examines the impact of government intervention on the economy and discusses the implications for policy. The book is written in a clear and accessible style, making it suitable for both students and non-specialist readers.

Atkinson's book is a valuable contribution to the literature on the role of the state in the economy. It provides a clear and accessible analysis of the issues and is a must-read for anyone interested in the topic.

The M

Munich Lectures in Economics

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The Making of Economic Policy: A Transaction-Cost Politics Perspective, by Avinash Dixit (1996)

The Economic Consequences of Rolling Back the Welfare State, by A. B. Atkinson (1999)

In cooperation with the Council of the Center for Economic Studies of the University of Munich

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**The Economic
Consequences of
Rolling Back the
Welfare State**

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country may be irrelevant, or damaging, in another. As put to me by one reader of the draft version of these lectures, "a critical attitude to the Swedish welfare state does not imply that the British welfare state be rolled back."

The diversity of European Union countries is well illustrated by the projections of public pension expenditure published in *European Economy* (Franco and Munzi 1996), showing projected state spending on pensions as a proportion of GDP. We know that this figure is predicted to be high in Germany—around 17.5 percent in the year 2030—and in the Netherlands and France, but this is not true in all countries, notably in the United Kingdom, where the figure is little more than 5 percent. (In all cases I have taken the best case scenarios.) This makes a great deal of difference when considering the future. People who call for a reduction in spending on the welfare state of 1 or 2 percent of GDP, with pensions being a principal target, must recognize that such a reduction would have very different implications in different member states.

There was once a famous, probably apocryphal, English newspaper headline, "Fog in Channel: Continent Isolated," and no doubt I have been unduly influenced by what has happened in the United Kingdom. At the same time, the United Kingdom has perhaps advanced furthest of European countries in the direction of rolling back the welfare state, so that our experience may be of interest to those on the mainland.

2

Welfare State and Economic Performance: Aggregate Empirical Evidence

Does a large welfare state depress economic performance? Does it cause output to fall below potential or for the annual growth rate to be lower than in countries without such a level of transfers? In seeking answers it is tempting to look at measures of the size of spending on the welfare state, typically expressed as a proportion of gross domestic product (GDP), as in the OECD statistics for social security transfers (1997, Table 6.3). This is a common procedure in empirical studies, and it is my starting point here.

Some countries are well known to have relatively small welfare states. Figure 2.1 shows the OECD figures for the ratio to GDP of spending on social security transfers in 1995.² For the United States, the ratio was around 13 percent, which is considerably below the average for the European Union, which was 20 percent. The United States figure is virtually the same as that in Japan, and not very different from that in the United Kingdom, which was 15 percent (in 1994), but it is around half that in the Netherlands. Expenditure in Germany is about two percentage points below the European Union average, that in Sweden about three percentage points higher.

The relative positions of different countries have not always been the same. In some countries social transfers have

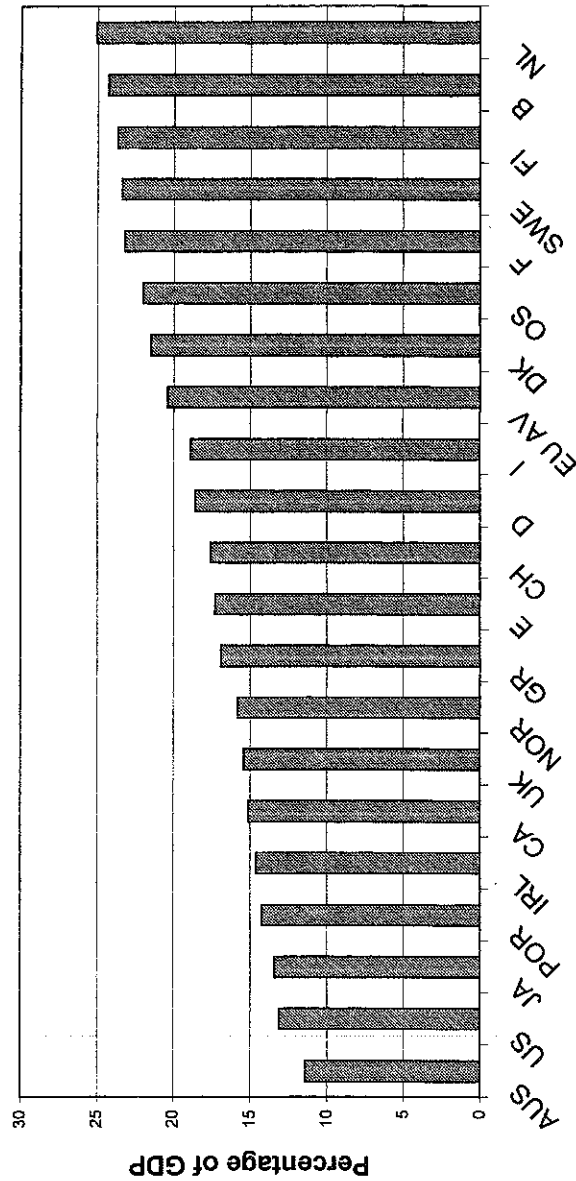


Figure 2.1. Social security transfers in OECD countries, 1995. Source: OECD 1995, table 6.3. The figures for Ireland and the United Kingdom relate to 1994; the figure for Portugal relates to 1993.

increased faster over time as a percentage of GDP than in others, as is shown for a selection of countries in figure 2.2. In 1960 West Germany had spending about half as large again as Sweden, but it was overtaken by Sweden around 1978, and the latter has now risen above France. It may also be noted that in the 1980s the United States and the United Kingdom both had governments pledged to rolling back the frontier of the state, but that spending at the end of the decade was much the same as at the beginning. The evidence on spending trends in figure 2.2 bears out the claim for the United Kingdom by Le Grand that "welfare policy successfully weathered ... an ideological blizzard in the 1980s" (1990, p. 350). Aggregate figures may, however, be misleading for reasons that are explored below.³

In this chapter, we see what can be learned by looking at the relation between aggregate social security spending and economic performance, seeking to identify different hypotheses and bring out the problems of interpretation.

2.1 Different Hypotheses

The availability of such aggregate data on a comparable basis for different countries means that it is tempting to see how far there is an association with differences in economic performance. A European Commission (1993) report, for example, has plotted social expenditure against the level of GDP per head. A version of this diagram, using the OECD social security transfer data described above, is shown in figure 2.3, where GDP per head is compared across countries using exchange parities that allow for differences in purchasing power. Although there is quite a lot of variation among countries with similar GDP per head (for example, between Italy and the Netherlands), there is clearly, within Europe, a tendency for

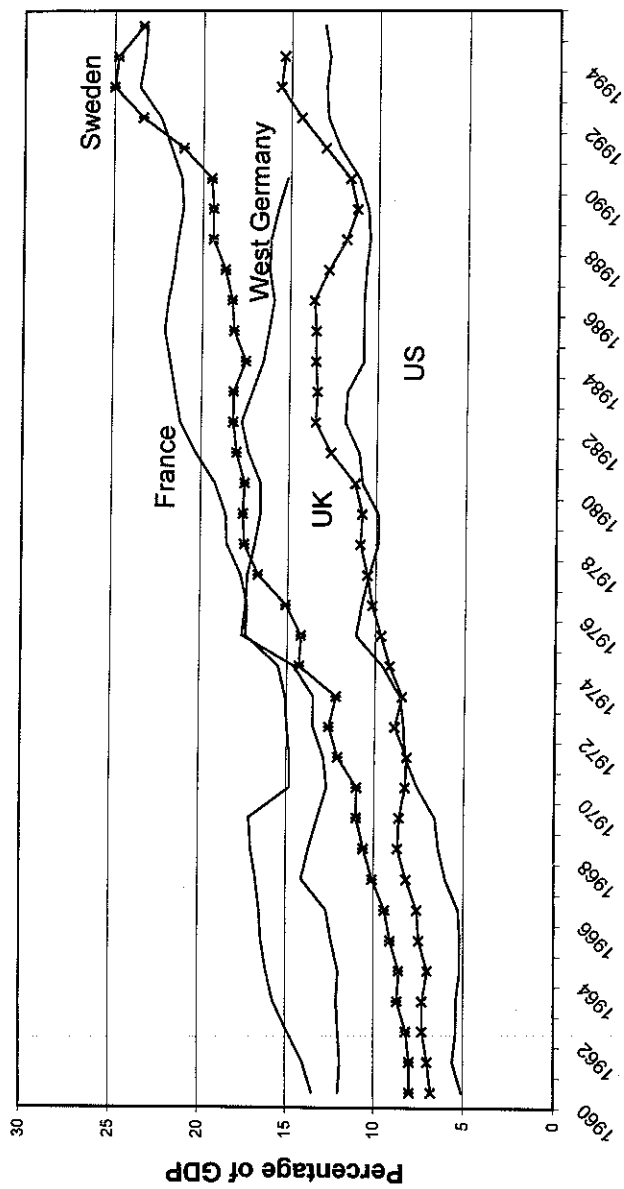


Figure 2.2 Growth of social security transfers, 1960–1995. Source: OECD 1995, table 6.3 (full set of data available on Statwise diskette). The figures for West Germany end in 1990.

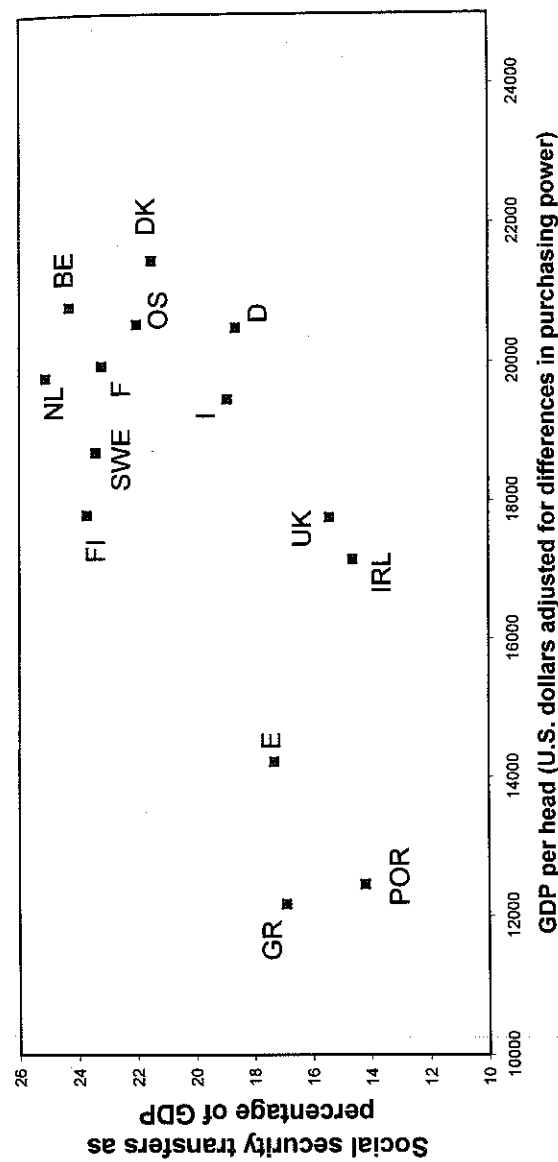


Figure 2.3 Social security transfers and GDP per head, 1995. Source: OECD 1995, tables C and 6.3. The social security figures for Ireland and the United Kingdom relate to 1994; the figure for Portugal relates to 1993.

the richer countries to have the largest welfare states. The countries with relatively low spending included, at that time, Greece, Ireland, and Portugal.

From this we draw at once one obvious lesson: a statistical correlation between economic performance indicators and the size of the welfare state cannot necessarily be ascribed to an underlying causal mechanism. One manifestly cannot argue directly from the observed relation that higher welfare spending leads to higher national income. While this is one hypothesis, the causation could well run the other way. It may be that it is successful countries, with high income per head, that can afford a more generous social security system. There is indeed a long history of studies in both political science and economics seeking to explain cross-country differences in the ratio of transfer spending to GDP by the level of national income and other variables, such as the existence of governments of different political complexions and the age of the social security system. Not all of these studies have found a significant relationship with GDP (for example, Aaron (1967) concluded that, at that time, a higher level of GDP was associated with a lower level of social security spending). Wilensky (1975) found that "[o]ver the long pull, economic level is the root cause of welfare-state development, but its effects are felt chiefly through demographic changes of the past century and the momentum of the programs themselves, once established" (p. 47). This direction of possible causality continues to be taken seriously; for example, a chapter in the recent *New Handbook of Political Science* (Hofferbert and Cingranelli 1996, p. 600) takes as an illustration of the comparative method an equation explaining unemployment insurance by the level of economic development (and the presence of social democratic governments).

Alternatively, there could be no causal relation between GNP and welfare state spending. Both variables may be asso-

ciated with a third mechanism. We could hypothesize that industrialization of the economy leads both to higher living standards and to the need for social security. Employment in industry, with its risk of catastrophic income loss, creates the role for social insurance; increasing occupational specialization increases income risk. We might therefore expect France or Germany to have larger welfare states than countries like Greece or Portugal, which have a higher proportion of the population in traditional or informal sectors.

A second lesson that emerges at this juncture is the need to distinguish between two different versions of the causal hypothesis. The first is that there is a relation between the size of the welfare state and the level of GDP. This kind of association is referred to below as a *Levels Hypothesis*. Alternatively, there could be a relation between the size of the welfare state and the rate of growth of GDP. This kind of relationship is referred to as a *Growth Rate Hypothesis*. The distinction between these two hypotheses is illustrated in figure 2.4. Suppose there are two countries, A and B, identical in all relevant respects until the date marked with an arrow. At that date, spending on the welfare state is changed in country A in such a direction as to have beneficial consequences for GDP. In the case of the Levels Hypothesis, shown by path 1, we would expect country A to grow faster initially, but to tend to a higher level of GDP. In the long run it grows at the same rate as country B. In contrast, with the Growth Rate Hypothesis GDP grows permanently at a higher rate in country A than in country B (see path 2 in figure 2.4). In the latter case, the paths of GDP would steadily diverge, a prospect that seems to generate much of the anxiety expressed in public debate. People seem to have a particular fear of falling progressively further and further behind their neighbors.

In reality it may be difficult to distinguish between the early years of the two paths shown in figure 2.4. We may not know

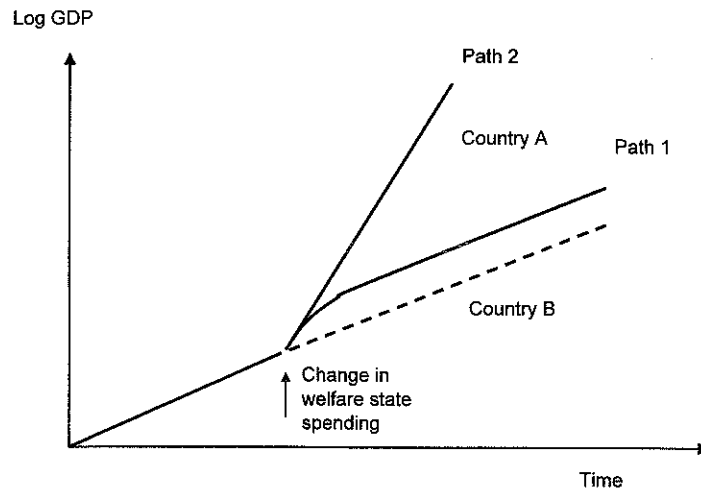


Figure 2.4
Levels Hypothesis and Growth Rate Hypothesis

whether the higher growth rate in country A will be sustained. Nonetheless, the distinction is an important one in principle since it points to rather different kinds of economic models. The levels hypothesis has typically been framed in terms of the relation between output and employment, the argument being that the welfare state leads to higher unemployment or nonparticipation in the labor force. Here we are in the territory of the macroeconomics of the labor market. In most macroeconomic textbooks this is to be found in a different chapter from the growth theory that underlies the growth rate version of the hypothesis. It is with the latter that I begin here.

2.2 Econometric Studies of Aggregate Growth Rates

Can the level of social transfers, expressed as a proportion of GDP, explain part of the differences in growth rates? In 1980

the ratio of spending to GDP in the Netherlands was 15 percentage points higher than in the United States (OECD 1992, table 6.3). What would have happened if the Netherlands had cut its spending by $7\frac{1}{2}$ percentage points and the United States had increased its spending by the same amount? How would growth rates have differed since 1980? Would the United States have been handicapped?

For some people it is self-evident that the scale of social transfers is an important determinant of the trend rate of growth. Other people do not even include this variable in extensive lists of explanatory variables. For instance, Barro in his cross-country empirical studies (1997; Barro and Sala-i-Martin 1995) finds that government consumption lowers the growth rate, but does not look at social transfer expenditure. The OECD review of the determinants of productivity performance (Englander and Gurney 1994) does not highlight the welfare state. Nor can one extrapolate from studies that look at total government expenditure, since the impact of different types of government spending may be quite different. For instance, Smith (1975) found that the growth rate of real GDP per capita in the period 1961–1972 was negatively related to public spending excluding transfers, but that the effect was smaller and less significant when public spending included transfers. He argues that “it is less economically harmful for the state to raise taxes and make transfer payments than to consume resources directly” (p. 29). Without necessarily accepting that all resource use is harmful for economic growth (for example, research outlays may contribute to raising growth rates), we clearly need to look at transfer spending on its own. What is more, we have to distinguish between different types of transfer. Payment of debt interest, for example, appears to be a separate category that needs to be excluded when considering the impact of social transfers. Similarly,

we want to distinguish between transfers to households and transfers to companies. Grants to a company to encourage it to open a factory in Wales cannot be expected to have an identical economic impact to that of unemployment benefit paid to ex-miners in Wales.

It is also evident that in considering how far countries with large welfare states have grown more slowly, we must control for other influences on economic performance. Wall (1995) has shown that in a regression of growth rates on dummy variables as to whether countries play baseball or cricket, baseball playing countries have significantly higher rates of growth. Although he says that the empirical results speak for themselves, I suspect that they do so with their tongues firmly in their cheeks. In order to learn about the impact of the welfare state, or of sport, we have to embed the statistical analysis within a model of the determinants of growth, as in the work on growth empirics by Barro (1991) and Mankiw, Romer, and Weil (1992).

A central model used in the literature on growth is that based on an aggregate production function, where aggregate output (GDP), Y , is a function of capital, K , and labor, L . In the literature on the sources of growth (Solow 1957; Denison 1962, 1967), it is common to decompose the growth rate into the separate contributions of capital and labor, with the residual being attributed to productivity growth. This can be done straightforwardly in the case of the Cobb-Douglas version of the production function with constant returns to capital and labor:

$$Y = AK^\beta L^{1-\beta}, \quad (2.1)$$

where A denotes the level of productivity, so that technical progress is reflected in the growth of A . This functional form is used below, but it should be remembered that it is a special

form. As is well known, it has the property that the competitive share of profits in the value of output is constant, equal to β , with the competitive share of labor equal to $(1 - \beta)$. We may write in the Cobb-Douglas case:

Growth rate of GDP

$$\begin{aligned} &= \beta \times \text{Growth rate of capital} \\ &+ (1 - \beta) \times \text{Growth rate of labor} \\ &+ \text{Rate of technical progress.} \end{aligned} \quad (2.2)$$

The logic of this decomposition has been questioned by a number of authors, who see these elements as interdependent: the rate of productivity growth depending on the rate of investment. I return to this argument in chapter 6 when discussing new growth theory. If, however, the decomposition (2.2) is valid, then we can identify separate channels by which the welfare state may influence the rate of growth. Social transfers might affect either the growth of factor supply (capital and labor) or the growth of productivity, or of course both. The payment of pay-as-you-go state pensions, for instance, may reduce capital formation, and hence the growth of output by an amount which depends on β . Alternatively, the existence of a social safety net may encourage the risk-taking necessary to engage in the inventive activity that leads to new ideas and new techniques of production. This would show up in the rate of technical progress, that is, in the growth of factor productivity.

There have been a number of empirical studies of aggregate growth examining in this way the role of social transfers, and ten such studies are brought together in the appendix.⁴ The main features are summarized in table 2.1. The table shows that part of the findings of these studies that relates to transfer

Table 2.1
Summary of studies of growth rates and social transfers

Study	Coverage	Period	Countries	Results: effect of 5 percentage point reduction in WS
Landau 1985	Pooled time series/ cross-section	Annual growth rates 1952-76	16 OECD inc. Japan	NOT SIGNIFICANT
Korpi 1985	Mixed time series/ cross-section	Period 1950-73 and subperiods	17 OECD exc. Japan	0.9 percentage point reduction in annual growth rate
Weede 1986	Pooled time series/ cross-section	1960-82 subperiods	19 OECD inc. Japan	1 percentage point increase in annual growth rate
McCallum and Blais 1987	Pooled time series/ cross-section	1960-83 subperiods	17 OECD inc. Japan	0.5 percentage point reduction in annual growth rate
Castles and Dowrick 1990	Pooled time series/ cross-section	1960-85 subperiods	18 OECD inc. or exc. Japan	0.3-4 percentage point reduction in annual growth rate
Weede 1991	Pooled time series/ cross-section	1960-85 subperiods	19 OECD inc. Japan	0.5 percentage point increase in annual growth rate
Sala-i-Martin 1992	Cross-country	1970-85	74 world- wide	0.6 percentage point reduction in annual growth rate
Nordström 1992	Cross-country	1977-89	14 OECD inc. or exc. Japan	0.6 percentage point increase in annual growth rate
Hansson and Henrekson 1994	Cross-country/ cross-industry	1970-87	14 OECD inc. Japan	NOT SIGNIFICANT
Persson and Tabellini 1994	Cross-country	1960-85	13 OECD inc. Japan	0.3 percentage point increase in annual growth rate

payments; it should be stressed that the authors cited are not concerned solely with the impact of social transfers, and that in some cases it represents only a minor part of their results. To give a flavor of the approach adopted, we may take the study by Castles and Dowrick (1990), which was explicitly concerned with the impact of government spending. They estimated a set of regression equations based on equation 2.2, with the addition of the following variables: initial per capita GDP (catch-up variable), index of institutional sclerosis, and government expenditure variables. The same variables, and population growth, are assumed to enter the determination of the growth rate of capital and employment, and hence allow us to compare the effect of welfare state spending on factor productivity with that on the total growth rate.

The results of this kind of aggregate analysis are mixed, as may be seen by looking at the last column in table 2.1, which shows the predicted impact of a reduction in welfare state spending equal to 5 percentage points of GDP (approximately the difference between Austria and Greece). The studies are classified into three groups: those that find no significant relation between welfare state spending and the rate of growth (shown in capitals), those that find a significant negative relation (shown in ordinary type), and those that find a positive relation (shown in italics). Of the ten studies, two (Landau 1985 and Hansson and Henrekson 1994) find an insignificant effect of the transfer variable on annual growth rates, four (Weede 1986; Weede 1991; Nordström 1992; and Persson and Tabellini 1994) find that transfers are negatively associated with average growth, and four (Korpi 1985; Castles and Dowrick 1990; McCallum and Blais 1987; and Sala-i-Martin 1992) find a positive sign to the coefficient of the transfer variable. According to Weede, "social security transfers reduce growth rates rather strongly" (1986, p. 506), whereas, according to

Korpi, "social security expenditures ... show positive and significant relationships with economic growth" (1985, p. 108).

2.3 Assessing the Findings about Growth Rates

Simple "vote counting" among different studies is a potentially misleading way of summarizing the findings (Hedges and Olkin 1985, chapter 4), and a more systematic approach is desirable. Several readers of the first draft of these lectures have indeed asked why I have not applied meta-analysis (formal methods for combining evidence across studies). The situation is, however, different from that where meta-analysis is applied in fields such as education or social psychology, where different studies use different samples of, say, college students. Here, there are some issues related to the selection of data: for example, sensitivity in some, but not all, cases to the country coverage, notably the inclusion or exclusion of Japan (see table 2.1). There are also differences in the time period covered or the subperiods selected. But, in a broad sense, the same macroeconomic data underlie the studies reviewed here, and the issue is largely one of model specification, not of different datasets.

Several authors have sought to reconcile the differences in findings that arise from different specifications, including Saunders (1986), McCallum and Blais (1987), Castles and Dowrick (1990), and Weede (1991).⁵ Even if they do not adopt a formal approach to model selection, these authors have added to our understanding by comparing their results with those of earlier studies and seeking to explain the differences in findings.⁶ Among the explanations that have been advanced are:

1. differences between studies seeking to explain the total growth rate (total effect), and those explaining the growth of factor productivity,

2. differences of view as to whether it is appropriate to include dummy variables shifting the intercept for different subperiods,
3. different definitions of the social transfer variable, in particular the inclusion in some cases of other government transfers apart from social security; as already noted, one would expect the impact of subsidies to firms to be rather different,⁷
4. different right-hand variables apart from social transfers, such as the "institutional sclerosis" variable included by Castles and Dowrick (1990).

The appendix table differentiates between studies seeking to explain the total growth rate and those explaining the growth of factor productivity as in the model (2.2), controlling for the contribution of factor input growth (investment and employment). Castles and Dowrick (1990) find different results for the total growth rate and for factor productivity. Social transfers, on this basis, have a positive effect on productivity but a negative impact on factor supply, leaving the total growth rate unchanged. This pattern is not, however, consistent with the results of other studies of the total effect that find either a positive or a negative effect on the total growth rate. Nor is it consistent with those studies that have found a negative or insignificant effect on productivity, such as Landau (1985) and Hansson and Henrekson (1994).

The studies listed in table 2.1 have used a variety of methods to overcome the problem of establishing the direction of causality. Some use the initial period value of the social transfer variable on the grounds that regressions of growth rates of GDP on initial levels of the transfer variable would not be subject to simultaneity. This, however, raises an issue concerning the dynamic specification of the estimated relationship. Suppose there is a negative relationship between social

transfers and the level of GDP. In an econometric equation with GDP as the left-hand variable, we might want to include both current and lagged values of the transfer variable in order to allow for delayed responses to changes. For instance, if higher pensions were to reduce aggregate savings, then the capital stock, and hence output, would fall gradually to its new long-run level. But what long-run restrictions do we want to impose on the estimated relationship? As has been stressed in time series econometrics, it is here that economic theory has an important role to play.

There are indeed two different theoretical predictions, as we have seen earlier. The first is that described above as the Levels Hypothesis, where GDP depends on the size of the welfare state. A cut in social spending induces a temporary rise in the growth rate as GDP rises to its new equilibrium level, but there is no permanent increase in the rate of growth. Cast in growth rate terms, the growth rate is related to the change in the level of spending.⁸ The alternative theoretical model is that where the level of transfers affects the long-run rate of growth, referred to above as the Growth Rate Hypothesis. In this case, a cut in the welfare state is predicted to raise the growth rate permanently. An explicit distinction between these two hypotheses and the restrictions on coefficients that they imply might help sort out the differences in the empirical studies.

The next generation of aggregate empirical studies will no doubt build on earlier work, and a systematic exploration of the different dimensions should reduce the degree of variety in the results. Not all specifications are equally appropriate, and more sophisticated econometric procedures may lead to results that exhibit greater robustness. At the same time, I must confess to doubts whether effects of the size estimated to date are really plausible. Suppose we go back to the counter-

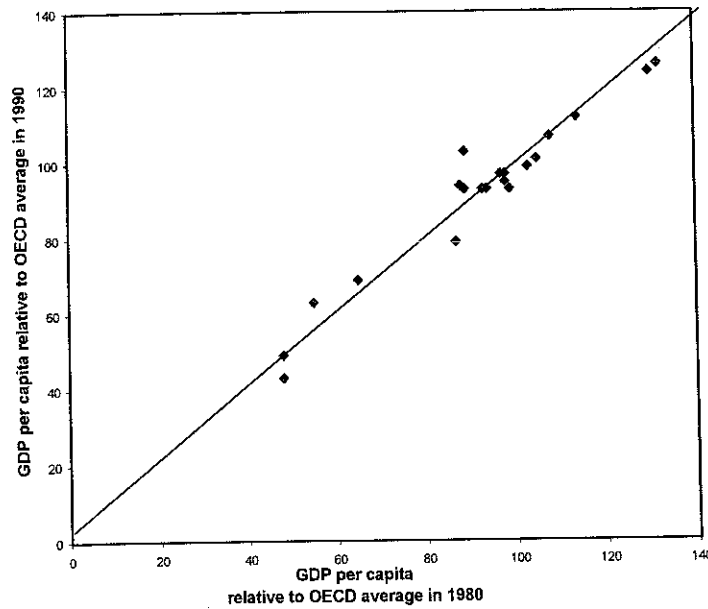


Figure 2.5
GDP per head of OECD countries (adjusted for purchasing power differences) in 1990 compared with 1980. Source: OECD 1994b, p. 145. Iceland, Luxembourg, and Turkey are not included.

factual question posed at the outset of the previous section. In 1980 the ratio of spending to GDP in the Netherlands was 15 percentage points higher than in the United States. What would have happened if the Netherlands had cut its spending by $7\frac{1}{2}$ percentage points and the U.S. had increased its spending by the same amount? How would economic performance have been different?

To see this, I have plotted in figure 2.5 the relationship between relative GDP per head (measured in terms of purchasing power) in different OECD countries in 1990 compared with 1980. In each case the GDP per head is expressed relative to

the average, so that a country at 100 in both years is at the average in both. Some countries, like Spain, Finland, and Luxembourg, lie above the 45° line, indicating that they have grown faster than the average; others, like the Netherlands and Switzerland, lie below. But, overall, countries tended to grow over the decade at broadly the same rate. Most are close to the 45° line.

I now consider what would have happened if Netherlands and the United States had changed their policy in the way described, using two of the estimated relationships: that of Weede (1986) and that of Korpi (1985). The first of these studies finds that the welfare State has a large negative effect on growth, so that elimination of the differences means that countries with large welfare states, like the Netherlands, are predicted to perform better without this handicap. The reverse is true of the United States. The findings for these two countries are shown in figure 2.6 by the squares marked NL- and US-, respectively. What is striking is the quantitative magnitude: Netherlands would, on this set of estimates, have nearly caught up the U.S. in a decade. I do not find this entirely believable. Nor do I find the reverse believable. In figure 2.6 the point NL+ (US+ is off the graph) shows what would have happened if larger social transfers improved growth, as in the estimates of Korpi (1985), so that a leveling up of spending in the United States now means that it performs better. Conversely, the Netherlands, without the predicted boost it gets to its growth rate from its large social transfers, is now nearly caught by Spain during the decade.

2.4 Econometric Studies of Unemployment

Does social protection cause unemployment? For some people, the empirical evidence is clear. According to Krugman:

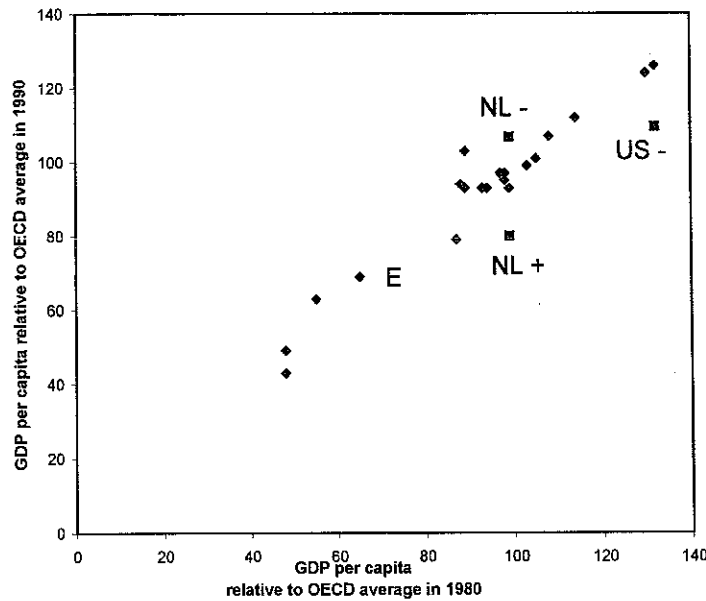


Figure 2.6
GDP per head in 1990 compared with 1980: Predicted in 1990 for United States and Netherlands. Source: see figure 2.5 and text.

Cross-country regressions, like those of Layard, Nickell and Jackman (1991), do find that measures of the level of benefits have strong positive effects on long-term averages of national unemployment rates. (1994, p. 59)

The results of Layard, Nickell, and Jackman (1991) are based on a statistical regression equation seeking to explain the average unemployment rate from 1983–1988 in twenty OECD countries in terms of labor market institutions such as the benefit variables, spending on active labor market policies, and wage bargaining institutions. (A more recent study combining the data for 1983–88 with those for 1989–94 has been

carried out by Nickell (1997).) Their work represented a major step forward in that it based the statistical analysis on an explicit theoretical model of the macro labor market. It was not just a case of rounding up the usual suspects and putting them into a regression equation.

The Layard, Nickell, and Jackman study is also distinguished by its treatment of the benefit variables. The problem of the measurement of the size of the welfare state has been extensively discussed in the literature on “welfare effort,” where writers on social policy have sought to relate this variable to the success of different countries in reducing poverty or income inequality (for example, Mitchell 1991). However, statistics like those shown in figure 2.1 can be quite misleading. The level of spending relative to GDP does not necessarily provide an indication of the level of benefit per recipient, as is demonstrated in the following decomposition:

$$\begin{aligned} \text{spending/GDP} &= (\text{average benefit/average wage}) \\ &\quad \times (\text{average wage/GDP per worker}) \\ &\quad \times (\text{recipients/workers}). \end{aligned} \quad (2.3)$$

The first term is usually referred to as the *replacement rate*, the second is the *wage share*, and the third is the *dependency ratio*. So that a spending ratio of 15 percent of GDP may correspond to a replacement rate of 75 percent with a wage share of 60 percent and a dependency ratio of 1/3, or to a replacement rate of 30 percent with a wage share of 75 percent and a dependency ratio of 2/3. Put another way, countries may differ in the extent of needs: one may have a high spending ratio on account of a large dependent population, not on account of a generous social security program. Spending in another country may be low because it is successful in managing its macro-economy rather than because it attaches low priority to social

welfare. This is relevant if it is the generosity of benefit levels which is believed to have an adverse impact on economic behavior; since a high level of welfare state spending does not necessarily imply a high level of generosity.⁹

The distinction between benefit generosity and aggregate spending is important when considering the historical record. In the United Kingdom, aggregate spending, as shown in figure 2.2, has not fallen dramatically, but the generosity of benefits has been reduced in a way not paralleled in other European countries. Two indicators particularly relevant to the fields discussed in this book are the level of the basic state pension and the replacement rate offered by unemployment insurance and assistance. The basic state pension is received almost universally by those over the minimum pension age and is paid at broadly a uniform cash rate. In the past this rate rose more or less in line with incomes elsewhere in the economy, but since the early 1980s it has been indexed only to retail prices, implying that it has fallen as a percentage of average incomes: between 1979 and 1990 it fell from 42 percent of average equivalent income (i.e., income adjusted for differing household composition by an equivalence scale) to around 33 percent. If the policy is continued, it will fall to less than a quarter in 2010. As far as the unemployed are concerned, the replacement rate in the United Kingdom, already low by the standards of Belgium, Germany, and the Netherlands, was significantly reduced between 1981 and 1991, as benefits have been cut back and coverage reduced.

The equation of Layard, Nickell, and Jackman (1991) explaining cross-country variation in unemployment contains measures of both replacement rates and of benefit duration (which affects the recipient rate). They find statistically significant coefficients for both variables, a finding which has been widely cited (for example, in the review for the OECD by

Elmeskov (1993) of the causes of high and persistent unemployment). According to the estimated coefficients, a rise in the replacement ratio of 10 percentage points is associated with a rise in the average (over time) unemployment rate of 1.7 percentage points. An increase in the maximum duration of unemployment benefit of one year is associated with an increase in the unemployment rate of 0.9 percentage points. These are large effects: they mean that Germany, with long benefit duration and a replacement rate of 63 percent, would be predicted to have, on average, an unemployment rate more than 5 percentage points higher than the United States. At the same time, we should bear in mind the confidence intervals surrounding these estimates: the 95 percent confidence interval for the effect of duration is from 0.3 percentage points to 1.5 percentage points.

Attention has been concentrated above on the effects on unemployment, whereas we may be more concerned about the effect on employment, the difference being nonparticipation in the labor force. Nickell (1997) found in his cross-section study that benefits had little impact on employment/population ratios: "[W]hile high benefits lead to high unemployment, they also lead to high participation because they make participation in the labor market more attractive" (p. 67). This will be a theme that recurs in the theoretical chapters.

2.5 Assessing the Findings about Unemployment

The findings of Layard, Nickell, and Jackman differed from those of earlier studies that had identified no relation between benefits and aggregate unemployment. These earlier studies included that by the OECD Employment Outlook in 1991, which related unemployment in 1987 (as a percentage of the population of working age) to the average replacement rate

for three different family situations. They concluded that "there is no correlation between this general replacement rate indicator and the overall unemployment rate" (p. 204–208). In the subsequent Jobs Study, the OECD set out three reasons why its earlier findings may have been misleading (1994a, p. 177). There are in fact several reasons for being cautious about drawing firm conclusions:

- causality may be difficult or impossible to establish,
- a more subtle analysis of the timepath of responses may be necessary,
- it may be difficult to isolate from aggregate data the influence of specific benefit programs.

The problem of determining causality has already been considered in relation to growth performance, and applies equally here. It may be that there is a relation between benefit generosity and unemployment, but that this is obscured by both variables being related, in opposite ways, to a third variable. The OECD (1994a) refers to the example that Southern European countries with high levels of agricultural employment, self-employment, and concealed employment may have also high reported unemployment, but the same factors have retarded the development of benefit programs. On the other hand, there may be reverse causation with either sign: countries with low unemployment can "afford" more generous unemployment benefit programs, or countries prone to unemployment "need" more extensive programs (we would not be surprised to find more malaria hospitals in tropical countries).

In seeking to relate country differences in unemployment to differences in benefit variables, we have been implicitly assuming a contemporaneous relationship between social transfers and unemployment, but it may be a dynamic one in the

sense that behavior adjusts only with a lag. Lindbeck (1995a, 1995b) has argued that individual responses are influenced by social norms that adapt over time. Initially the welfare state did not affect labor market behavior, but over time people became more willing to live off unemployment benefits and the negative impact began to be important. In order to test this hypothesis, evidence is required about the formation of social norms and their impact on labor market behavior.¹⁰

In aggregate terms, we need to allow for lagged effects (see, for example, OECD 1994a), but the specification is a matter where we need to exercise considerable care. As emphasized by Layard, Nickell, and Jackman (1991), the welfare state may affect the speed of response to exogenous shocks. Unemployment may have risen initially for reasons unconnected with the welfare state, and these shocks may have affected all countries in much the same way, but, according to this argument, those countries with smaller welfare states responded more quickly. The econometric estimates of Layard, Nickell, and Jackman based on both cross-country and time-series variation bear this out to the extent that the degree of persistence of unemployment depends significantly and positively on the benefit duration variable (but not on the replacement rate). Adjustment is faster in countries where benefits are paid for shorter periods. The dynamic specification of employment models is an aspect that needs to be carefully treated, as in the growth rate studies; indeed, the two may be related in that employment may be adjusting to a moving target (see Karanassou and Snower 1998).

The third reason for caution is that it may be difficult to isolate from aggregate data the specific influence of benefit programs. For instance, let us take the duration of unemployment benefit, to which Layard, Nickell, and Jackman attach great importance: "The unconditional payment of benefits for

an indefinite period is clearly a major cause of high European unemployment" (1991, p. 62). Their cross-country data for unemployment in 1983–8 and unemployment benefit duration (in 1985) are plotted in figure 2.7. This immediately brings out several aspects. The first is the concentration of durations on four years. In fact they treat cases with an indefinite period as four years, so that what we have in effect is a distinction between those with time-limited and those with indefinite benefits. It is more a 0/1 difference. Then there is the curious position of the Scandinavian countries, marked by squares rather than diamonds. Curious in that we would expect them to be among the generous, whereas they are shown as having short benefit durations. In fact this seems to be a misreading. According to a comparative study organized by the Dutch Government, "In Sweden it is possible to renew the benefit period by claiming a 'job-offer' before the initial period expires.... This can be repeated over and over again" (Ministry of Social Affairs and Employment 1995, p. 44). The OECD Jobs Study similarly states, "In Denmark, Norway and Sweden, the guarantee for the long-term unemployed of a place on an active labour market programme, which lasts just long enough to generate a new period of benefit entitlement, has made it possible to receive insurance benefits almost indefinitely: Sweden becomes a country with high rather than low benefit entitlements when this is taken into account" (1994, p. 176). If we were to shift Scandinavia to the indefinite category, we would get a rather different picture. Most of Europe would be on the right, with only Italy, Portugal, and Switzerland on the left. There are really two spikes, and there is evidently a lot of variation at both spikes.

Clearly the statistical analysis needs to be more sophisticated than simply eyeing a graph, but equally I believe that one has to ask what lies behind econometric results. How far

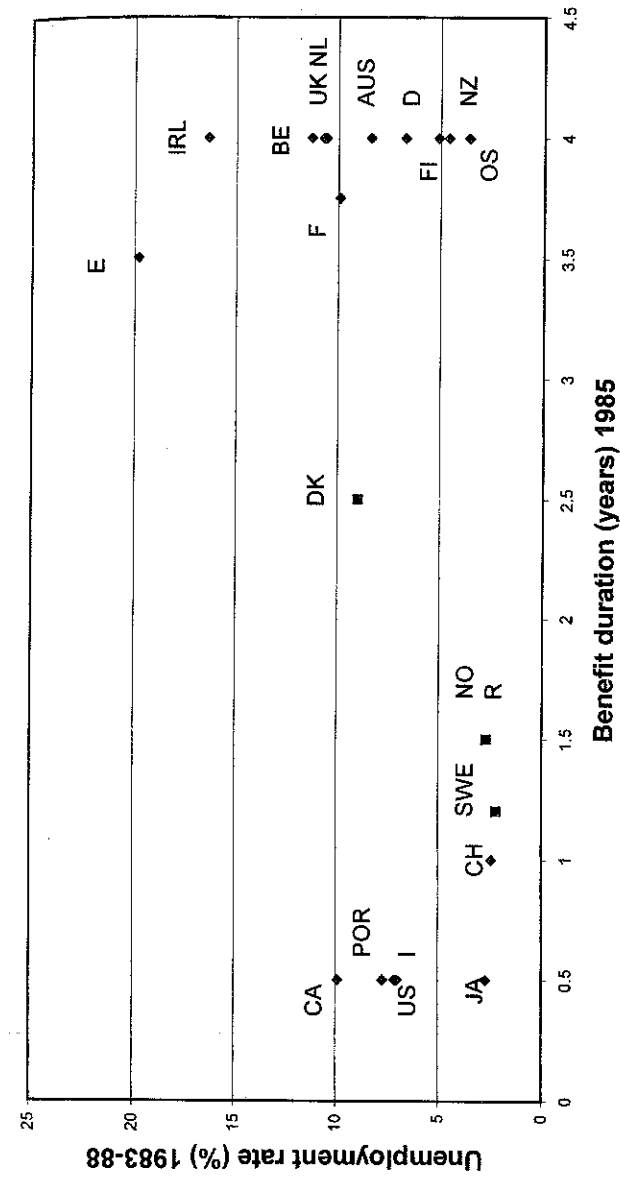


Figure 2.7
Unemployment rates and benefit duration. Source: Layard, Nickell, and Jackman 1991, p. 51.

are we identifying the contribution of the particular policy variable? Can we separate out the impact of benefit duration? It is important to see benefit provisions as forming part of a whole, an idea encapsulated in the title of an article by Freeman called "The Large Welfare State as a System" (1995). Drawing on the NBER-SNS study of Sweden (Freeman, Swedenborg, and Topel 1997), Freeman concludes that it is "a highly inter-related welfare state and economy in which many parts fit together ... in ways that maintained high employment and wage compression, that offset work disincentives from welfare benefits and high taxes" (1995, p. 18).

Among the other parts of the story are "off-budget activities" (Saunders 1986), such as the regulation of the private sector or minimum wage legislation. Recently attention has turned to mandating the employer provision of benefits, shifting the burden from the state budget to firm payrolls. This has evident attractions for policymakers: "In an era of tight fiscal budget constraints, mandating employer provision of workplace benefits to employees is an attractive means for a government to finance its policy agenda" (Gruber 1994a, p. 622). The economic consequences of such benefits cannot, however, be ignored simply because they have been shifted to employers. They may also have fiscal implications. Not only may they reduce taxable profits, but also they may be accompanied by fiscal concessions. It is of course open to question how far such mandating of benefits is a binding constraint (on employer-related health insurance in the United States, see Gruber 1994b).

The interrelations of the system are one reason I am not convinced that one can learn a lot from simply cross-country evidence. Countries differ in a variety of ways, and one cannot easily pull out one variable as responsible for the observed differences in performance.

2.6 Conclusion

Aggregate cross-country evidence, interesting though it may be, cannot on its own provide a reliable guide to the likely consequences of rolling back the welfare state. Fifteen years ago Maddison stated:

It is difficult to reach strong conclusions on the influence of the welfare state on economic development because the evidence does not warrant them. Strong judgements on the question are influenced mainly by ideological positions, or predictions about what might happen in the future. (1984, p. 83)

Since then, we have seen some of the future, but the position is not a great deal clearer. There are still grounds for agnosticism. Sandmo, for example, after a review of the aggregate empirical evidence about a possible trade-off between growth and social security, concluded that "the adoption of the Nordic model of social security does not have catastrophic consequences for economic growth, nor is it a guarantee of economic success" (1995, p. 4). He goes on to say that

theoretical hypotheses and data analysis at this level do not reveal the more basic structural features of the economy. To understand the connections that there *may* be, we need first of all to look into the theoretical underpinnings of the tradeoff hypothesis, and secondly to consider whether there may be some arguments that point in the opposite direction. (1995, p. 4)

I read this passage after embarking on this study, but it provides a clear statement of what I am seeking to do in the remainder of these lectures.

Appendix:
Studies of Growth Rate and Social Transfers

Study	Landau 1985	Korpi 1985	Weede 1986	McCallum and Blais 1987	Castles and Dowrick 1990
Dependent variable	Real per capita GDP Pooled time series/ cross-section	Real per capita GDP Mixed time series/ cross-section	Real GDP and real per capita GDP Pooled time series/ cross-section	Real GDP Pooled time series/ cross-section	Real per capita GDP Pooled time series/ cross-section
Period	Annual growth rates 1952-1976	Period 1950-73 and sub-periods 1950-59, 60-66, 67-73, 73-79	Period 1960-82 and sub-periods 1960-68, 68-73, 73-79, 79-82	Sub-periods 1960-67, 67-73, 73-79, 79-83	Sub-periods 1960-68, 69-73, 74-79, 80-85
Countries	16 OECD (inc. Japan)	17 OECD (exc. Japan)	19 OECD (inc. Japan)	17 OECD inc. Japan	18 OECD or 17 exc. Japan
Model and variables	Model (2.2), with human capital (education), GDP (catchup), terms of trade (openness), country intercepts	Total effect, but controls for % labor force in agriculture or GDP per capita (catchup)	Total effect, but controls for % agricultural employment, age of democracy	Model (2.2) but exc. investment, with log GDP per capita (catchup), modernization, growth of govt exp/GDP, subperiod dummies	Model (2.2), with log GDP per capita (catchup), sclerosis, sub-period dummies

Definition of transfer variable	General government transfers (OECD national accounts)/GDP (different deflators)	ILO social security expenditure/GDP	OECD social security transfers/GDP (from Historical Statistics) adjusted for % aged 65+	OECD social security transfers/GDP (from Historical Statistics) adjusted for % aged 65+	OECD social expenditure less health and education, extended 1982-85 using OECD national accounts
Coefficient on WS (standard error)	0.012 IV, HS corrected (0.037)	1950-73: 0.193 (0.050) 1973-79: 0.182 (0.064) Similar with catchup variable	-0.21 (n/a) or -0.19 (n/a) exc. Japan and Switzerland	0.12 for 1960-79 (0.03) 0.31 WS - 0.0092 WS ² (0.09) (0.0031) for 1960-83	Controlling for emp and inv 5.24 or 7.45 (3.54) (3.53) Not controlling exc. Japan 1960-68 -1.01 or 1.93 (3.74) (3.45)
Effect of 5 percentage point reduction in WS	Not significant at 5% level	0.9 percentage point reduction in annual growth rate	1 percentage point increase in annual growth rate	0.5 percentage point reduction in annual growth rate (1960-79 estimate) zero at WS = 16.8% with 1960-83 estimates	Controlled estimates: 0.3-0.4 percentage point reduction in annual growth rate of total factor productivity

Appendix (continued)

Study	Weede 1991	Sala-i-Martin 1992	Nordström (1992)	Hansson and Henrekson 1994	Persson and Tabellini 1994
Dependent variable	Real GDP, per capita GDP, and per person employed Pooled time series/cross-section	Real per capita GDP Cross-section	Real GDP Cross-section	Real private output in 14 industry/service sectors Cross-country/cross-industry	Real per capita GDP Cross-section
Period	Sub-periods 1960-68, 68-73, 73-79, 79-85	1970-85	1977-89	1970-87	1960-85
Countries	19 OECD inc. Japan	74 countries world wide	14 OECD inc. Japan or 13 exc. Japan	14 OECD inc. Japan	13 OECD inc. Japan
Model and variables	Total effect and productivity per person employed, with agricultural employment, age of democracy	Model (2.2), but exc. employment, with log GDP per capita (catchup)	Total effect	Model (2.2), with catchup variable	Total effect, with GDP per capita (catchup variable), % attending primary school

Definition of transfer variable*	OECD social security transfers/GDP (from Historical Statistics)	Public transfers	Other current transfers in OECD National Accounts	OECD social security transfers/GDP (from Historical Statistics)	OECD social expenditure series/GDP (pensions + unemployment comp. + other social exp)
Coefficient on WS (standard error)	Productivity results: -0.111 (n/a) or -0.084 (n/a) exc. Japan	0.111 (0.054)	-0.120 (0.034) Table 1, col 2 (and similar results for other specifications) -0.119 (0.039) exc. Japan Table 2, col 2	-0.063 (0.036) Table 4, eqn (xi) for WS average 1965-82 or -0.050 (0.035) eqn (xii) for WS average 1970-87	-6.723 (5.396) Table 8, eqn (iii)
Effect of 5 percentage point reduction in WS	0.5 percentage point increase in annual growth rate of productivity	0.6 percentage point reduction in annual growth rate	0.6 percentage point increase in annual growth rate	Not significant at 5% level (but significant negative coefficient for total transfers)	0.3 percentage point increase in annual growth rate

Note: *measured in percentage points apart from Castles and Dowrick 1990 and Persson and Tabellini 1994, which are measured as fractions of GDP.