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# "Why the Welfare State Looks Like a Free Lunch"

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## ABSTRACT

The econometric consensus on the effects of social spending confirms a puzzle we confront in the raw data: There is no clear net GDP cost of high tax-based social spending on GDP, despite a tradition of assuming that such costs are large. This paper offers five keys to this free lunch puzzle. First, it shows conventional analysis imagines costly forms of the welfare state that no welfare states have ever practiced. Second, better tests confirm that the usual tales imagine costs that would be felt only if policy had strayed out of sample, away from any actual historical experience. Third, the tax strategies of high-budget welfare states are more pro-growth and less progressive than has been realized, and more so than in free-market OECD countries. Fourth, the work disincentives of social transfers are so designed as to shield GDP from much reduction if any. Finally, we return to some positive growth and well-being benefits of the high welfare budgets, and then pose theoretical reasons why democracy may exert a crude form of cost control.

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This paper draws on Chapters 10, 12, 18, and 19 in a two-volume book on *Social Spending and Economic Growth since the Eighteenth Century,* forthcoming in late 2003 from Cambridge University Press. The seminar presentation begins with overall conclusions, and then emphasizes Parts III and beyond.

It is well known that higher taxes and transfers reduce productivity. Well known -- but unsupported by statistics and history. This paper dramatizes a conflict between intuition and evidence. On the one hand, many people see strong intuitive reasons for believing that the rise of national tax-based social transfers should have reduced at least GDP, if not true well-being. On the other, the fairest statistical tests of this argument find no cost at all. Multivariate analysis leaves us with the same warnings sounded by the raw historical numbers. A bigger tax bite to finance social spending does not correlate negatively with either the level or the growth of GDP per capita. How can that be true? Why haven't countries that tax and transfer a third of national product grown any more slowly than countries that devote only a seventh of GDP to social transfers?[1]

This paper shows the width of the gap between intuition and evidence, and then tries to explain it. All our well-known demonstrations of the large deadweight losses from social programs overuse imagination and assumption. There are good reasons why statistical tests keep coming up with near-zero estimates of the net damage from social programs on economic growth. It's not just that the tales of deadweight losses describe bad policies that real-world welfare states do not practice. It's also that the real-world welfare states reap offsetting benefits from a style of taxing and spending that is pro-growth.

The keys to the free lunch puzzle are:

**(1)** For a given share of social budgets in Gross Domestic Product, the high-budget welfare states choose *a mix of taxes that is more pro-growth* than the mix chosen in the United States and other relatively private-market OECD countries.

**(2)** On the recipient side, as opposed to the tax side, welfare states have adopted several devices for *minimizing young adults' incentives to avoid work and training*.

**(3)** *Government subsidies to early retirement* bring only a tiny reduction in GDP, partly because the more expensive early retirement systems are designed to take the least productive employees out of work, thereby raising labor productivity.

**(4)** Similarly, the larger *unemployment compensation programs have little effect on GDP*. They lower employment, but they raise the average productivity of those remaining at work.

**(5)** Social spending often has a positive effect on GDP, even after weighing the effects of the taxes that financed the spending. Not only public education spending, but even *many social transfer programs raise GDP per person*.

**(6)** The design of these five keys suggests an underlying logic to the pro-growth side of the welfare state. *The higher the social budget as a share of GDP, the higher and more visible is the cost of a bad choice*. In democracies where any incumbent can be voted out of office, the welfare states seem to pay closer attention to the productivity consequences of program design. In the process, those countries whose political tastes have led to high social budgets have drifted toward a system that delivers its tax bills to the less elastic factors of production, in the Ramsey tradition.

## I. The Familiar Cautionary Tales Miss the Mark

The intuition that taxing and giving hurts economic progress is centuries old. Since the 1970s a host of analytical supports have seemed to reinforce this intuition. This section surveys the new ramparts defending the old beliefs, noting their limitations.

### A. Disincentives on the Blackboard

It is easy for anybody with undergraduate training in economics to believe that taxing some people to pay others who earn little will reduce national output, and cause "deadweight" losses of net national well-being. The effects could be drawn on the blackboard, with two labor market diagrams, one diagram showing the labor market for those productive persons who pay taxes and the other showing the labor market of those low-skill persons who are poor enough to qualify for benefits.

The key insight in such a pair of diagrams is that there are costs on both sides of the tax-transfer system. In the market for productive effort, having to pay a higher tax will lower the after-tax wage rate for those supplying effort or raise what their employers must pay, tax included, or do both. Either the suppliers feel a disincentive to produce as much, or their employers (or customers) feel a disincentive to pay for as much of their

now-more-expensive services. There will be what economists call a "deadweight cost," here meaning the loss of something that was really worth more than it cost society to produce. The size of that cost depends on how much their production is cut, and we return to this. But clearly a new tax, to pay for transfers to somebody else, can give productive people a disincentive to produce so much.

On the recipients' side, there is also a disincentive to produce. For each extra dollar a low-skilled person earns with extra work, part or all of that dollar will be taken away from them because they have less "need" for income support. Surely that too presents a disincentive to be productive. One can fiddle with the system, promising to let the recipients keep their first $x of labor earnings before starting to deduct benefits. But sooner or later the benefits must be withdrawn if the person keeps earning more and becoming more self-sufficient. And the higher the earnings threshold at which the benefits are withdrawn, the more the program drains the government budget. There are disincentives on both sides, and both must be quantified to judge the damage done by taxing the productive and supporting the poor.

The logic is persuasive, but so far the story is fiction. The deadweight costs are something we imagine, not something we derived from facts and tests.

## B. Harold and Phyllis

The recipient side of this imagined double disincentive was persuasively dramatized in 1984 by Charles Murray's book *Losing Ground*. Murray told us a parable of a young poor couple, and then added citations to economists' empirical studies that seemed to back up his case.

The parable concerns Harold and Phyllis, a fictitious poor unmarried couple who have just finished high school and lack either the family resources or the inclination to go to college. Phyllis is pregnant. Now what?

Murray offers one script for 1960 and another for 1970, after American welfare policy had become more lenient. In both scripts, Harold and Phyllis and in danger of choosing an unmarried life, with low earnings for Harold and with welfare dependency for Phyllis and the child.

These first two kinds of arguments, the economist's theory on the blackboard and the parable of disincentives for the Harolds and Phyllises of the world, share the further obvious limitation that they are fiction. Educated and plausible fiction, perhaps, but still not evidence from the real history of any country that tried generous social transfers. Granted, Charles Murray did choose his example with the help of historical wisdom. Writing in the early 1980s, he did seize on a historical moment when the marginal disincentive to work and to marry hit its peak, because American welfare benefits were strictly means-tested. Later we shall note how this setting discouraged work more than in later years or in the true welfare states.[2]

## C. Micro-studies of Labor Supply

If there are disincentives on both the taxpayer and recipient sides, how do we know whether people really respond to the incentive gaps? If they don't adjust their effort or their willingness to innovate and take risks, then the disincentives to be productive would have no growth consequence. Some further kinds of analysis have been designed to argue that people will respond, leading to a loss of output.

Economists have probed deeply into a key parameter that sets the scale of losses from work disincentives. That parameter is the elasticity of labor supply, which measures the percent change in labor supply as a share of the percent change in after-tax wage that caused it. How big is the elasticity of labor supply relative to the net after-tax wage? That matters a great deal to the debate, since loss of labor effort is imagined to be a main vehicle taking us from the extra disincentives to the lost output and well-being.

The after-tax wage is something that we imagine could be changed either through market forces that determine the pre-tax wage or by changing the tax and subsidy incentives. Economists have used large data sets of individual households' labor supplies to infer how changing tax rates would cause lost employment, to which the main losses in GDP and well-being would be tied if taxes were changed. Careful econometrics has produced a range of estimates and a general understanding of the estimation difficulties.[3] Economists specializing in labor economics and public finance, surveyed in the 1990s, tended to agree that the elasticities of labor supply with respect to the after-tax wage were

between zero and 0.50 for both men and women, though a few outliers believed in either elasticities above 0.50 or negative elasticities (as if people would work less in response to a higher wage). The specialists have agreed that women's labor supply is more elastic than men's labor supply. If both sexes faced a 10 percent increase in take-home wage rates, women's labor supply should respond by 3.5 percent more than men's essentially zero response.[4]

The main limitation to this literature is that most of this literature has been forced to work in the wrong laboratory. Most of the studies try to use *non-policy* variation to infer the effects of policy changes. The large data sets consisting of surveyed households in one country, typically the United States, don't provide the real-world laboratory in which the whole national tax and benefit structure is transformed from a relatively free-market economy into a high-budget welfare state. Rather the people in the sample differed mainly in their gross wage rates, as well as their wages net of taxes and benefits, for individual reasons. It is not a fiscal policy experiment, not a test of the welfare state environment.

Part of this literature, however, does succeed in exploiting differences in policy regimes to see how people respond to changes in work incentives. Some were controlled-sample experiments in which some people were given one set of welfare and tax incentives not given to a control group, as in the American "negative income tax experiments" of the 1960s and 1970s. These tended to yield rather modest elasticities of labor supply response like those just summarized. [5] Other valid policy experiments used inter-state differences in welfare policies to infer the differences in labor supply. These tend to confirm that marginal rates of taxation do matter, especially when they are combined with work hours requirements.[6] Yet if this smaller group of studies confirms that more generous guarantees of a minimum income discourage work, why don't such guarantees drag down the GDP of high-budget welfare states? We return to this puzzle below.

## D. Simulations

The next type of analysis uses computer simulation models to follow how the effects of taxes and welfare payments would reduce output and well-being. It focuses mainly on the cost of the tax side, though some exercises in this genre also allow for those productivity disincentives on the recipients' side.

Since the 1970s several economists have used basic theory and computer simulations to estimate how much, in their view, greater taxes and social spending will cost the nation a large percentage of the amounts transferred. While the reasoning would have been clear to an eighteenth-century critic of poor relief, the analytical apparatus is much more sophisticated. Our focus here is on their results, not on the details of their assumptions.

The deadweight-cost argument rests on a strong negative influence of tax-based spending on GDP, an influence that should rise with the square of the tax wedge. In an article in the *Journal of Political Economy*, Browning and Johnson argued in 1984 that each dollar redistributed to the poor not only costs taxpayers that dollar but also entails an additional $2.49 of deadweight costs around 1976.[7] . At that time the Browning-Johnson estimate was atypical both in method and in magnitude. Yet even measures based on more widely-accepted welfare economics, such as Charles Stuart's estimate of $0.72 in deadweight costs on top of the dollar taken from taxpayers, also suggested substantial costs. Alternative simulations by Ballard and Triest got deadweight-cost rates like those of Stuart, such as $0.50 - 1.30 in certain baseline cases.[8] These are still noticeable costs.

A more recent set of simulations has raised the imagined price once again. In an article in the *Review of Economics and Statistics*, Martin Feldstein estimated the welfare losses from the income tax around 1991. His focus was limited to the tax side, with emphasis on tax-avoidance behavior other than the usually imagined withdrawal of labor and capital. Having an income tax system at all has cost us only 32 cents in welfare for each dollar collected. Expanding the marginal income tax rates by 10 percent would be worse, however, costing $2.06 for each dollar raised. And making the income tax system more progressive would bring a deadweight loss of $3.76 for every dollar of revenue.

High as these estimates may seem, they all leave out a cost we should include if we are to quantify the effects of the tax-transfer system on the level of Gross National Product, something easier to measure than deadweight losses or gains in well-being. The

"deadweight cost" concept allows any loss of productive effort to be offset in part by the value of one's own extra home time (if one works fewer hours) or of one's energy. Any drop in Gross Domestic Product is *not* offset by that personal saving of time and energy, so the resulting drops in GDP would be typically bigger in the simulations run by these studies than their deadweight-loss price tags have shown us. If these studies are correct, the GDP loss from extra taxes and social spending must be huge.

The most glaring limitation of the simulation-based estimates of the deadweight cost per dollar redistributed is their sheer extravagance. How could countries spending a sixth of GDP on welfare alone, and taking half of GDP in taxes, defy their logic? Surely the deadweight costs should show up empirically. Consider the fact that Sweden spent 20 percent more of GDP on tax-based social transfers than the United States in 1995. If we used the simulation-based deadweight cost multipliers, Sweden's decision to have such a large welfare state must have cost Sweden anything from 10 percent (the bottom Ballard-Triest estimates) to 50 percent of GDP (Browning-Johnson), or even higher if Sweden had a progressive tax system like that Feldstein imagined. Such large figures, again, refer only to the deadweight costs, not the larger GDP costs. Such huge effects cannot be plausible unless empirical tests can somehow establish such large costs. Nor did any of the simulation studies provide the evidence, the empirical tests. Like the blackboard exercises and the parables, they are educated fiction. The computer was told to imagine a "virtual reality." We await the true tests.

## E. Global Growth Econometrics

The final kind of evidence of the growth costs of government spending takes the econometric form of a significantly negative coefficient on "government consumption" in recent studies that explore the determinants of 1960s-1980s growth in scores of countries around the world.[9] These studies succeed in taking many factors into account, including political instability and type of political regime. The fact that they get negative effects of government consumption suggests a cost of bigger government that stands out when other factors have been given their due.

The econometrics of economic growth in global cross-sections cannot be used to assess the cost of redistributive taxes and transfers. Their "government consumption," which negatively affected growth, does not even refer to social spending.[10] Rather it is government purchases of goods and services other than for current national defense and education, excluding all transfers and most public education services. It therefore consists of an eclectic set of purchased services, including government payrolls.

Even as a comment on the costs of what it does measure, the government consumption measure fails to show costs relating to OECD democracies, for at least two reasons. One is that the government consumption sector is a service-producing sector for which the accepted way to measure its outputs is by measuring its inputs, mainly inputs of labor time. Therefore, by design, no productivity gains can be measured, even if those services are improving. Therefore, a larger "government consumption" sector automatically lowers the measured labor-productivity growth of the whole economy, regardless of its performance. A second reason for the negative effect of government consumption comes from the sample's inclusion of Third-World non-democracies. These did indeed waste a lot of money in government consumption between the 1960s and the 1980s. In 1987, for example, such government consumption was 37 percent of GNP in Kenneth Kaunda's Zambia and 26.4 percent in Robert Mugabe's Zimbabwe. The share may have been similar in Mobutu's Zaire, though we lack specific figures. The fact that such kleptocracies were bad for economic growth tells us nothing about Europe's welfare states.

## II. What Better Tests Show

The best laboratory for finding the harm that heavy taxation and redistribution might do to economic growth should have these attributes:

(a) Social transfers take a large share of national product on the average -- large enough to show their damage to GDP per capita.
(b) Their share varies greatly over the sample.

(c) The units of observation are the polities that set policy toward taxes and social transfers.

(d) We have credible data on most of the usual leading sources of growth, not just the budgetary policies being judged.

(e) The sample is a pooled time-series and cross-sectional analysis, in order to walk the least dangerous line between the perils of time-series analysis and the perils of cross-sectional analysis.

(f) We have enough separate insights on the sources of both social transfer behavior and economic growth to identify both sides of the simultaneous system explaining both social spending and growth. Other studies have omitted this simultaneity between policy determination and the sources of growth, with possible biases in their growth results.

(g) We allow the GDP effects of social transfers to be non-linear. Theory says they should rise non-linearly, but authors of past empirical studies have failed to explore this crucial twist.

These attributes call for a postwar OECD sample, whether or not it is supplemented by data from non-OECD countries in the good data club. The results from two different postwar pooled samples covering different periods from 1962 through 1995 seem to show:

(1) If a country foolishly taxed only capital or property, and taxes them so heavily as to fund a Swedish level of social transfers, then yes, there would be large costs in terms of GDP, though the deadweight costs would be smaller.

(2) But such costs only arise when the patterns are *extrapolated beyond the sample range,* beyond the actual historical experience. Within the range of true historical experience, there is no clear net GDP cost of higher social transfers.

Other studies approaching this ideal have found no clear net GDP cost from social transfers.[11] Yet the whole list of conditions needs to be satisfied, and past studies have fallen short mainly by not modeling the determinants of social policy and the tax system

itself, so that its rates of spending and taxation can be instrumented for use in a growth equation.

Tables 1 and 2 develop these points with illustrative regression results typical of the broader tests presented elsewhere.[12] The growth side of the simultaneous system is illustrated by the equations in Table 1, covering the 1978-1995 experience of 21 countries. These start with the familiar variables of the convergence literature. Other things equal, growth is faster in countries with a greater shortfall behind the United States in GDP per capita ten years earlier, an effect that presumably represents technological catching-up among countries in the OECD "convergence club." Human and non-human capital also have positive effects on growth. The equation then adds some common-sense corrections for age distribution and the state of the global macro-economy. The effects of total social transfers and particular kinds of taxes are quadratic, to imitate the way that total deadweight costs are supposed to vary with tax wedges.

The implied impacts of greater social transfers and taxes on GDP growth, shown in Table 2, show two sensible patterns. First, the data do confirm the usual intuition if we ask about imaginary bad versions of the welfare state. We can illustrate the conventional fears about rising costs of the welfare state if we really extend the estimates out into the bordered areas of Table 2. For example, we find in the next to last column that cranking up the property tax as the sole basis for extra social transfers is significantly bad for real GDP per capita, especially once we have raised the property tax from zero up to 7.5 percent of GDP or higher. But no OECD country ever did that, and only low-budget countries like the United States, Canada, Japan, and the UK had such high property taxes.[13] Making the consumption tax bear the entire burden of a Swedish welfare state, as in the last number shown in Table 2, would also be very costly, but neither Sweden nor any other country did that. On the other hand, the extrapolations based on the earlier 1962-1981 sample imply that jumping to a post-1993 Swedish welfare state would have been good for growth -- but no country did that before 1981, and no such positive effect appears in the later 1978-1995 sample, when Sweden actually spent so much

The overriding fact about the cases of costly welfare states, though, is that *they never happened.* That's what their being extrapolations out of the sample range really means. Once we draw back from such imaginary extrapolations to the historical range of

policies actually tried, no expansion of taxes and transfers significantly lowers (or raises) GDP. The free lunch puzzle is confirmed, even by the most appropriate available kind of econometric test.

## III. How Can that Be True?

How can the statistical evidence contradict our common belief that taxing and transferring through government will lower national product?

Institutional history can explain how econometric near-zero results are not only plausible but even likely. Knowing more of the recent history of the high-budget welfare states can stimulate fresh thinking about how program costs and benefits are handled in practice, even though we cannot offer a complete accounting of all growth effects. The keys are to be found on both the tax side and the social spending side of the welfare state. Let us turn first to the taxpayers' side, before looking at the transfer recipients' side and the pro-growth social programs.

## IV. The Welfare-State Style of Taxing: Pro-Growth and Not So Progressive

Postwar history has brought the evolution of a different style of taxation in the countries where social transfers take a large share of GDP. Contrary to what many have assumed about redistributive welfare states, that style tends to raise GDP and inequality, relative to the tax mixtures in the lower-spending countries. In the high-tax high-budget social democracies, the taxation of capital accumulation is actually *lighter* than the taxation of labor earnings and of leisure-oriented addictive goods. That, at least, is what the latest attempts to compare tax rates across countries seem to tell us.

Measuring the growth effects of the whole tax system is at least as difficult as measuring the growth effects of government social expenditures. Knowing that it is marginal rates, not average rates, of taxation that govern choices about how much to

work or accumulate or innovate, economists have tried to measure the growth effects of "the" marginal rate of income taxation.[14] Yet as the path-breaking authors in this line of research freely admit, marginal tax rates are not only harder to find for a large sample of countries, but hard to trust as well. There are two core problems with using marginal tax rates as quantifiable growth influences. One is that marginal rates of taxation are too numerous to summarize. Even a single income-tax code typically has a multiplicity of marginal rates, and it is not obvious how to average them into "the" marginal rate. The other core problem is that individuals find numerous ways, mostly legal, to make the effective marginal rate lower than the top official marginal rate. Many individuals switch activities or assets so as to cut the effective tax, and it is hard to measure the lower marginal incentive they actually face.

The difficulties of gathering and interpreting marginal tax rates have led other researchers to develop the "average effective tax rate (AETR)," first in a series of article by Enrique Mendoza and co-authors and then in a large OECD study.[15] Once again the authors have been candid about the limitations of their estimates. All the usual ambiguities about the final incidence of taxes apply to the AETRs, as well as to the marginal rates.

Let us turn nonetheless to a comparison of average effective tax rates across countries and years, before having a later look at a limited comparison of some marginal rates. While the AETRs may have the defect of not being the most incentive-relevant marginal rates, they capture in their own indirect way many of the effects of private attempts to minimize tax payments. They also have the virtue of being available for all OECD countries. And for all their roughness, they yield patterns that are likely to transcend problems of measurement accuracy.

Capital incomes have not been subject to higher rates of taxation in the welfare states than in, say, the United States. So say the estimates of the average effective tax rates on all capital income, or on corporate income, or on property for the 1980s and 1990s. To see how un-progressive is the tax side of the government budgetary style in high-spending democracies, let us first take the estimates of capital income taxation at face value as they are shown in Figures 1 and 2, before turning to how the details of the tax system might affect this initial impression.[16]

Whatever one might have thought, the smaller-government countries such as Japan, the United States, Switzerland, Canada, and Australia tax capital and private property at least as heavily as the welfare states of Scandinavia, Germany or the Netherlands. Taken at face value, the estimates in Table 3 and Figures 1 and 2 imply that the taxation of capital and property is slightly negatively related to the social-transfer share of GDP, a proxy for welfare state democracy. The negative relationship would look somewhat stronger if one were to exclude some of the lower-income OECD countries (Portugal, Spain, Greece, and Ireland) and concentrate on the countries covered more heavily in the English-language media.

One institutional mechanism that has added to the burden on capital in low-spending Japan, Switzerland, and the United States is their persistent double-taxation of dividends, as both corporate income and household income. Other countries, including the welfare states, either excuse dividends from personal income tax or give it a lighter tax rate.[17]

The capital-taxation issue has been explicitly debated in countries like Sweden, with attention to issues of international capital mobility as well as to issues of equity. Indeed, in Sweden in the 1980s, the effective net tax rate on personal capital income was actually negative for the top 60 percent of the income ranks, once one adjusts for the generous provisions regarding deductions of interest payments and other tax advantages. It has been estimated that the taxation of personal capital income *reduced* government tax revenues by half a percent of GDP as of 1982. Part of the tax relief on capital came from the distinction between real and nominal income in the presence of rising prices. Wealthy households got to deflate their gross capital incomes to pay on only their real incomes in prices of an earlier year. Yet they got to deduct the full nominal value of interest payments on debts incurred to pay for their capital assets. Accordingly, many wealthy households took on higher gross assets and debt than otherwise, thus avoiding virtually all taxes on capital income. As of 1982, the final effective tax rate on capital income was still positive for modest-income households but actually negative for the wealthy.[18] Thus the true average tax rates on Swedish capital and property incomes were lower than the rates shown here.

By contrast, labor incomes have been taxed more heavily in the welfare-state countries, as Figure 3 shows. Their preference for taxing labor rather than capital is regressive, of course. It is also pro-growth, to the extent that capital is internationally mobile and would take positive productivity effects with it when migrating. Indeed the difference here resembles a change in the tax system that American public economists have favored on growth grounds, namely full replacement of all capital income taxation with labor taxation. The median American specialist in public economics thinks that the shift from capital taxation to labor taxation would raise the annual growth rate of GDP by 0.2 percent.[19] The pro-growth regressive switch in tax mixture has been put into effect -- in the welfare states, not in the United States.

Consumption taxes are more pro-growth than income taxes, as many conservatives have insisted. If you are subject only to a 15 percent consumption tax now and forever, with no income tax, your incentive to save is not strongly affected. Either you pay the 15 percent on today's consumption or you pay the same 15 percent on a future accumulation of income. As long as we discount your future taxes at the same discount rate you earn on the accumulated savings, the present value of your consumption taxes is the same whether you spend now or you save so that you and your heirs can have more to spend later.[20] Income taxes, by contrast, take from your saved income twice, both when you initially earned the income you decided to save and again when your savings earns new capital income.

As Figure 4 shows, the welfare-state democracies also tax consumption more heavily, just as they tax labor incomes heavily. The heaviest tax rates on general consumption tend to be those in Scandinavia (and Ireland). By contrast, this more pro-savings and pro-growth form of taxation has been less preferred in low-spending Japan, Switzerland, the United States, and Australia.

The difference even extends to the design, as well as the overall level, of consumption taxes. The consumption tax is not only higher, but *flatter* in high-budget Europe than in the low-spending countries. Food and other necessities have historically had to pay the same consumption tax rate as other goods in Denmark, Norway, and Sweden, in contrast to the practice in other settings, such as exempting foods from state

sales taxes in the United States. Similarly, luxuries usually do not bear special higher consumption taxes in the same three Scandinavian countries or in Germany or Ireland.[21]

Another striking pattern emerges when we look at the taxation of specific types of consumption goods. To encourage work ethic, health, and a cleaner environment, one would want to shift taxation away from productive activities and toward the consumption of addictive goods that are complements to leisure and threaten health and environmental quality. To serve these social goals, one would want to lower the general tax rates on income and consumption and raise the specific tax rates on tobacco, alcohol, and gasoline -- even though such a shift takes a greater percentage tax bite from lower income groups.

Which countries put the heaviest taxes on three kinds of goods with external costs is shown in Figures 5 - 7. The heavier the reliance on social transfers through government, the heavier the tax rates on cigarettes, alcohol, and such environmental-cost products as gasoline. Behavior that has bad externalities ends up being punished more in welfare states. In each case, special national factors might have played a role. For cigarettes, it might be that tobacco producer interests, as in the United States and Japan, lobbied for holding down the tax, and for delays in the rise of anti-smoking laws.[22] For alcohol, it might be that Scandinavian governments are able to exploit a less elastic demand with a Ramsey tax. For gasoline and other environmental-cost goods, the correlation may be reinforced by America's peculiar policy taste for heavy energy consumption, which might be unrelated to budgetary fights over the welfare state. Yet the correlations with social transfer budgets remain.

Thus the welfare-state choice of a large overall tax burden to support transfers is usually accompanied by the political choice of taxes that promote growth and environmental quality – without equalizing incomes much more than in lower-spending countries.[23] This is not just a temporary condition captured in our 1995 snapshots. It has been the case over the last third of the twentieth century, with some softening of the relative taxes on capital after 1980. We are several steps closer to understanding how high shares of social transfers in GDP might not have meant any reduction in GDP per capita.

## V. Recipients' Work Incentives

On the recipients' side, as well as on the taxpayers' side, real-world welfare states seem to avoid huge disincentives. In a few policy dimensions, recipients of transfers in high-budget countries may have *more* incentive to work than their American counterparts. In other policy dimensions, the higher-budget welfare states do indeed discourage more work, but with little effect on GDP.

### A. The Poor May Face Lower Work Disincentives in the Welfare State

Just as the high-budget countries often have lower marginal tax rates at the top of the income spectrum, so too they can have lower marginal tax rates at the bottom, with high marginal tax rates only across the broad middle range of incomes. If that is true, then the debate over work incentives needs to be redirected. The net effect on labor supply and GDP may depend on something never researched, namely whether work and productivity respond more sensitively to marginal tax rates in the middle range or at the ends. If the response is greater in the middle range, then the welfare state indeed reduces work and GDP. But if conservative fears are correct in emphasizing that the supply of effort is most fragile at the two ends of the income spectrum, then it is possible that the pattern of marginal tax rates in the high-budget welfare states discourage work less than the pattern prevailing in low-budget countries.

Fortunately, we have the benefit of a long policy debate and careful research that has penetrated the jungle of marginal incentives faced by those at the bottom of the income spectrum, most of it relating to the United States and the United Kingdom. The policy under investigation is the policy toward poor lone parents -- or unmarried "welfare mothers" in the American parlance -- a pair of studies has grappled with the whole complexity of the tax and transfer system that people face in that situation.

America's national policy has traditionally faced poor lone parents with high marginal tax rates, cutting off aid as soon as the recipient earns even a low wage income.[24] The Social Security Act of 1935 set up AFDC (Aid to Families in Dependent Children) this way. The then-small population of single mothers, mainly young widows

who were expected to stay at home with the children, faced a 100-percent marginal tax rate on any earnings. Such strict "means testing" of benefits had become controversial by the 1960s, when the share of women who sought work outside the home had risen considerably. Economists Milton Friedman and James Tobin, among others, called for a change in policy that would let the poor keep much of their benefits while still earning modest amounts outside the home. In 1967 such concerns helped to shape new legislation lowering the marginal tax rate to two-thirds, but in 1981 Congress and the Reagan Administration reverted to stricter means testing and raised the marginal tax rate back to 100 percent. Meanwhile, related welfare programs expanded and became more complex, so that an accurate measure of the true marginal tax rate would require an in-depth study of the combination of AFDC, Food Stamps, medical care for the poor, subsidized housing, child care subsidies, and Supplemental Security Income for groups with particular needs.

Yet the concern about heavily taxing work by the poor continued to push both America and Britain toward a system that lowered the marginal tax rate for those getting a low-paying job. In both countries this took the form of a tax credit for low-earning households, beginning in the 1970s but becoming a major factor only in the 1990s. In the United States, this tax credit is the Earned Income Tax Credit (WFTC) started in 1975 and greatly expanded in 1993. The British counterpart is the Working Family Tax Credit, started as the Family Income Supplement in 1971, and fully implemented in 2000. Similar employment-conditioned benefits now exist in Australia, Ireland, Canada, Finland, France, and New Zealand, most of them countries with relatively low social transfer budgets.

The 1990s drift toward EITC and WFTC lowered marginal tax rates at the bottom of the income spectrum, raising them in the "phase-out range" further up the ranks. The upper panel of Table 4, even though it is based on conditions in the year 2000, aptly shows the state of play before the 1990s, such as the 1970s world of Charles Murray's fictitious Harold and Phyllis. When the poor didn't get any tax credits for low-pay work, they faced very high marginal tax rates in both countries. By taking on low-paying work, a single mother could lose more than half of her earnings in withdrawn benefits, a higher marginal tax rate than is faced by most people.

What would happen if instead of tough means testing, we let poor lone parents keep much of their extra earnings? This experiment has crept into American and British policy when EITC and WFTC were phased in. It's a step toward the universalist approach to family benefits in some high-budget welfare states, where you keep your benefits, still paid for by taxpayers, even if your earnings rise toward the national average. The lower panel in Table 4 shows us the results under this policy of tax credits for low-paid work, as practiced in these two countries plus Sweden. In America and Britain it lowers the tax rates from getting a job at all, and from moving from part-time to full-time work at minimum wages. On the other hand, it raises the marginal tax rate higher up the ladder, as shown by the third column of numbers. Reaching that phase-out range is inevitable, since somebody somewhere up the income ranks must pay the extra taxes if the poorest people don't. Still, the final column reveals that the drift toward broader forgiveness from taxes has brought a net reduction in marginal tax rates for the whole range of options facing lone parents in the bottom income ranks.

So at the bottom of the income spectrum, as at the top end subject to taxes on capital and property income, the universalist welfare states may well have lower marginal tax rates than the lower-budget countries, with their emphasis on strict means testing. Table 4 implies that Sweden was such a case, keeping the marginal tax rate below fifty percent for people below the threshold for defining poverty.[25]

If welfare states really have lower marginal tax rates at the top and bottom of the income spectrum, but higher tax rates in the middle, do they discourage work more, or less, than low-budget governments of Japan, Switzerland, and the United States? Putting it this way shows that the net balance of work disincentives rests on something that nobody has measured yet. How do these conflicting responses net out for the labor force as a whole? We don't know yet. For now, it is time to take one step backward, away from the common implicit assumption that higher-tax countries have higher marginal tax rates up and down the income ranks.

## B. Early Retirement: Good Riddance to Old Lemons?

The most dramatic withdrawal of people from paid work has occurred in the 55-64 age group, not among young single mothers or work-shirking young men. Many European countries have taken dangerous steps to subsidize earlier retirement. This invitation to quit work earlier, combined with the rise of senior life expectancy, has hastened the crisis over pension budgets.

So surely, one might think, it is in the lavish public subsidies to earlier retirement that we finally discover a program that must have taken a large toll on Gross Domestic Product. And the subsidies are indeed lavish in some cases. Take the case of France versus the United States. In 1995, France spent 9 percent of GDP on public pensions, disability and survivors' benefits, which was more than double the American share of 5.2 percent. Many of the extra French benefits went to people who were in the 55-64 age group, in the form of more generous pensions, more generous disability payments, and special unemployment benefits for that age group.[26] In the same year, the percentages of people in the 55-64 age group who were working differed as follows:

| | France | United States |
|---|---|---|
| Both sexes | 33.6 | 55.1 |
| Men | 38.4 | 63.6 |
| Women | 28.9 | 47.5 |

Doesn't France's paying people to quit work in their mid-fifties and early sixties mean dramatic losses in GDP? Hasn't American gained GDP by restraining the invitation to earlier retirement?

In fact, public subsidies to early retirement have only a negligible cost in terms of GDP, for three main reasons.[27] First, we must remember that the incentive to retire in the 55-64 age range is built into many private employers' pension plans as well as public social security programs. A world in which taxpayers decline to subsidize early retirement in still a world in which each extra year of work just before age 65 can still pay a tax in the form of lost retirement benefits. Private and public pension programs vary in their net retirement incentives, and the average difference is less than the public subsidy viewed alone.[28]

Second, even in the smoking-gun cases where public pension programs do kill some work incentives, and the GDP loss cannot be zero, the loss of output is still quite small. Some basic accounting guides us toward a rough answer. Here is a definitional relationship between the Gross Domestic Product per capita, numbers of workers and the age distribution:

GDP per capita = GDP per worker

*times* (total workers divided by the 55-64 population)

*times* (55-64 population divided by total population).

Converting this into rates of change and re-arranging terms yields this link between the growth of GDP per capita and the amount of labor lost by subsides to earlier and easier retirement:

The percentage change in GDP per worker induced by retirement subsidies

= (A) the percentage change in productivity per worker

*plus the product of these three terms:*

(B) induced percent change in employment for the 55-64 age group)
+ (C) the share of those 55-64 who are employed (if no subsidies)
+ (D) the ratio of the 55-64 age group's population to total employment.

For France in 1995, the policy-induced percent change in employment (B) might have been as great as the whole difference between the French and American employment shares for the age group, or (33.6 percent minus 55.1 percent = minus 21.5 percent. This looks like a large number. In fact, it was larger than the percent shortfall of France's GDP per worker below the U.S. GDP per worker in 1995, or 19 percent. But the GDP effect of the jobs given up by France's 55-64 year olds is smaller. Using the formula above, this induced change of – 21.5 percent in employment for the 55-64 age group

must be multiplied by the two fractions (C) and (D). One is the initial share of those in the 55-64 age group who would have jobs if there were no early-retirement subsidy (C). That initial share would be something below France's actual share of 0.336, but let's use the 0.336 multiplier to get a conservatively high number. The next fraction is the ratio of France's 55-64 population to France's total employment for all age groups. This works out to 0.259. So the policy-induced change of –21.5 percent gets multiplied by (0.336 times 0.259), which brings it down to a net GDP loss of less than 1.9 percent – *if* the same ratios applied to all women. They do not. The effects on women's work are smaller, suggesting a still lower GDP cost. The same point holds for five main smoking-gun cases of taxpayer subsidies to early retirement -- Belgium, France, Germany, Italy, and the Netherlands -- though it does not apply to the longer-working populations of Canada, Japan, Sweden, Norway, and the United States.

The third reason deserves the most attention here. Subsidizing early retirement probably *raises productivity* per worker. That is, it raises (A) in the simple accounting above. Those who retire early have lower-than-average productivity in their age group. Having them quit work means an even lower percentage cost in GDP than in employment.

Could early retirement have no cost at all in terms of GDP? Could the marginal productivity of a retiring senior worker be zero? Such an absolute-zero result has actually been suggested by Xavier Sala-i-Martin in 1996. In what we might call his "good riddance to geezers" hypothesis, Sala-i-Martin argued that older workers could be so counterproductive in their effect on the whole work unit's output that their marginal product is in fact zero. That might be the case if senior workers have excessive power, and are especially hard to get rid of once their marginal product has dropped off. He quoted the controversial remarks of Doctor William Osler in a valedictory address at Johns Hopkins University on February 22, 1905:

> My ... fixed idea is the uselessness of men above sixty years of age, and the incalculable benefit it would be in commercial, in political, and in professional life, if, as a matter of course, men stopped work at this age.... That incalculable benefits might follow from such a scheme is apparent to any one who, like

> myself, is nearing that limit, and who has made a careful study of the calamities which may befall men during the seventh and eighth decades [of life]. Still more when he contemplates the many evils which they perpetuate unconsciously, and with impunity.[29]

Sala-i-Martin says that university faculties illustrate Osler's point. Faculties could still produce as much if they paid professors over, say, 55 to leave campus permanently. While the idea deserves further investigation (by younger faculty?), the assumption that an extra 55-64-year-old adds zero to the economy seems extreme, at least to this author.

Yet the truth, if less extreme, does point in the same direction. The productivity of the lost labor is reduced by the way in which the early-retirement incentives are structured. Countries that invite early retirement actually send a more urgent invitation to the less productive workers. The Gruber-Wise research team found a much greater early-retirement subsidy for workers earning only in the 10th salary percentile than for workers earning in the 90th. Lower-earning, and presumably less productive, workers were given much less incentive to continue work in those same five countries -- Belgium, France, Germany, Italy, and the Netherlands -- and also in Canada, Japan, Spain, and Sweden. Of the eleven countries studied by the Gruber-Wise research team, only America and Britain kept the tax on senior workers low at all salary levels up to age 65.[30] The mechanisms varied. The Germans up to 1982, the Italians before 1984 and the Dutch before 1995 did it largely with generous disability benefits, while the Belgians and French had generous unemployment and layoff benefits. There is at least some evidence that such generous exit packages were approved and manipulated by employers as a way of getting rid of less productive and more problematic workers.[31]

There is indirect evidence that less productive senior workers do respond more strongly, given the stronger invitation, relative to more productive seniors. The OECD found a definite relationship between educational level and the employment shares at different age groups.[32] Those who stay on the job tend to be more educated in any age group, but especially in the 55-64 age group. For French men in 1995, with generous early-retirement subsidies in effect, there was a particularly strong educational twist in the age-employment profile. The share of men with a university education who were still

at work in the 55-64 age group was 30 percent greater than one would have predicted if they had retired as fast as the less educated. This pattern, combined with the biased retirement incentives we have just noted, suggests that early-retirement policies deliberately and successfully culled out the less productive and kept the more productive at work.

### C. Does the Dole Also Harvest Lemons?

Thus far my listing of work incentive studies has given only light treatment to a core kind of transfer payment: classic unemployment compensation, or what British history has called "the dole." Doesn't this kind of subsidy to not working (for a while) lower job-taking? The answer is yes, it does lower employment, according to both past writings and new results aired in Volume 2.[33] But here a puzzle arises: If the dole clearly cuts employment, why does it not visibly reduce GDP?

The resolution to this part of the puzzle is twofold. First, the true effect of unemployment compensation on GDP could be negative, but be small enough to hide within the broad confidence intervals in statistical tests. Second, jobs may be lost with very little reduction of GDP if the more generous unemployment compensation widely practiced in Europe actually raises the average productivity of those who continue to work. This might occur because European governments use unemployment compensation as a way to get the least productive workers out of their jobs, to leave a more productive labor force at work, just as we saw them doing with early retirement policies. That is, the dole may be so implemented in practice that it casts out "lemon" workers, those with the lowest contribution to overall labor productivity. Indeed, related work revises the econometrics of European job markets to show that more generous unemployment compensation goes with higher productivity per worker or per labor hour, other things equal.[34]

## IV. Some Growth Benefits of High Social Spending

Thus far, we have established that the GDP costs of early retirement and unemployment compensation are close to zero, even closer than their effects on labor time would imply. From these costs should be subtracted any small gains in work and earnings coming from the fact that higher-budget welfare states may impose a lower marginal tax rate on poor lone parents. The "deadweight" effects on well-being are smaller still, because the reduction in labor tie means a gain in valuable home time. Were we to switch focus from GDP costs to true well-being, then the extra leisure and vacation time of the European welfare states would loom large enough to erase any net loss at all. yet if we stick with the GDP focus of the free lunch puzzle, there is still a bit more work to do. As long as there is a net reduction of work from the welfare-state package, we should still presume that the GDP loss is close to zero, but not zero.

The next step is to note that some kinds of social transfers have positive effects on the level and growth of GDP. Many types of social transfers are in fact pro-growth, and the growth benefits they provide tend to be greater in the higher-spending countries. If we set aside the clear productivity gains from extra public education, which are not defined as "social transfers" here and were covered in Chapter 6, which kinds of social transfers are most likely to have a positive GDP impact that has not been confronted yet?

## A. Active Labor Market Policies: Not Much There

Let us start with a kind of social transfer that should, in principle, have directly cancelled the job losses from unemployment insurance. Support for the unemployed often includes sizable expenditures on "active labor market policies" (ALMP), a rubric that covers public subsidies to job search, job re-training, and public sector jobs for those who are hard to employ.

Yet studies of the ALMP bundle of pro-job interventions suggest only modest payoffs in improved job-holding and earnings, and therefore a near-zero rate of return. The modesty and fragility of the gains show up in all three main legs parts of the ALMP bundle -- job search assistance, retraining, and public sector jobs for the least qualified. The return is particularly low for males, and not so bad for females, perhaps because females' prior disruption of training was less rooted in an aversion to school.[35]

Such sobering limitations to the payoff of active labor market policies seem to square with two other kinds of findings by labor economists. First, the vast research on interventions to improve the lot of disadvantaged youth has concluded that the earlier the intervention in the life cycle, the better. Interventions in pre-natal, infant, and pre-school care and training have achieved high returns, especially under certain program designs. Yet programs to set teenagers back on track have shown only weaker returns, unless one counts just keeping them off the streets and out of prison as a major social gain.[36] This earlier-is-better pattern squares with the low returns to retraining and public employment for young adults. Second, economists are gravitating toward the belief that the greatest gains from public supports for work and earnings come from a mixture of carrots and sticks. For carrots, the emphasis increasingly favors tax credits for earnings such as America's EITC or Britain's WFTC, with only a very limited role for retraining programs.[37] On the stick side, work requirements work as well as retraining programs for part of the population receiving public aid and tax credits. It seems likely that the ALMP policy bundle has not been sufficient to erase even the small net loss of jobs and GDP from the same countries' generous unemployment compensation.

## B. Childcare Support and Career Investment in Mothers

Greater returns appear to have come from the welfare states' stronger support for career continuity for women, especially for mothers. Having a child necessitates at least some work stoppage for mothers, and the work time losses are still very unequally shared between mothers and fathers. How much this costs mothers in lifetime earnings potential depends on how long they are compelled to stay out of work and how much less employers pay and promote women who are perceived as shorter-term employees not riding the career escalator.

We have some hints that the lifetime pay disadvantage of mothers grows in settings where their child care demands are met only in private markets. First, in the United States between 1960 and 1986, the pay disadvantage of married women relative to unmarried women widened for all ages up to about 46.[38] That disadvantage of married women was presumably a muted reflection of the disadvantage of mothers relative to all

childless women. More concretely, the pay-path disadvantage of mothers is estimated to have grown in Britain between 1980 and 1991.[39] Both countries lacked any major government or legal support for women's reclaiming their old jobs after a childbirth interval, or any major subsidy for formal childcare.

Other countries, however, do have government and legal support for parental leave without job loss, plus government support for infant care. The extent of such support is a hidden correlate of social transfers, and a hidden source of their growth benefits. On the whole, countries that support women's careers with parental leave laws and with affordability of child care tend to be those with an overall commitment to social transfer spending. The countries offering new parents the least support are the United States, Britain, Canada, and Switzerland.[40]

Thus government financial and legal support for working mothers appears to be an underlying pro-growth feature of welfare states. It seems likely that this return can be cumulative over decades and generations. A major barrier to women's being promoted to more productive and higher-paying jobs has been "statistical discrimination." A common form of this discrimination is employers' perceptions that there is less need to invest in the intra-firm careers of young women because childbearing may take those women back out of the labor force.[41] The more continuity there is in women's careers, helped by subsidies and laws cutting the private cost of motherhood, the more the perception of a gender difference in job commitment will erode, allowing women more on-the-job accumulation of skills.

While the gains in women's work and in GDP from such career supports are hard to quantify, the hints at strong gains agree with other tendencies we have already noted. First, women tend to have a more elastic labor supply than men, so that a given percentage incentive should yield more extra work and earnings if aimed at women than if it is aimed at the same number of men. A supporting hint of such likely gains from this difference in elasticities comes from the fact that women's pay is already closer to men's in several European countries than in America, Canada, or Japan. Second, as noted in the previous section, the payoff from job-retraining and other active labor market policies looks more hopeful for women, because the women who qualify as needing such programs are less unreceptive to extra schooling and training than the corresponding

group of men. Even though specific numbers still elude us, it makes sense that the more committed welfare states' career supports for mothers are likely to have a strong payoff in jobs and GDP.

## C. Public Health Care

People are healthier and live longer in those democracies with a more public and more centralized approach to health care -- and the superiority of comprehensive public health care explains part, though only part, of this difference. Here we have an abundance of evidence. To illustrate the possible pro-growth aspect of a public approach, this section focuses on the longevity issue, even though it raises GDP *per person* only indirectly and modestly.

With life saving as with economic growth, a simple frontal view shows a positive correlation between such social benefits and the welfare state. Figure 7 hints that social transfers correlates negatively with male and female mortality in OECD countries in 1995. Both for males and for females, premature mortality looks lower in the higher-budget countries. The correlation is not very strong, of course. Among low-social-budget countries, the United States stands out as having peculiarly high mortality, while Japan stands out as being peculiarly healthy.

How could general social transfers be linked to the length of life? To move beyond crude correlations like that in Figure 7, we need some systematic way of separating the effects of public health care spending, the part of social spending most directly relevant to longevity, from the many other influences that we know will make nations differ in their average length of life.

One statistical study is particularly convenient for our present purpose of comparing nations' health. Using the new OECD standardized measures of premature mortality and a pooled cross-section approach, Zeynap Or finds that a greater public-expenditure share, for given total expenditures, significantly reduces mortality, especially among men, among OECD countries since 1980.[42] Table 5 reports the cross-sectional part of the results. In the mortality-change perspective, where minus signs are good, some familiar factors lower mortality down toward the world-best Japanese standard.

Those factors include higher income, white-collar occupations, cleaner air, abstention from bad consumption habits, and greater total spending on health care. On balance, though, a more public approach to the same health care expenditures also helps significantly. It explains a small part of America's greater mortality. Even beyond this public-private contrast, however, America is a high-mortality outlier. While firearms are probably a factor, the difference is largely unexplained. Similarly, Uwe Reinhardt, citing a Germany-US comparison for 1990, decomposes the extra US health cost per capita (PPP$) into higher US administrative costs, higher US prices, less real use of inputs in US, and so forth.[43]

One of the mechanisms linking the average length of life to the public-private institutional choice is the mixture of types of care. Any medical system mixes basic care for the entire population, including hygiene assistance and other preventative care, with high-budget items designed to lengthen life for those middle-age and elderly populations who can afford it. In this difficult trade-off between broad basic care and sophisticated high-cost care, two conclusions seem inescapable:

> (1) any health delivery system must choose to let somebody die earlier, but
> (2) those systems that tilt more toward basic and preventative care seem to achieve longer average life expectancy.

Public health care systems, like private and non-profit healthcare providers, must make life-and-death choices. While it is conceivable that an efficient public health system could bring net mortality reductions on all fronts, it does not work out that way in practice. So difficult are the choices that in practice the public health systems, like private medicine, must choose to let some kinds of patients die sooner. That does happen, and there seems to be a pattern to the differences in how public and private systems ration life. The public systems provide less of the highest-budget life-extending services and more of the basic health services protecting mothers, children, and the poor. For example, experiences with inefficient over-investment in CAT scanners and in (in-hospital) renal dialysis has forced American authorities to retreat toward rationing a lesser supply of the relevant equipment, much as the nationalized health systems of

Britain, France, and Sweden have done.[44] By contrast, the evidence on basic ground-level health care, featuring preventative medicine through public clinics, has continued to have such a high return as to suggest under-investment in such care.[45]

Still, the efficiency of public health care, and indeed the whole set of factors entertained by Or (2000), can only explain part of the differences in health and life expectancy between the welfare state populations and the most market-oriented populations.[46]

Another part of the explanation may lie in health differences between rich and poor. Even for a given kind of health care system, the poor die younger. The relationship between income and wealth is strongly non-linear. Health status and mortality have been more sensitive to income in the bottom income ranks than across the rest of society. Poverty causes inequality through at least three channels: The poor are given less access to health care at public expense, they cannot afford to buy as much health care in private markets, and they take poorer care of themselves. The non-linear relationship is such that raising income inequality in a way that reduces the incomes of those in the bottom fifth of the family-income ranks will lower the average health status and life expectancy of the whole nation.[47]

Historical studies suggest that income inequality has consistently worsened aggregate national health through its effects on the poor. So says historical experience since the late nineteenth century, especially in America and Britain.[48] Careful international comparisons of today's health care systems agree, whether they are in-depth comparisons for two countries or broader statistical comparisons of many countries. The verdict is the same whether one is comparing high-income OECD countries, low-income developing countries, or both.[49] Income inequality, like the private approach to national health, shortens life expectancy, both for the poor population and for the entire population.

A defender of free-market health might seek to retain the belief that the poor die younger because they do not take care of themselves. Historical and analytical studies do allow a little retreat in this direction, but only a little. It is true that for any given health system, even a free public system, the poor fail to consult physicians as often and they indulge more in such unhealthy habits as smoking and alcohol.[50] This self-care factor has

commanded attention among bothered observers of British health history. Why should an increasingly egalitarian health system encounter such persistent social gaps in life expectancy, with both the lowest occupational groups and their children dying sooner?[51] Part of the answer has to lie in those differences in pursuing one's own health. Yet even the same studies make it clear that a large part of the difference lies in the inequality of access to health service. The systematic results in Table 5 have already agreed: By holding occupation and bad health habits as constant as possible, that OECD study still found a significant health difference by type of delivery system.

We also know that health care supply, rather than personal health care demand, dominated mortality differences across the twentieth century from studies of regional inequality in health care services and in mortality outcomes in America and Britain. America's supplies of physicians and of nurses, like its mortality rates, have been more unequal across regions than Britain's since 1890. Differences in personal habits of the poor could not have played as great a role as these clear differences in health care delivery to different parts of the same country. That the supply of physicians and nurses did matter is also suggested by the downtrend in those regional inequalities of both the supply of doctors and nurses and the mortality outcomes between 1890 and 1970.[52]

The more general point behind such historical experiences seems clear enough. Whatever role might have been played by poor families taking less care of themselves, their behavior was not an exogenous force that differed widely over time and space. Rather their lower use of health care, like their earlier deaths, must have been due to the only relevant traits that poor families shared over so many decades, regions, countries, and cultures -- their poverty itself, and the related denial of low-cost health care. Income inequality, combined with private and decentralized health care, has shortened life outside the welfare states.

Thus public health care contributes to longer average life expectancy. The fact that public health spending, which has been counted here in social transfers, lengthens people's lives does not directly add to GDP per person. Yet the odds are that such spending does help raise productivity per person, especially if it is spent on basic and preventative care for the young and the poor.[53] Reducing sickness and morbidity enhances later productivity. By contrast, the extra expenditures on high-budget items to

extend the lives of the rich and elderly do not raise GDP per capita. This combination of the favorable average productivity effect of health investments and the greater productivity enhancement from basic and preventative care than from high-budget repairs seems to help explain how a large part of social transfers – here, the public health budget – has been pro-growth.

## V. How the Keys Were Made: Democracy and Cost Control

Not wanting to go beyond the simple sermon that more government means less national income, many have cast welfare states as nations that just don't see, or feel that the rich should bear, the soaring national costs of taxes and transfers. Yet the danger of naive pessimism about public programs should be obvious. The case against social transfers can't be that simple, especially in the face of the evidence suggesting no significant net cost.

This paper has surveyed some institutional clues pointing toward a non-negative contribution of social transfer programs toward economic growth and well-being. The list of clues is eclectic and incomplete. We now have a better understanding of the tax mix practiced in welfare states, and the limits on the damage done through work disincentives, both for young adults and for the elderly. These findings can only be suggestive, and we are a long way from an overall quantitative accounting.

Much of the story consists of welfare states' avoiding ruinous patterns of taxation. In fact, their tax mix even resembles some classic prescriptions from economists' optimal-taxation literature. The heavy taxes on addictive complements to leisure fit both the growth prescription and the need to address externalities. The tendency toward universalism rather than strict means testing imitates economists' preference for combining a flat consumption tax with a poll subsidy.

Behind the eclectic set of clues and the hint of classic fiscal wisdom may lie a fundamental unity, a single mechanism that explains how welfare states found such an assortment of safety devices and avoided damaging their economic growth.

The mechanism is this: *The higher the budget, the higher the marginal cost of making the wrong policy choice*, both economically and politically. To see how, suppose that expanding a budget has a deadweight-cost multiplier of 0.40 under Policy A but only 0.10 under Policy B. So, for example, expanding the budget by 10 percent with Tax-Transfer Policy A would bring a deadweight cost of 4 percent of the initial budget. The same expansion by 10 percent of budget using an alternative Tax-Transfer Policy B would bring a deadweight cost of only 1 percent, we assume, while still delivering the same public benefits. Let's just consider these two policy design choices A and B.

Do we have any assurances that the political process would choose B over A, saving the nation an unnecessary extra cost? Not if the initial budget was, say, only 1 percent of GDP, so that the expansion of 10 percent of the budget only raises it to 1.1 percent of GDP. The deadweight costs would be only 0.04 percent of GDP under Policy A and 0.01 percent of GDP under Policy B. A small net return may not overcome the fixed cost of investigating and campaigning against the more costly choice. There is so much sand and distortion in the policy machinery that the public might have no way to react to such small magnitudes. The nation may stumble on with the wrong choice, suffering a loss of 0.03 percent of GDP without paying attention.

Suppose, by contrast, that the initial budget were already 25 percent of GDP. In this second case, people should weigh and debate the same 10-percent choice more seriously. The transfer, whatever its benefits, would mean a loss of 1.0 percent of GDP from A and 0.25 percent of GDP from B. Getting this choice wrong means a net national cost of 0.75 percent of GDP.

To take a more ominous third case, if the whole earlier expansion of the budget from 1 percent of GDP to 25 percent of GDP had wrongly followed Policy A, the nation would already be staggering under the burden of a net mistake of 24 percent times (.40 - .10) = 7.2 percent of GDP. We should expect an outcry from those bearing all of this cost -- or more than all of it, if others favoring the costly choice actually benefit by it.

These numerical examples have in fact *understated* the tendency of the economic stake to rise with the share of taxes and transfers in GDP. They understated because they kept applying the same deadweight cost multipliers – 0.40 for Policy A and 0.10 for Policy B – at all budget levels. Yet we know from conventional economic analysis, and

from the political economy of deadweight costs, that these deadweight cost multipliers rise with the amount taxed and transferred. People should be much more sensitive to possible extra deadweight costs when budgets are already bigger.

In a democracy, *the extra economic costs become political costs*, as Volume 2 of this book argues in the spirit of the Becker model of pressure-group competition.[54] The larger the budget, the greater the political risk that large groups will notice and take action against those who advocate, or implement, the wrong choice. Such a rising "shadow price" of a wrong policy suggests a reason why it is the high-budget welfare states that got certain things right. While a low-budget United States could get locked (and still is locked) into the double taxation of dividends, a higher-budget government would run greater economic and political risks by magnifying the same mix of taxes.

Does the political process really work that way in democracies? The detailed histories of budgetary history remain to be written. We have, however, a few clear examples suggesting that mistakes are followed by corrections, at least as frequently and quickly when the budgets are bigger. Such corrections were evident in those early retirement policies that courted disaster in the face of population aging. Having shifted to dangerously generous retirement subsidies in 1972, Germany began paring back in 1982, with further tightening a decade later. The huge jumps in the generosity of Italy's retirement and disability policies between 1978 and 1983 were stalled after 1984, with further reforms in 1992 and 1995. The Dutch reaction time was a bit longer. They invited a flood disability claims after 1967, the flood came across the 1980s, and reforms began in earnest only in 1993.[55] In a reversal described elsewhere, Sweden's most powerful union in the 1970s forced through a law taxing profits to pay for workers' takeover of manufacturing firms, a class attack that was repulsed in stages between about 1983 and 1994.[56] Even the look of fiscal wisdom in the tax mix of high-budget countries shows up more clearly in the 1990s than in the 1970s. In the interim most of these countries improved their tax mix, even though the share of social transfers in GDP remained much the same.

There are also transfer policy adjustments on the part of low-budget countries, but they seem to have been slower and more limited. As we have seen, American and Britain took between the early 1970s and the 1990s (1993 for America, 1999-2000 for Britain) to

cut the high marginal tax rates that their strict means testing had imposed on the poor, and Americans failed to implement the often-discussed shift to flat consumption taxes and away from double-taxing dividends.

Could it be that electoral democracy exercises a crude form of cost control, and does so more effectively when the budgetary stakes get large? If so, the credit for a large social transfer budget that doesn't work badly goes both to its proponents and to its critics. And the difference between high-transfer welfare states and low-transfer market economies is not that the former bear any larger costs, but that the two kinds of countries have different political and social tastes.

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**Figure 1. The Average Effective Tax Rate on Capital Income, 1991-1997, versus Social Transfers**

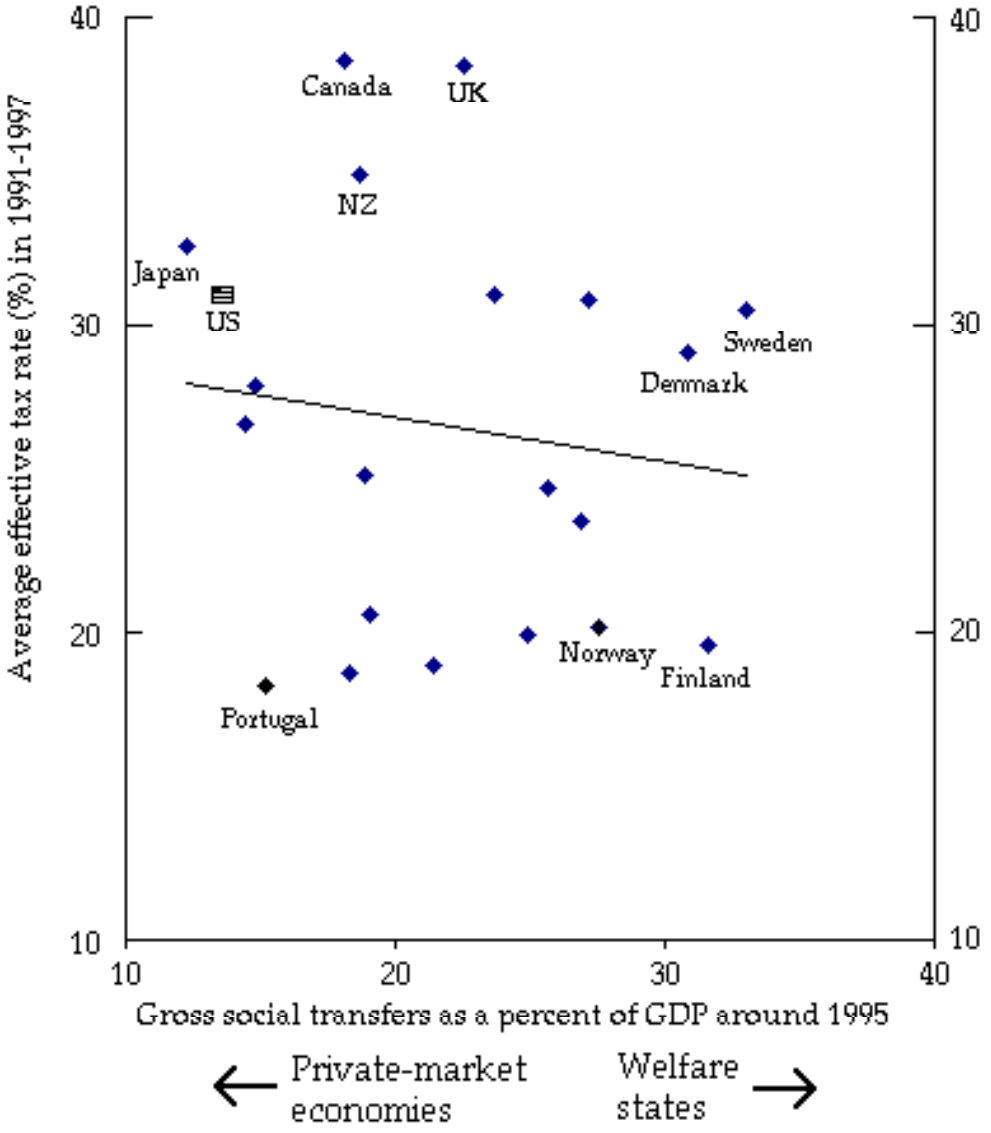


**Figure 2. The Average Effective Tax Rate on Property Income versus Social Transfers, 1991-1997**

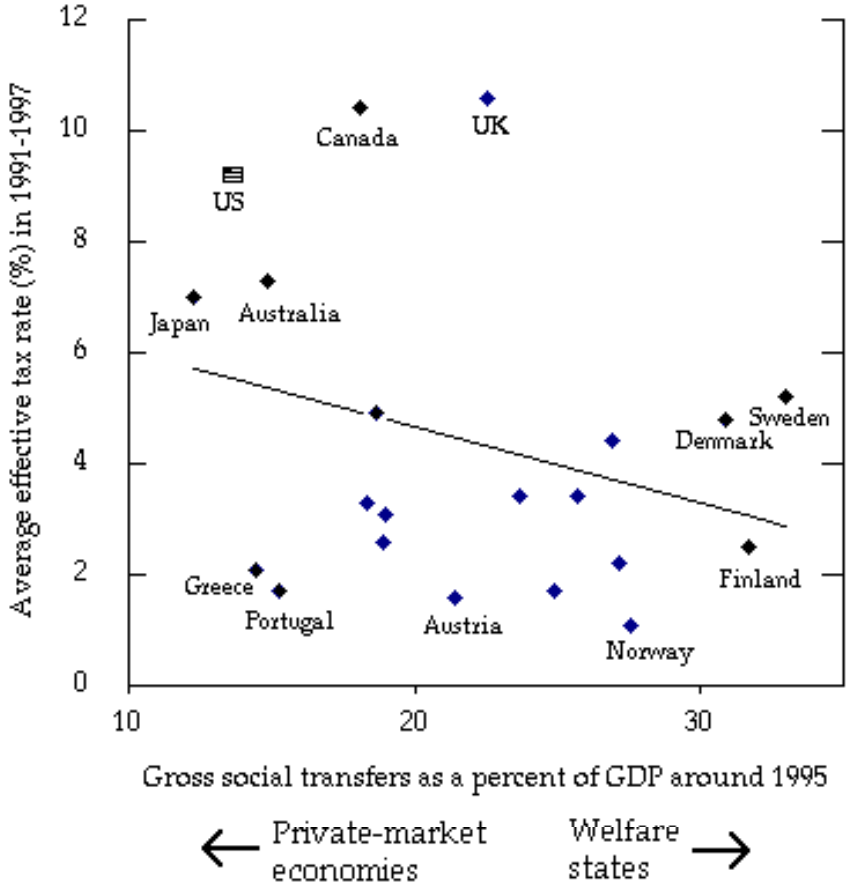


**Figure 3. The Average Tax Rate on Labor Income versus Social Transfers, 1991-1997**

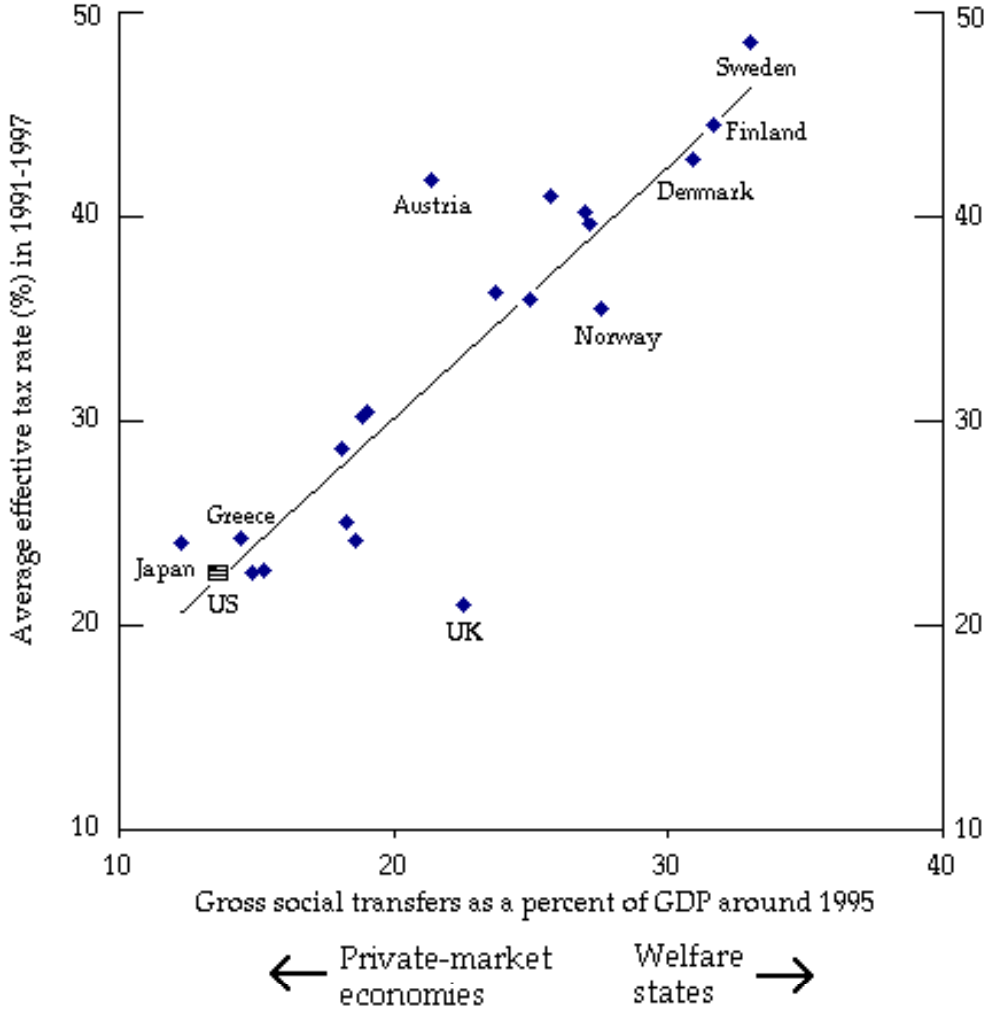
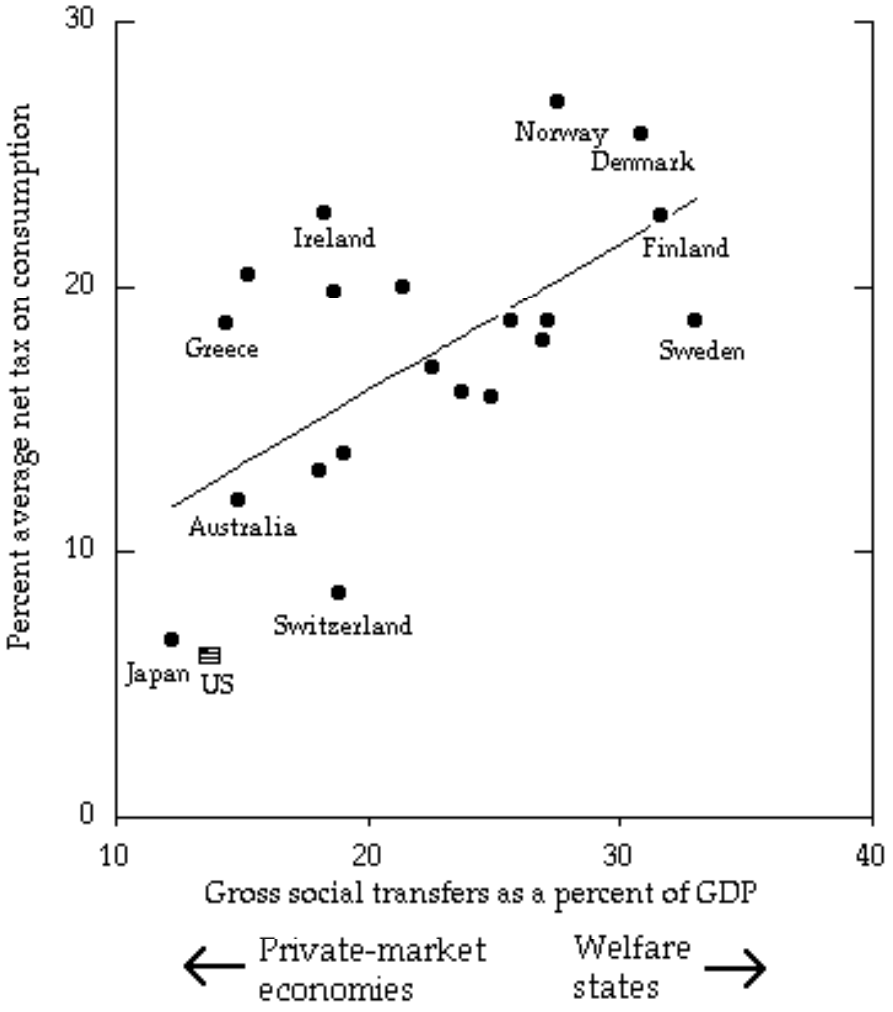
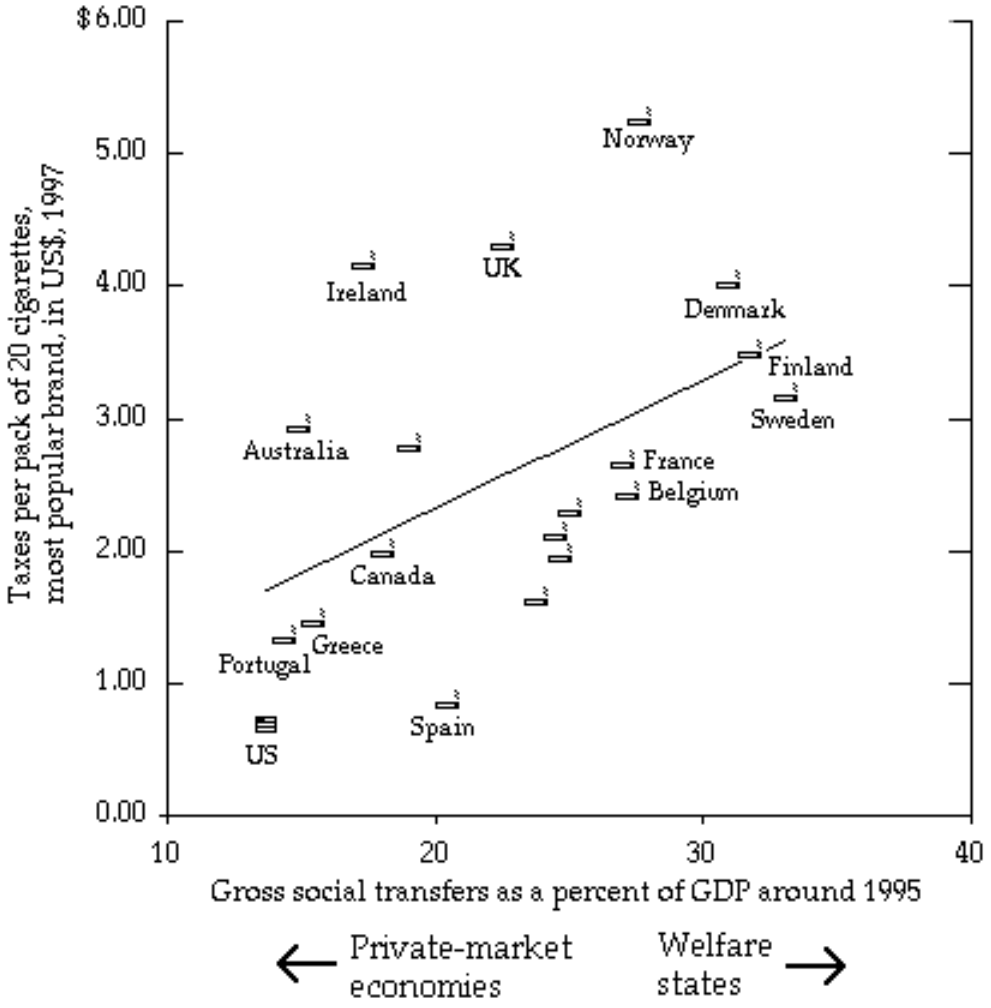


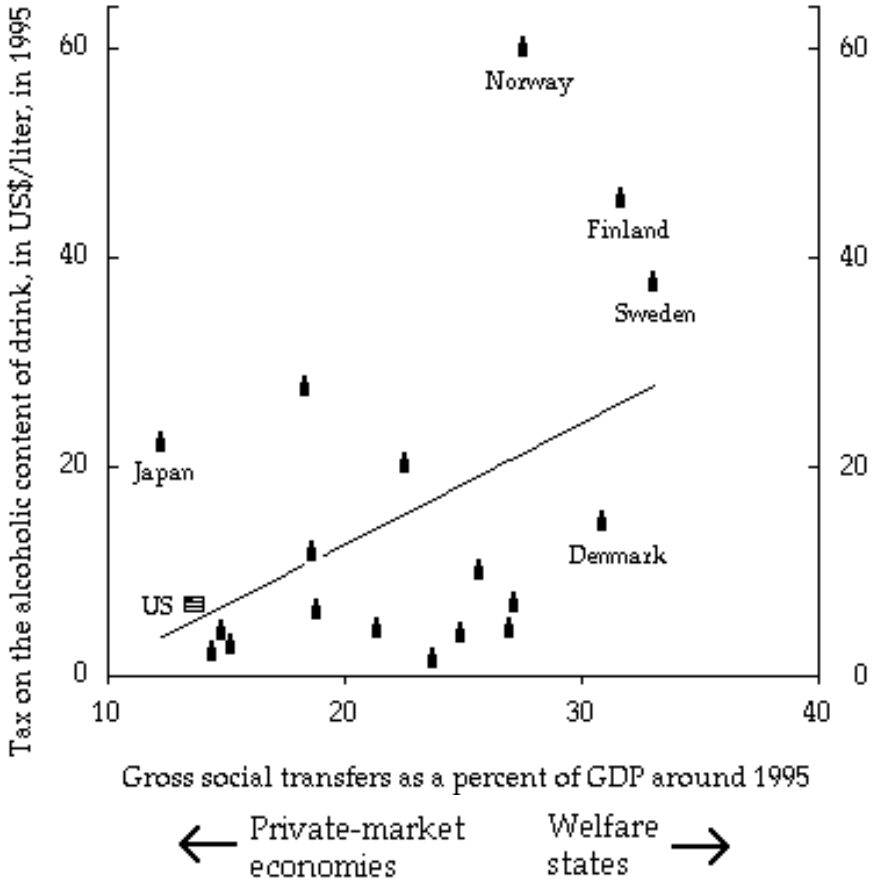
**Figure 4. The Average Tax Rate on Consumption 1991 - 1997 versus Social Transfers 1995**



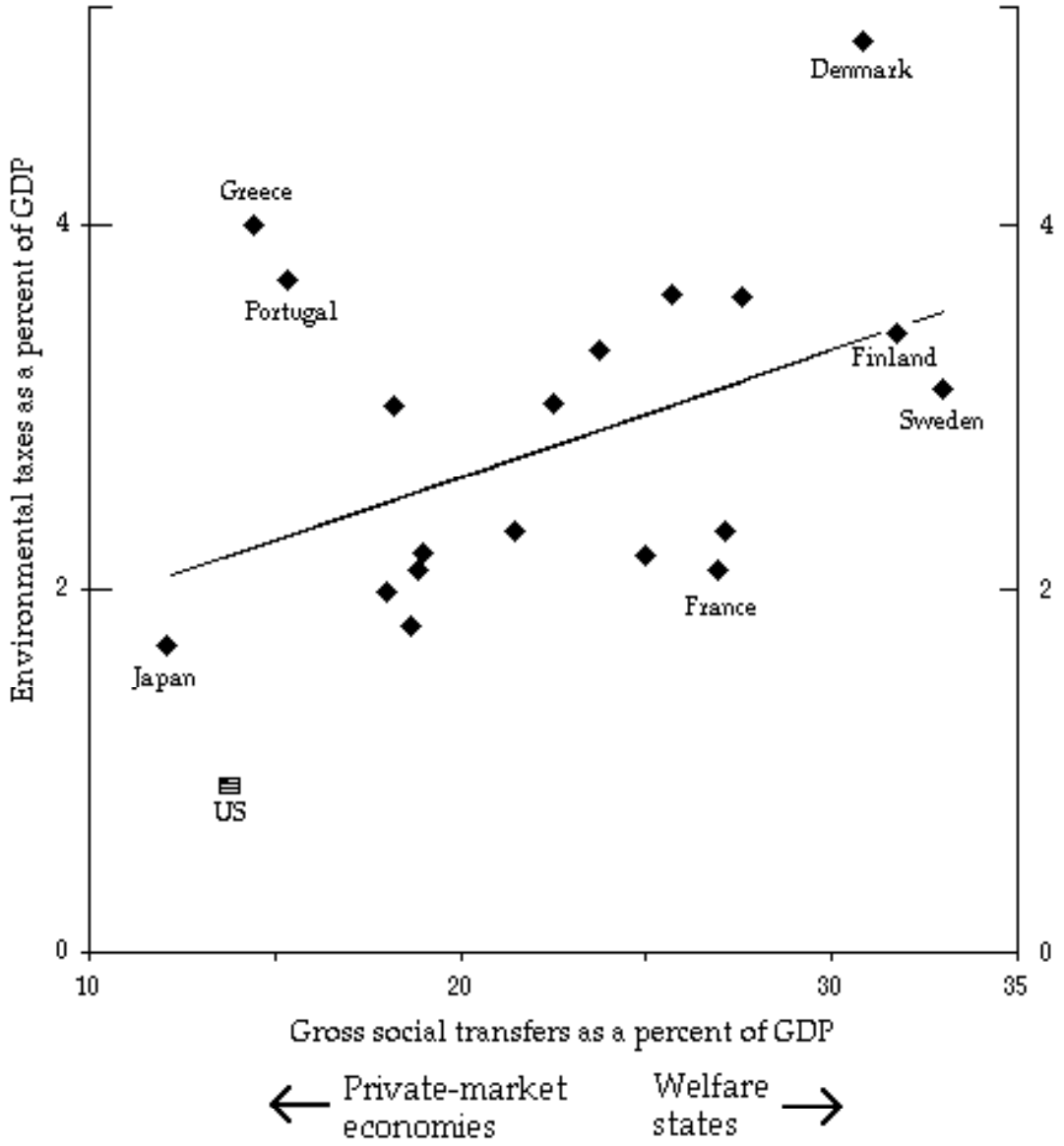
## Figure 5. The Average Tax Rate on Cigarettes 1997 versus Social Transfers around 1995



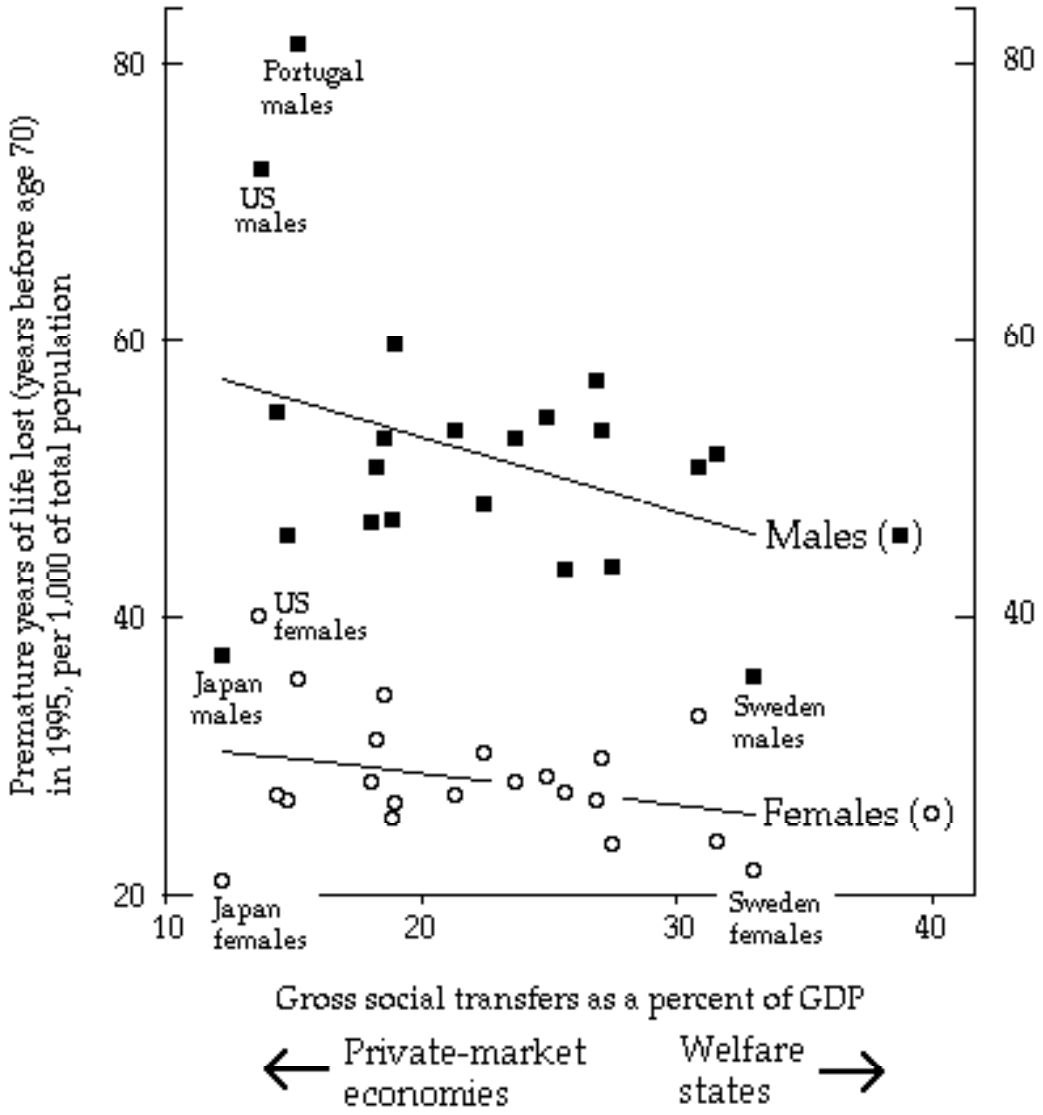
## Figure 6. The Average Tax Rate on Alcohol Content of Drinks, versus Social Transfers in 1995



## Figure 7. Environmental Taxes as a Share of GDP in 1998, versus Social Transfers



## Figure 8. The Rate of Early Death in 1995, versus Social Transfers 1995



**ENDNOTES**

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[1] This paper uses the two terms "social spending" and "social transfers" so as to capture the continuum of tax-based programs differing in their degrees of progressivity.

"**Social spending**" consists of these kinds of tax-based government spending:

- basic assistance to poor families, alias "poor relief" (before 1930), "family assistance," "welfare" (in America), or "supplemental income;"
- unemployment compensation, alias "the dole;"
- public non-contributory pensions, in which the funds come from persons other than the recipient and his or her employer;[1]
- public health expenditures;
- housing subsidies; and
- public expenditures on education.

The distinct term "**social transfers**" shall be reserved for all of the social spending above *minus* government expenditures on education.

These terms, and the list above, are designed to bring order to the blurry differences in redistributive "progressivity" – the rate of transferring income from rich to poor. In general, social spending categories are ranked as follows in terms of their progressivity:

(Basic assistance and unemployment compensation) **>** (pensions and public health) **>** (housing subsidies) **>** (primary public education) **>** (secondary public education) **>** (subsidies to higher edcucation).

[2] Murray may also have incorrectly used the results from two of the policy experiments to support his tale of Harold and Phyllis. In Denver and Seattle, Murray found, more lenient provisions did cause the poor to work and earn considerably less. Unfortunately for his purpose, it happens that the Denver and Seattle experiments had a bias toward greater underreporting of true earnings by those receiving the

experimental aid, relative to the control group (Greenberg and Halsey 1980), and the true loss of labor was considerably less. Other experimental results, for example from New Jersey, found more positive effects on the recipients' willingness and ability to find new jobs. (Watts and Rees 1977, volume II, Meyer (1995).

[3] For surveys of the pre-1995 American literature, see Killingsworth (1983), Burtless (1987), Triest (1990), and Meyer (1995). For updates featuring the switch to new American welfare rules, see Moffitt (2002a, 2002b).

[4] The median economist opinions were 0.00 - 0.05 for the Marshallian labor supply elasticity for men, 0.18 - 0.20 for men's Hicks elasticity, 0.30 for women's Marshall elasticity, and 0.43 for women's Hicks elasticity (Fuchs, Krueger, and Poterba 1998, 1392).

[5] As noted in footnote 3 above, Charles Murray's dramatization of the high elasticity of labor supply from the Seattle and Denver experiments was based on experiments that gave the highest, but also upward-biased, elasticities.

[6] Moffitt (2002a, 2002b).

[7] In a follow-up article published by the *American Economic Review*, Browning (1987) again plumbed for high estimates.

[8] Charles Stuart (1984), Ballard (1988), and Triest (1994).

[9] Barro and Lee (1993), Easterly and Rebelo (1993), Barro (1997), Padovano and Galli (2001).

[10] Barro and Lee (1993, 279) calculate government consumption by subtracting the available data on national defense and non-capital educational spending from total government purchases of goods and services (with some difficulties about price deflators that do not need attention here). Apparently, the only kinds of social expenditures that could have remained in the measure of government consumption are purchases of health care services and building of public-education and public-housing structures.

[11] See Koester and Kormendi 1989, Easterly and Rebelo 1993, Slemrod 1995, Commander *et al*. 1997, Mendoza *et al*. 1997, Agell *et al*. 1997, Agell *et al*. 1998. Others do find negative effects, but with specifications that are hard to interpret. See, for example, Folster and Henrekson (1999, 2000), who argue for significant GDP costs on econometric grounds, in debate with Agell *et al.* (1997, 1998).

Another recent study finding a significant effect of taxes on growth is Padovani and Galli (2001), who examined behavior of OECD countries in the 1960s – 1980s. Padovani and Galli identify separate overall marginal tax rates for each country, with adjustments for known tax reforms. These marginal rates have negative signs in conventional growth equations. Their procedure is subject to the limitations mentioned in the text. In particular, their handling of the tax-income relationship is hard to interpret. If an exogenous raising of tax revenues affects GDP in the same period, as they seem to imply, this feedback complicates the initial estimation of the marginal tax rate. By the time this possibly-biased tax rate has competed with prior GDP itself in an equation determining the growth rate of GDP, the true effect of an exogenous raising of tax revenues or tax rates eludes identification.

[12] Lindert, Social Spending, Chapter 18 and Appendix D, both in Volume 2.

[13] True, the limited property tax hike from zero to five percent of GDP is within sample. But this was a shift from the welfare states toward lower-spending countries.

[14] Easterly (1995).

[15] Mendoza *et al.* (1994, 1997); Mendoza and Tesar (1998), Carey and Tchilinguirian (2000).

[16] To start from a more muted impression of the contrasts in tax rates and then work back toward the likely stronger contrasts, let us use the revisions of the Mendoza *et al.*, estimates proposed by the OECD research team in Carey and Tchilinguarian (2000, Table 4, and Annexes). The OECD team rightly notes several ways in which the pioneering estimates by Mendoza, Tesar and others have overstated the taxation of labor incomes and of consumption. On the other hand, the OECD team's qualms about implausible international differences in capital consumption allowances (depreciation) led them to understate the rate of taxation on capital. To get around the implausible differences in depreciation, they divided capital-income taxes by a measure of gross private operating surpluses. This inflates the denominator and lowers the apparent tax rate.

The OECD team's choice of which error to make seems to be the correct one for present purposes. To get clearer comparisons across

countries, I have used their low tax rates on gross operating surpluses in order to avoid international distortions arising from those differences in stated rtes of depreciation.

[17] McLure (1990, 283), Carey and Tchilinguarian (2000, 39-40).

[18] Hansson and Stuart (1990, 135-137). Chapter 11 expands on Sweden's hidden deductions.

[19] Fuchs, Krueger, and Poterba (1998, 1392-1394).

[20] In this case of a permanent constant rate of consumption tax, the usual charge that flat consumption taxes are regressive is not correct. They take the same percentage of your income sooner or later, and the fact that the poor save less does not affect the eventual tax bite as a percentage of income. While calling the consumption tax regressive might seem to fit the text's general line of argument, they are not necessarily regressive relative to no tax at all, as this example is meant to show.

[21] Steinmo (1993, 213-214).

[22] The advance of anti-smoking campaigns does not correlate easily with the rate of tobacco taxation. Among the heavy taxers, Sweden was a pioneer in anti-smoking laws and campaigns, but Denmark and Norway have lagged in cutting down smoking. Among the countries with lower tobacco tax rates, Canada and the United States were relatively advanced in cutting down on smoking across the 1980s, while Japan was not (Wilensky 2002: 565-573).

[23] Taxes in the welfare states are still more "progressive" than in the countries that pay less in transfers. That is, they still take a somewhat higher share of pre-tax income from high-income groups than they do from low-income groups. But their extra progressivity is less than many would expect. Chapter 11 offers a specific comparison of Sweden's tax incidence with that of the United Kingdom and the United States.

[24] For a good summary chronology of American welfare policy since 1935, see Moffitt (2002a).

[25] The comparison with Sweden calls for two caveats. One is that the Swedish tax rates omit the consumption tax. Including it would require reading something like "sixty percent" for "fifty percent" in this paragraph. The other is that a study of Denmark in the same Atkinson-Mogensen volume implies very high marginal tax rates, such as ninety

percent. Yet the rates may not be comparable, and the Danish study goes on to note that labor supply did not seem to respond to the extremely high tax rate. Either the Danes have discovered secret improvements in program design, or the Danish marginal tax rate is well below that ninety percent figure.

[26] Blondal and Scarpetta (1998), Gruber and Wise (1999), and Wilensky (2002, 550-8).

[27] The "deadweight" welfare cost of earlier retirement is even smaller than the GDP cost, for reasons we note elsewhere. If subsidies to early retirement induce people to quite work when they otherwise would have worked, this means that they were close to a decision-making margin about whether or not to keep working for pay. Therefore the value of their free time must have been worth something close to their rate of pay. If a subsidy makes them retire earlier, we must value their gain in free time at something close to the wage they passed up. This adds a benefit to the retirement subsidy, one that is missed by GDP calculations.

[28] See, for example, Gruber and Wise (1999, 9) and the sources cited there.

[29] As quoted in Sala-i-Martin (1996, 277).

[30] Gruber and Wise 1999, pages 58-64, 94-7, 124-9, 218-20, 259-62, 284-93, 340-42, 385-9, 422-5, and 456-60.

[31] See Gruber and Wise 277 on the popularity of disability insurance with Dutch employers.

[32] OECD (1998d, 133-141 and 203-205).

[33] See Chapter 19 by Gayle Allard and Peter H. Lindert, in Volume 2.

[34] See Chapter 19 in volume 2, by Gayle Allard and Peter Lindert.

[35] See OECD (1994a, 1994b), and the sources cited by Forslund and Krueger 1997. In Chapter 19 of Volume 2, Gayle Allard and I also find no clear stimulus to jobs from ALMP.

[36] Heckman and Lochner 2000.

[37] See Blank (2000, 2002) and the whole volume 31 of *OECD Economic Studies* (2000/2) devoted to the theme of "making work pay."

[38] Fuchs (1988, 59).

[39] Joshi *et al*. (1998).

[40] Waldfogel (1998), Joshi *et al*. (1998).

[41] Goldin (1990).

[42] Or (2000).

[43] , Reinhardt (2000, 77).

[44] Hollingsworth *et al*. (1990, 141-146).

[45] World Bank (1993), Mehrotra and Delamonica (forthcoming).

[46] Where the contrast is between welfare states and the United States, one should note again that peculiarly American conditions raise mortality, as the huge positive residual for the United States in Table 4 implies. One possible source of the extra American mortality is lack of exercise and bad diet, which is not captured by Or's use of butter consumption to represent all fat consumption. Another is America's higher homicide rate, which is partly related to its extra firearms, as noted in the text.

[47] Angus Deaton (2001) has criticized much of the evidence that income inequality causes health inequality in large samples of individuals. His critiques does not seem to apply to the present evidence, which emphasizes both the curvature of the overall income-health relationship and especially the income-related inequalities in access to health care.

[48] See Hollingsworth (1986, 188-216); Hollingsworth *et al.* (1990); Preston and Haines (1991); and Steckel (1995).

[49] Hollingsworth and Hollingsworth 1994; Kawachi and Kennedy 1997; Rodgers 1997; Kennedy et al. 1998; World Health Organization 1999; Reinhardt 2000; Ross et al. 2000; Mehrotra and Delamonica, forthcoming.

[50] On the differences in physician visits by patients' income class across the twentieth century, see Hollingsworth (1986, 192-195).

[51] Hollingsworth 1986; Hollingsworth *et al*. 1990.

[52] Hollingsworth *et al.* 1990.

[53] Again, there is strong evidence from developing countries linking basic health care for the poor with productivity gains. Also strong is the evidence that investing in women's basic schooling promotes their own and their children's health and productivity. See World Bank, World Development Report (1993) and Mehrotra and Delamonica (forthcoming) for surveys of that evidence.

[54] Becker (1983, 1985), and Becker and Mulligan (1998).

[55] Gruber and Wise (1999, Chs. 4, 5, 7), Wilensky (2002, 550-8). OECD (1998e, 77-107).

[56] See *Social Spending*, Chapter 11.

## Table 1. Illustrative Regressions for Growth of GDP per capita, 1978/80 - 1993/95

| | Dependent variable = log-growth over 3 years, so that .01 is a growth rate of about 1% over 3 years. | | | | Dependent variable = log of GDP/capita | | |
|---|---|---|---|---|---|---|---|
| | Equation (1.) | | Equation (2.) | | Equation (3.) | | |
| Independent variables: | coeff. | \|t\| | coeff. | \|t\| | coeff. | \|t\| | |
| Shortfall in GDP/capita 10 years earlier | 0.028 | (1.45) | 0.059 | (3.87) ** | | | |
| Log of non-resid. cap. stock, 3 yrs. earlier | | | | | 0.384 | (7.61) | ** |
| Capital formation/capita, one yr. earlier | .0000078 | (1.84) a | .000002 | (0.55) | | | |
| Capital formation/capita, 10 yrs. earlier | .0000003 | (0.06) | .000004 | (0.72) | | | |
| Prim. + sec. enroll'ts/5-14s, 10 yrs. earli | .06324 | (2.49) * | .0403 | (1.96) a | 0.051 | (0.91) | |
| University enroll'ts/5-14s, 10 yrs. earlier | .00087 | (0.01) | .0010 | (0.01) | 1.156 | (3.40) | ** |
| *Age distribution:* | | | | | | | |
| Populat'n under 15 as a share of total po | -0.00047 | (0.21) | -0.0014 | (0.63) | -0.015 | (2.30) | * |
| Populat'n over 65 as a share of total pop | 0.00039 | (0.14) | -0.0009 | (0.37) | 0.020 | (2.64) | * |
| *Aggregate demand and supply, all countries* | | | | | | | |
| Inflation - unemployment, all countries | 0.0081 | (4.77) ** | 0.0081 | (5.45) ** | 0.876 | (4.71) | ** |
| Inflation + unemployment, all countries | -0.012 | (4.64) ** | -0.012 | (5.66) ** | -0.746 | (3.22) | ** |
| *Government policy (these yield the effects for 1978-1995 on Table 2):* | | | | | | | |
| Corporatism | 0.00067 | (0.21) | 0.00040 | (0.21) | -1.747 | (1.37) | |
| Predicted total transfers as % of GDP | 0.0033 | (0.88) | -0.0016 | (0.50) | 0.012 | (1.41) | |
| " , squared | -0.00016 | (1.60) | 0.00001 | (0.15) | -0.025 | (1.29) | |
| Predicted personal income tax as % of C | -0.0053 | (1.25) | | | | | |
| " , squared | 0.00023 | (1.47) | | | | | |
| Predicted corporate inc. tax as % of GDI | 0.0192 | (1.42) | | | | | |
| " , squared | -0.0035 | (1.62) | | | | | |
| Predicted property tax as % of GDP | 0.033 | (2.07) * | | | | | |
| " , squared | -0.010 | (2.73) ** | | | | | |
| Predicted consumption tax as % of GDP | 0.0042 | (2.41) * | | | | | |
| " , squared | -0.000081 | (2.55) * | | | | | |
| Constant term | 0.073 | (0.69) | 0.220 | (2.70) | 5.339 | (8.91) | |
| Buse "R sq.," equation F-statistic | .461 | 4.485 | .417 | 6.728 | .792 | 43.907 | |
| Mean of the dep. variable, std. error of estin | 0.063 | 1.032 | 0.063 | 1.006 | 9.365 | 1.004 | |

(** = significant at the 1% level, two-tail; * = significant at the 5% level;
a = significant at the 7% level; b = significant at the 10% level.)

The sample consists of 21 countries for 6 three-year periods from 1978/80 through 1993/95. The countries are Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Japan, Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, United Kingdom, and United States.

Each equation is generalized least squares, with country-specific variances. The variables called "predicted" are instrumented values from first-stage regressions on all exogenous variables. The main first-stage determinants of social spending and tax rates are the age distribution, voter turnout rates, average income, religion, ethnic fractionalization, and openness to trade.

Enrollment rates here are per person 5-14, not per 1000 persons 5-14, for the purpose of scaling coefficients.

The full set of fixed effects for 5 time periods and 20 countries was not used in the growth regressions. Including those 25 variables added little insight, and made the whole growth equation only marginally significant.

Sources and notes to Table 2:

(** = significant at the 1% level, two-tail; * = significant at the 5% level;
a = significant at the 7% level; b = significant at the 10% level.)

The sources are those used in *Social Spending,* Appendix D, Appendix Tables D.3 and D.4.

Social transfers exclude spending on public education, just as in other chapters. Expenditures on public housing were apparently excluded from the OECD's 1960-1981 sample. Therefore, for comparability, they are explicitly excluded from the 1978-1995 sample, even though the OECD data separately identify public housing expenditures from 1980 on.

To save space, the table omits a residual column for the 1978-1995 effects of social transfers financed from all other sources of funds different from the four kinds of taxes shown here. The residual column would have shown insignificantly positive effects of social transfers thus funded, for any expansion up to 15% of GDP, which was beyond the maximum use of such sources. These insignificantly positive effects were just under 1 percent of GDP.

**Table 2. How Have Extra Social Transfers Affected Real GDP per Capita since the 1960s?**

Each cell = a percentage effect of extra social transfers on real GDP per capita

| Raising social transfers' share of GDP | Among 19 countries in 1962-1981, the cumulative effect on GDP after 4 years, financed by the actual mix of of extra revenues, deficits, and cuts in non-social spending | | Among 21 countries in 1978-1995, the cumulative effect on GDP after 3 years, financed by the actual mix of of extra revenues, deficits, and cuts in non-social spending | | financed solely by raising -- personal income taxes | | corporate income taxes | | property taxes | | consumption taxes | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | effect | std. err. | effect | std. err. | effect | std. err. | effect | std. err. | effect | std. err. | effect | std. err. |
| from 0% to 5% | 0.06 | (0.29) | -0.59 | (1.43) | -0.08 | (1.98) | 2.05 | (2.81) | -7.85 | (3.53) * | 3.12 | (1.75) b |
| from 0% to 7.5% | 0.11 | (0.40) | -0.87 | (2.00) | -1.11 | (2.73) | -3.80 | (4.39) | -31.12 | (10.31) ** | 4.23 | (2.44) |
| from 0% to 10% | 0.19 | (0.50) | -1.14 | (2.47) | -1.29 | (3.33) | -14.25 | (1.45) | -67.29 | (22.43) ** | 5.04 | (3.00) b |
| from 0% to 15% | 0.38 | (0.63) | -1.65 | (3.12) | -1.38 | (4.10) | | | | | 5.76 | (3.75) |
| from 0% to 20% | 0.64 | (0.69) | -2.12 | (3.40) | -1.10 | (4.43) | | | | | 5.28 | (4.06) |
| from 0% to 25% | 0.96 | (0.71) | -2.55 | (3.35) | -0.45 | (4.59) | | | | | 3.61 | (3.98) |
| from 0% to 33% (near Sweden's 1993-95 max) | 1.62 | (0.76) * | -3.16 | (2.84) | 1.37 | (5.77) | | | | | -1.55 | (3.64) |
| from 10% to 18.72% (from Japan or US to average for 1978-95) | 0.38 | (0.22) | -0.86 | (0.95) | 0.08 | (1.49) | | | | | 0.48 | (1.15) |
| from 10% to 33% (near Sweden's 1993-95 max) | 1.43 | (0.62) * | -2.01 | (1.82) | 2.62 | (5.74) | | | | | -6.48 | (2.90) * |

***Bordered areas = Extrapolations beyond the combinations of social transfers and taxes that actually occurred in the historical sample.***

**Table 3. Average Effective Tax Rates 1991-1997 versus the Social Transfer Share of GDP 1995**

| | AETR on all gross capital income | AETR on gross income of property | AETR on income of labor | AETR on consumption | *versus* -- Social transfers in 1995, as a percent of GDP |
|---|---|---|---|---|---|
| Australia | 28.0 | 7.3 | 22.6 | 11.9 | 14.8 |
| Austria | 18.9 | 1.6 | 41.8 | 20.0 | 21.4 |
| Belgium | 30.8 | 2.2 | 39.7 | 18.7 | 27.1 |
| Canada | 38.6 | 10.4 | 28.7 | 13.1 | 18.1 |
| Denmark | 29.1 | 4.8 | 42.8 | 25.7 | 30.9 |
| Finland | 19.6 | 2.5 | 44.5 | 22.7 | 31.6 |
| France | 23.6 | 4.4 | 40.2 | 18.0 | 26.9 |
| Germany | 19.9 | 1.7 | 35.9 | 15.8 | 24.9 |
| Greece | 26.8 | 2.1 | 24.3 | 18.6 | 14.4 |
| Ireland | 18.7 | 3.3 | 25.1 | 22.8 | 18.3 |
| Italy | 31.0 | 3.4 | 36.3 | 16.0 | 23.7 |
| Japan | 32.6 | 7.0 | 24.0 | 6.7 | 12.2 |
| Netherlands | 24.7 | 3.4 | 41.0 | 18.7 | 25.7 |
| New Zealand | 34.9 | 4.9 | 24.2 | 19.8 | 18.6 |
| Norway | 20.2 | 1.1 | 35.5 | 26.9 | 27.6 |
| Portugal | 18.3 | 1.7 | 22.7 | 20.5 | 15.2 |
| Spain | 20.6 | 3.1 | 30.4 | 13.7 | 19.0 |
| Sweden | 30.5 | 5.2 | 48.5 | 18.7 | 33.0 |
| Switzerland | 25.1 | 2.6 | 30.2 | 8.4 | 18.9 |
| UK | 38.4 | 10.6 | 21.0 | 16.9 | 22.5 |
| US | 31.1 | 9.2 | 22.6 | 6.1 | 13.7 |
| Simple average | 26.7 | 4.4 | 32.5 | 17.1 | 21.8 |

Sources and notes to Table 3 and Figures 1-7:

The tax rates on capital, property, labor and income are from Carey and Tchilinguirian (2000, Table 4). The cigarette tax rates are from http://www.drugs.indiana.edu/drug_stats/cigtax_burden, as viewed on 12 December 2000. The tax rate on alcoholic content was derived using data from *OECD Revenue Statistics 1965-1999* ; *OECD Health Data 2000* ; and United Nations, *World Population Prospects, 1996 Revision* . The environmental tax shares of GDP are taken from Joumard (2001, 24). The social transfers shares are derived from OECD's CD-ROM *OECD Social Expenditure Database 1980-1996 (1999)* and from World Penn Tables, version 6.0, early file as of December 2000.

The tax rates in this table are the average effective tax rates (AETRs), using the revised methodology of Carey and Tchilinguirian. The measures of gross income from all capital or from property use the "gross operating surplus" concept that does not subtract any capital consumption allowance (depreciation) from the income denominator.

Denmark's capital income tax rate is for 1991-1996.

**Table 4. Hurdles in the Path Out of Poverty:**
**Marginal Net Tax Rates Faced by a Lone Parent**
**with Two Children in America and Britain in 2000**

Each number is a marginal net tax rate, or the change in (gross earnings - benefits), as a percent of the change in gross earnings

| | The change in the parent's work scenario: | | | |
|---|---|---|---|---|
| **If there were no** tax credits for low-pay work (no EITC in US, and no WFTC in UK) | From no work to part time min-wage | From part time to full time, min-wage | From min-wage to $9/hour, full time | The whole jump, from no work to $9/hour full time |
| Median of 12 US states | 52 | 67 | 27 | 51 |
| United Kingdom | 141 | 83 | 2 | 60 |
| **With** the actual tax credits for low-pay work (EITC in US, and WFTC in UK) | From no work to part time min-wage | From part time to full time, min-wage | From min-wage to $9/hour, full time | The whole jump, from no work to $9/hour full time |
| Median of 12 US states | 12 | 28 | 65 | 45 |
| United Kingdom | -2 | 7 | 69 | 33 |
| Sweden 1991 | <--- Between 30% and 50% ---> | | | |

The sources are Acs *et al.* (1998), Brewer (2000), and Gustafsson and Klevmarken 1993..

EITC = Earned Income Tax Credit on modest wage incomes in the US.
EITC started on a modest scale in 1975 and was expanded in 1986-1994.
This calculation based on October 1997 rates ignores some state supplements to the federal EITC that were being set up around 2000.
WFTC = Working Families Tax Credit in the UK, which reached its current levels in June 2000, after starting more modestly in 1971.
Part-time work = 20 hours a week, and full-time work = 35 hours a week.
Min-wage = For the U.S, the national minimum wage as of October 1997, or $5.15 an hour. For comparison with the US, Brewer's calculation for the UK uses £3.65 an hour as the $5.15 minimum wage and £6.50 as the $9 wage.

These calculations assume a 30-day month of 4.29 (=30/7) work weeks.
I have ignored any effect of EITC on other benefits or tax rates.
I have assumed that the American parent has not yet exhausted her lifetime welfare eligibility under the US welfare reform of 1996 (PRWORA).
In the American case, none of these work scenarios receives enough net disposable income to lift the three-person household out of poverty. Working full time at $9 an hour brings a net income of only $1351 a month, whereas the official poverty line for such a household was $1367 in 1997.
Each of these calculations ignores consumption taxes.
The twelve US states analyzed by Acs *et al.* are Alabama, California, Colorado, Florida, Massachusetts, Michigan, Minnesota, Mississippi, New Jersey, New York, Texas, and Washington. In all twelve cases, every contrast between rates is in the same direction as described in the text.
The Swedish rates are the averages of those generally characteristic of a single adult student, a couple with children in day care, and an absent parent subject to child support, all in Stockholm 1991.

**Table 5. Health Care Systems and other Determinants of Life Saving, Selected Countries versus Japan in 1992**

Explaining premature years of life lost (PYLL) per 100,000 persons living in 1992 relative to Japan, both sexes
(Negative = better life-saving relative to Japan)

| | France | Netherlands | Sweden | UK | US | OECD average |
|---|---|---|---|---|---|---|
| Actual excess mortality (PYLL) relative to Jap | 34.7 | 19.3 | 6.0 | 28.2 | 61.3 | 31.1 |
| Amount of excess PYLL due to differences in: | | | | | | |
| Income and occupations | -5.9 | -8.6 | -9.9 | -4.5 | -18.7 | 4.9 |
| Pollution | 6.3 | 8.8 | 10.4 | 9.9 | 14.5 | 8.5 |
| Four bad consumption habits | 25.9 | 14.9 | 6.7 | 15.0 | 12.7 | 13.5 |
| Total health expenditures per capita | 0.3 | 4.1 | 5.2 | 5.7 | 0.9 | 5.3 |
| Public share of total health expenditures | -0.9 | -1.3 | -3.1 | -2.8 | 8.5 | -0.6 |
| Not explained by any of these forces | 8.9 | 1.4 | -3.3 | 4.8 | 43.6 | -0.5 |

Sources and notes to Table 5:

All estimates are from Or (2000/1), which displays results for 21 countries, 1970-1992.

PYLL = Premature years of life lost before age 70, per 100,000 of population. An infant death counts as a loss of 70 years, and a death at age 65 counts as 5 years lost. Thus the United States exess of 61.3 relative to Japan in 1992 is equivalent to 6.13 excess US deaths at age 60 per 100,000 of population where the corresponding Japanese would have survived to age 70. Alternatively, the 61.3 is equivalent to almost one (61.3/70) extra infant death per year oer 100,000 of population.

Income and occupations = the sum of two products of (regression coefficients * the differentials or changes) in two independent variables. The two are real GDP per capita in 1990 international dollars and the share of white collar workers in the total labor force.

Pollution = the contribution to PYLL from NOx emissions per capita, in kilograms per year.

Four bad consumption habits = the contributions to premature mortality made by

(1) liters of alcoholic beverages per person over 15;

(2) consumption expenditure on tobacco per person over 15, US$ at 1990 price levels and PPPs for tobacco consumption;

(3) butter consumption per capita, in kg per year; and

(4) sugar consumption per caita, in kg per year.

Total heatlh expenditures per capita is measured in US$ at 1990 prive levels and PPPs for medical consumption.

Public share of total expenditures = the share of public expenditure in total health expenditure.

Note explained by these = the sum of the residual, or prediction error, plus (for Panel (A.)), the fixed effect for that country.