How costly is a large, redistributive public sector?

Joel Slemrod[*]

Summary

■ When implementing programs and raising tax revenues to finance them, governments generally redistribute resources. An *iron law* holds that any redistribution of resources from the better-off members of society to the worse-off members will be costly in terms of economic performance; a corollary states that just how costly a large redistributive public sector is depends on how responsive taxpayer behavior is to the high marginal tax rates redistribution requires. Two types of evidence suggest answers to this question:

• The *bottom-up* approach, which examines microeconomic evidence of the impact of particular tax changes on particular dimensions of individual behavior

• The *top-down* approach, which examines whether there are cross-country differences in economic performance associated with summary measures of a country's tax system

This paper reviews microeconometric, bottom-up literature and cross-country, top-down literature. It stresses the lessons learned from tax changes in the U.S. since 1981, in particular the importance of distinguishing income creation from income-shifting responses. It concludes by questioning if the terms of the equality-efficiency trade-off must inevitably worsen due to the globalization of economic activity. ■

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Modern governments are involved in a vast amount of different activities. These include providing public goods, providing and/or regulating goods with externalities, providing and/or subsidizing private goods, and operating social insurance programs. In the process of carrying out these activities and in raising the tax revenues to finance them, governments effect a redistribution of resources; to different degrees this redistribution is a deliberate result of policy.

Any particular government program in any particular country must be evaluated on its own merits, and no universal calculus applies. But there is the hint of an iron law in the background of all such evaluations: any redistribution of resources from the better-off members of society to the worse-off members will be costly in terms of economic performance. This is the fabled tradeoff between equality and efficiency enshrined in the title of Arthur Okun's (1975) famous book and succinctly stated by Henry Simons when he noted that "both progress and justice are costly luxuries—costly, above all, in terms of each other." (1938, p. 24)
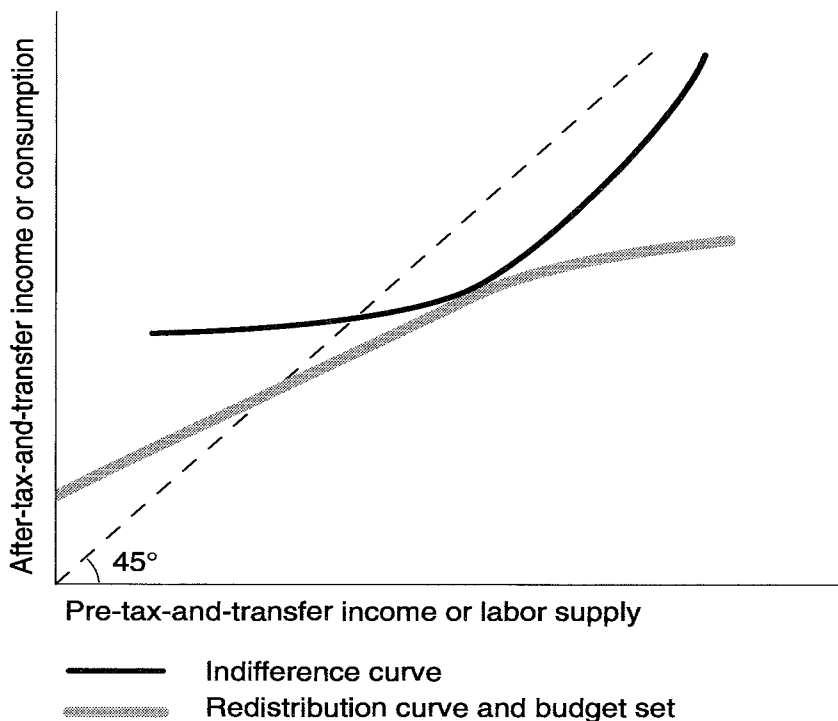
Figure 1 illustrates the simple economics of this iron law. There are two alternative ways to label the axes. First, think of the x-axis as pre-tax-and-transfer income (or consumption) and the y-axis as after-tax-and-transfer income (or consumption). The forty-five degree line represents a world with neither taxes or transfers. A redistributive fiscal system is represented by a curve that is above the forty-five degree line at low incomes, below it for higher incomes, and with a slope less than one.

Now relabel the x-axis to be labor supply and the y-axis as consumption, and think of the curve as a budget set for an individual or household. Indifference curves would be positively sloped, given that leisure, the inverse of labor supply, is of value to the household. With this reinterpretation, it is clear that a redistributive tax system of necessity reduces the slope of the budget line below one, which in turn causes a substitution away from labor. This is the source of the claim

that a redistributive tax system must inevitably, through disincentive effects, have an efficiency cost.

An important corollary to the iron law is that how big an efficiency cost any given tax system engenders depends on how responsive economic behavior is to the changes in relative prices (of goods versus leisure, in the previous example) that taxes cause. If people work 40 hours a week, 2000 hours a year, pretty much regardless of whether 20% or 50% of their wages and salaries are taxed away, then the cost of the higher tax rate—in terms of time channeled from more productive labor to less valued other uses—will be relatively low. But if increasing the tax from 20% to 50% causes a massive withdrawal of labor supply, then its costs are certain to be higher.

Figure 1. An illustration of the iron law: a redistributive tax system must cause distorting substitution away from labor supply.

Pre-tax-and-transfer income or labor supply

———— Indifference curve

░░░░ Redistribution curve and budget set

So the question of how costly a large redistributive public sector is hinges on how responsive behavior is to high tax rates.[1] There are two broad types of evidence to bring to bear on this question. One, which I call the *bottom-up* approach, examines microeconomic evidence of the impact of particular tax changes on particular dimensions of individual behavior; the most studied have been labor supply, savings, and investment. The second type, what I call the *top-down* approach, examines whether there are cross-country differences in economic performance associated with summary measures of a country's tax system. The conclusions of these two kinds of methodologies should be consistent, because presumably economic performance could, for example, be adversely affected by high tax levels only via the influence of the tax rates on the behavior of individuals and firms. But because the two kinds of studies have different methodological strengths and weaknesses, the conclusions they suggest will not necessarily always line up.

In the next two sections I review what can be learned, first from the microeconometric, bottom-up literature and then from the cross-country, top-down literature. In the first part, I stress the lessons to be drawn from the tax changes in the U.S. since 1981.[2] I close by asking whether the terms of the equality-efficiency tradeoff must inevitably worsen due to the globalization of economic activity.

1. Bottom-up evidence

Because there is neither space nor time to address the evidence regarding the impact of taxes on all aspects of behavior, I concentrate on two related issues: the response of labor supply and the response of taxable income. In the simplest models of the impact of taxes, tax-

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[1] Technically, it depends on the responsiveness to taxes excluding the effect that operates via its effect on the level of taxpayer well-being, and only on the effect that operates via the change in relative prices.

[2] Of course, the U.S. is not the only country to recently have had a major tax reform which is potentially informative. The Swedish "tax reform of the century" in 1991 is another example. After reviewing the evidence of its impact, Agell, Englund, and Södersten (1996) reached a conclusion similar to that expressed here that real substitution responses of labor supply and saving appear quite small, although certain tax-related financial activities were eliminated and the effect on portfolio composition was large. But they stressed that when starting from marginal tax rates of 70% or more, even relatively small elasticities of response can correspond to a large marginal excess burden of taxation.

able income can change only via hours of work, but there are a host of other margins that affect taxable income.

1.1 Labor supply

I believe it is fair to say that there is widespread (although not unanimous) agreement among economists that taxes have a very small negative effect on hours worked by men and a larger effect for women, which operates largely through its effect on the participation decision rather than through hours worked conditional on participating. This is the conclusion of the surveys by Killingsworth (1983), Pencavel (1986), and Blundell (1996).[3]

The evidence arising from the recent U.S. tax changes is consistent with this view. Evidence on the actual, labor-supply response confirms these generally modest predictions for men and in some studies suggests even a smaller response among women. Mariger (1995) used data from the Panel Study of Income Dynamics to estimate the effects of the Tax Reform Act of 1986 (TRA86) on the changes in hours worked between 1986 and 1988, focusing on those married men and women who worked an average of at least 10 hours per week in each year between 1985 and 1988. On average, between 1986 and 1988, the number of hours worked increased by 2.7% for males and by 3.4% for females, while the marginal tax rate fell by 8.0% for both groups. But in a multiple regression analysis that controlled for changes in pre-tax wage rates, Mariger estimated that the tax reductions caused an average percentage change in labor supply of only 0.99 for men and only 0.29 for women.

Eissa (1995) analyzed the labor-supply response of married women to TRA86. In her methodology, women in the 75th percentile, who experienced very small marginal tax-rate reductions in TRA86, served as a control group for women at or above the 99th percentile of the income distribution, for whom marginal, tax-rate reductions were generally quite large. Using data from the March Current Population Survey from 1984 to 1986 and from 1990 to 1992, Eissa found evidence of tax-rate responsiveness. Relative to the control group, married women at the top of the income distribution, increased their labor supply by 18%, which translates into an elasticity

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[3] Gustafsson and Klevmarken (1993) are less sanguine about what we know, declaring that "a truthful answer [to what is known about labor-supply responses in Sweden] based on evidence from microdata is, unfortunately, that we do not know very much!" (p. 87)

with respect to the after-tax wage of about 0.8; this responsiveness is divided approximately equally among a participation elasticity and an elasticity of hours worked, conditional on participation. When Eissa (1996) applied a similar methodology to the labor-supply response of males, she found evidence of very little response to the tax changes of TRA86. She concluded that the overall elasticity of labor supply, weighted by the importance in labor income of the males and females, is likely to be quite low.

Most recently, Moffitt and Wilhelm (forthcoming) investigated the hours worked response of affluent Americans to TRA86, which lowered the top marginal tax rate from 50% to 28% while broadening the tax base. Using the 1983-1989 panel data from the Survey of Consumer Finances, they observed that the annual hours worked of high-income, prime-age males actually fell between 1983 and 1989, while it rose for all others; regression analysis using instrumental variable techniques failed to detect a labor-supply response significantly different than zero.

Several caveats to these and future studies are in order. Any analysis of labor-supply responses that is based on a change in statutory, marginal, income tax rates must consider the overall distribution of marginal tax-rate changes and the indirect impacts on effective marginal tax rates of base-broadening of the personal income, corporate income tax changes, and changes in consumption taxes. The usual constraints on tax reform of approximate revenue and distributional neutrality imply that aggregate labor supply could have increased only modestly, and the evidence, although not entirely consistent, supports this notion. It is not clear, then, to what extent these findings confirm that labor-supply elasticities are modest, or instead are revealing that the incentive to supply labor did not change nearly as much as the changes in statutory tax rates would indicate.[4]

Moreover, all of these studies define labor supply as hours of work, whereas there are many other dimensions to it, including effort, occupational choice, and investment in education. Taxes may affect all of these margins, and our knowledge of their responsiveness is extremely limited. Finally, one must take note of the argument of Lindbeck (1995) that the disincentive effects of taxes are delayed, primarily (but not only) because habits, social norms, articles, and ethics restrict the influence of economic incentives on economic be-

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[4] Auerbach and Slemrod (1997) elaborate on this argument.

havior and that individuals gradually stop obeying existing habits and norms. Lindbeck surmises that serious disincentive effects might occur when a new generation enters working life and forms its values on the basis of a new incentive structure.

1.2 Taxable income

Reducing market labor supply is only one possible avenue of behavioral response to high, marginal tax rates. There are many others, including increasing the level of tax-deductible activities, postponing taxable activities to the retirement (and presumably lower-taxed) years, increasing evasion, and so on. Under some conditions, discussed in Slemrod and Yitzhaki (1996), the cost of a redistributive tax system is related to the elasticity of total taxable income to the marginal tax rate, regardless of whether the elasticity is due to labor-supply response or from another margin of response. In the most stylized of models, the marginal cost of funds is simply $1/(1+e)$, where e is the (defined to be negative) elasticity of taxable income with respect to the tax rate. The higher is the responsiveness of taxable income, the higher is the true social cost of raising a dollar in taxes, for either redistribution or for public projects.

There is quite strong evidence from the U.S. experience since 1981, and particularly from the Tax Reform Act of 1986 that, for high-income families, income subject to tax responded substantially to changes in the marginal tax rate. Certainly, there were substantial changes about the time of TRA86. Feenberg and Poterba (1993) documented that the share of adjusted gross income (AGI), the federal tax concept of income, received by the top 0.5% of households arranged by income jumped from 7.7% in 1985 to 12.1% by 1988; this is an extraordinary increase in the concentration of reported income subject to tax by those affluent households subject to the largest tax reduction; as Slemrod (1996a) showed, this increase is overstated because the definition of AGI changed over this period, but even using a consistent definition, the relative increase over this period of income reported by the top 0.5% or 1.0% of households is striking. Nor is this increase an artifact of comparing cross-sections of individuals ranked differently in two periods. Feldstein (1995a) and Auten and Carroll (1995), using two different samples of panel data, found that the percentage change in taxable income of high-income individuals to be much higher than that of lower-income individuals who did not experience such large decreases in marginal tax rates.

The coincidence of exceptionally high growth of taxable income and the relatively large decline in marginal tax rates might be just that, and not a causal association. After all, there is a wide consensus that the inequality of wage rates has grown considerably in the U.S. over the past two decades; for example, between 1979 and 1987 there was a 11.7% increase in the average wage of a college graduate relative to a high school graduate, and a 14.1% increase relative to a high school dropout (Katz and Murphy, 1992, p. 41). Though none of the previous literature on wage differentials focused on those at the very top of the income distribution, it is plausible that the same forces that generated the rising gap between, say, the wage rate at the 90th percentile, and the wage rate at the 10th percentile, also generated an increase in the earnings at the top percentile. Slemrod (1996a) investigated that possibility by estimating time-series regressions of the (adjusted) Feenberg-Poterba high-income shares of both AGI and the major components of income against measures of concurrent, lagged, and anticipated marginal tax-rate changes, a measure of wage-rate inequality between the 10th and 90th percentiles, and other variables that might affect the distribution of income sources. In the 1954 to 1985 period, the wage inequality variable explains much more of the changes in the high-income share of wages and salaries and, with less success, total income, than do the tax-rate variables. But when the sample is extended past TRA86 to 1990, a different story—suggesting that the tax changes are predominant—emerges, in part because between 1985 and 1990 the increase in wage-rate inequality stalled while the top tax rate plunged.

Because it is likely that TRA86 was the leading cause of the surge in the reported income of the affluent, a closer look at the components of this increase is warranted. Comparing cross-sectional tax return data for 1984 and 1990 for the top 0.5% of income earners reveals that three sources of income accounted for three-quarters of the total increase: about 40% came from wages and salaries, about 20% from so-called Subchapter S corporations, corporations which are taxed like partnerships, and 15% was income from partnerships themselves. Auten and Carroll (1995) report, using their panel data set, that of the total change in nominal AGI of their highest income group, only 29.1% was accounted for by the increase in wages and salaries. More than that was due to the combination of S corporation income, which by itself was 25.1% of the increase, and partnership income, which accounted for 12.1% of the increase. Strikingly, Auten

and Carroll report that the real wages and salaries of the highest in-come group increased by only 4.9% between 1985 and 1989, com-pared to 161.8% for income from S corporations, and 351.4% for income from partnerships. Because both the comparative cross-sectional and panel data indicate that the same three sources of in-come dominated the income gains of the high-income group over this period, they deserve further attention.

Because TRA86 reduced the top personal rate below the basic corporation tax rate, it made operating a business as an S corporation more attractive than before. The number of returns of C corpora-tions (subject to entity-level corporation tax), which had increased at an average rate of 3.5% in the two decades from 1965 to 1985, started to decrease after 1986, and fell by more than 450,000 from 1986 to 1990. More importantly, a decline in the income of small C corporations, for which S corporation status is feasible, offset much or all of the increase in S corporation *income* that appeared on indi-vidual returns. As Gordon and Slemrod (forthcoming) explain, it is plausible that a significant fraction of the increase in S corporation income, reported by high-income taxpayers over this period, was simply shifted out of the C corporation sector. More generally, the inversion of the top personal and corporate tax rates eliminated any incentive for the compensation of executives and other employees to be retained within the corporation. The availability and changing tax attractiveness of income shifting is probably a major part of the story behind the apparent large sensitivity of affluent Americans' taxable income.

Changes in labor supply and income shifting are not exhaustive of the possible components of the apparent responsiveness of tax-able income. Higher tax rates could also cause substitution into non-taxable or tax-preferred activities other than leisure, such as charitable contributions and fringe benefits, or could increase tax evasion; as Feldstein (1995b) noted, the welfare implications of these substitu-tion effects are similar to those of declines in labor supply. Although evidence exists that both charitable contributions and fringe benefits are tax responsive (see Auten, Clotfelter, and Schmalbeck (forthcoming), and Turner (1987), respectively), it is extremely un-likely that adjustments in either of these activities comprise a quanti-tatively significant portion of the observed changes in high-income individuals' taxable income around either TRA86 or the 1993 tax in-crease. The empirical evidence about the tax responsiveness of eva-

sion is much more mixed (see Slemrod and Yitzhaki (1997) for a summary). And recent evidence from the Internal Revenue Service's Taxpayer Compliance Measurement Program reveals no sign that TRA86's lower tax rates on the rich increased their rate of voluntary compliance; Christian (1994) reports that the voluntary compliance rate of non-business taxpayers with (audit-adjusted) incomes over $100,000 went from 95.3% in 1985 to 96.6% in 1988, not only a small change but one that is essentially the same as the change among income groups that were not subject to such a large drop in their marginal tax rates.

1.3 Policy implications

TRA86 inarguably produced striking responses from high-income taxpayers that resulted in higher, reported, individual taxable income. Although some of this probably represented real substitution response such as increased work effort (income *creation*), much of it represented income *shifting* from, for example, the corporate tax base to the individual tax base and from one year to another.[5] The policy implications of these two alternative, but not mutually exclusive, explanations are vastly different. The income creation view can make the efficiency cost of increasing the tax rates look higher if it ignores the offsetting revenue increases from shifting to other tax bases or other periods; it is the impact on the present value of all revenue sources that matters.

The debate about the salience of this qualification is ongoing. Feldstein (1997), who downplays the importance of income shifting, calculates the marginal excess burden per dollar of revenue to be $1.65, so that the total cost per incremental dollar of government spending is $2.65. In contrast, Goolsbee (forthcoming), who argues that much of the observed response is the result of retiming, opines that the appropriate marginal cost is more like $0.20 to $0.25 rather than $1.65. I think the latter is closer to the truth; in any event, the

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[5] This is consistent with the hierarchy of behavioral responses discussed by Slemrod (1992), in which the timing of transactions are the most responsive, financial and accounting responses are in the middle, and the real substitution responses are the least responsive. In this paper, I do not stress the impact of tax changes in the timing of taxable income events, but there is an ongoing controversy about the extent to which apparent shifts in taxable income in response to anticipated tax increases (decreases) can be explained by accelerated (postponed) realizations of taxable income. See Goolsbee (forthcoming) on this point.

key to pinning this parameter down is a better understanding of the nature of the observed behavioral responses.

2. Cross-country (top-down) evidence

While we await the research that clarifies this issue, we can look to another source of evidence—countries.[6] If the costs of a large, redistributive public sector are as high as Feldstein (1997) suggests, shouldn't that be evident when comparing the economic record compiled by Sweden, where 50% of GDP goes to taxes to that of the U.S., where a relatively small 30% goes to taxes? Although this (and any) pair of countries differ along so many dimensions that isolating the impact of taxes is difficult, surely one would think that such large variation in the size and activities of the public sector would be associated with noticeable differences in economic success, especially if its cost is so high.

The costly government argument is apparently strengthened by Sweden's recent economic troubles and the strong performance of the U.S. Alas, arguing by example is dangerous, as witnessed by the flat recent performance of Japan, a partner of the U.S. at the bottom of the OECD list in terms of government size, and the vigorous Norwegian economy, achieved while its government level is near the top of the OECD list. Yes, Norway has its oil and Japan had its speculative bubble burst, but then again every country has its own story. Hopefully, by examining the performance of many countries over many years, some clear patterns of association between the extent and nature of government involvement and economic performance will emerge.

Unfortunately, systematic studies of the relationship between the extent of government involvement and economic performance do not reveal any clear relationship, and certainly no negative one. Over all countries, the relative size of government and real GDP per capita have a clear *positive* relationship, and among OECD countries there is no correlation of either sign. Nor would any particular observed correlation reveal much about the question at hand, because the causation between government and prosperity runs in both directions. Richer people may desire more (as a fraction of income) of what government provides; even more likely, the social and economic characteristics associated with higher income—such as high literacy

[6] See Slemrod (1996b) from which most of this section is drawn.

rates, urbanization, wide use of standard accounting methods, political stability—may facilitate the levying of taxes. For example, Tanzi (1992) demonstrates that, in a cross-country regression analysis, the association of per capita income with the size of government disappears when the share of agricultural output in GDP is included as a separate factor in explaining the extent of government.

Prompted by both theoretical innovations and the frustration with the practical problems of explaining the *level* of prosperity across countries, there has recently been an explosion of cross-country studies of the determinants of growth *rates*. In the most influential of these, Barro (1991) examined a cross-section of 98 countries for the period 1960-1985. He found a significantly negative association of real growth over this period to a measure of the level of government expenditures (real, government-consumption purchases less spending on education and defense) averaged over 1970 to 1985. This result attracted much attention, but has not stood up well to the test of time (and other investigators); the robustness of this empirical result has since been successfully challenged by several researchers. Levine and Renelt (1992) examined whether Barro's conclusions are robust or fragile to small changes in the conditioning information set and conclude that the results are decidedly not robust and survive only when one selects a very particular conditioning set. Focusing on the OECD countries, Agell, Lindh, and Ohlsson (1997) found that simply adding to the estimating equation two demographic variables concerning dependency ratios (fraction of the population under 15, and the fraction over 64) is enough to turn a negative partial relationship between growth and the extent of government into a positive, albeit insignificant, one. Finally, Easterly and Rebelo (1993) found that any of several measures of fiscal policy are insignificant in Barro-style, growth-rate regressions. They ascribe this finding to the strong positive correlation between their fiscal variables and the initial (1960) per capita income level, which makes it difficult to disentangle the effects of fiscal variables from those of the initial level of income, the *convergence* effect discussed in Barro and Sala-i-Martin (1992). Easterly and Rebelo conclude that "the evidence that tax rates matter for growth is disturbingly fragile." (p. 442)

So the top-down evidence does not help to resolve the controversy left by the bottom-up studies. Further research may help to clarify the issue, but there will always be an intrinsic conceptual problem that plagues these studies: the kinds of demographic

changes that generally accompany income growth—literacy, urbanization, female labor force participation—also facilitate tax collection. So across countries (or across time, for that matter), higher-income countries will find tax collection cheaper, and by extension the price of public goods lower. If the size of the public sector is responsible via the political system to its cost, then cross-country analysis will detect a positive correlation between affluence and the public sector that blurs any negative causal effect (via the disincentives created) of a large public sector. Identifying and separating out this tax facilitation effect of economic development is, I believe, the most important methodological task confronting researchers in this field and a difficult one indeed.

3. Is a large public sector getting costlier?

Maybe not surprisingly, economists disagree about the cost of a large, redistributive public sector. But perhaps there is more agreement about a related question—whether the cost is getting larger as time passes. I have mentioned earlier that many of the demographic changes that accompany income growth also facilitate tax collection, making the cost lower. There are, though, important changes that may be pushing the cost upward, such as the growing scope of Internet commerce. But the most potentially important cost-increasing change is the increasing globalization of national economies. In this case, the prediction of public-finance economics is fairly clear: absent the ability of national or supernational governments to tax individuals on a worldwide basis, openness increases the cost of government, because it increases the elasticity of taxed activities. For example, capital has more alternatives than to locate within one's own borders, people have more opportunities to purchase goods outside their country of residence, and some firms and groups of people have increasing flexibility about what their country of residence is.

If countries react to the increasing cost of government that globalization causes, then governments should be shrinking. But this line of reasoning flies in the face of empirical studies that claim that across countries and across time within countries, greater openness has led to larger, not smaller, governments. Cameron (1978) first discovered this relationship and found that openness, measured as exports and imports of goods and services as a percent of GDP in 1960, was the best single predictor of the growth of public revenues relative to output from 1960 to 1970 for 18 OECD nations. Rodrik

(1997) has updated this finding, with a 100-plus country sample, establishing a strong and robust association between an economy's exposure to trade and the size of its government in both cross-sectional and longitudinal settings. Myrdal (1960, p. 702) predicted this and argued that "all states have felt compelled to undertake new radical intervention" in response to more chaotic economic relations following openness. And Lindbeck (1975, p. 56) observed that overt social-insurance and tax systems represent built-in stabilizers that maintain full employment despite the uncertainties of demand inherent in an open economy.

Myrdal, Lindbeck, and Rodrik stress how openness increases demand for social-insurance and macroeconomic stability that government can provide. For developed countries, there is another consideration: exposure to the markets of unskilled-labor-rich countries is bound to increase their dispersion in pre-tax earnings. Labor and international trade economists very much dispute the magnitude of this effect. But it is certainly one factor in the recent increasing inequality in the U.S. and other countries and will almost certainly become an even larger factor in the future.

According to the standard theory of optimal progressivity, a more disperse wage distribution should increase the amount of redistribution because it increases the weight placed on the equity gain from redistribution relative to the efficiency losses. But nearly two decades of increasing inequality has not, at least in the U.S., been accompanied by more progressive tax-and-transfer systems. Peltzman (1980) foresaw that the political mechanism might produce this reaction to increased earnings dispersion; Lindert (1996) explains this *Robin Hood paradox* as occurring because greater inequality between lower and middle-income classes means less commonality of identity, which weakens the inclination of middle-class voters to redistribute toward lower-income families.

The Peltzman-Lindert argument aside, we are faced with the fascinating prospect that in developed countries, both the cost and benefits of at least some kinds of government involvement will increase. In Economics 101 language, both the supply and demand curves will shift upward. This implies that the change in government size is indeterminate, but the price, which in this case is the marginal cost of government involvement, will certainly increase. Some of this cost increase will occur because tax revenues are more difficult to raise in a world of mobile tax bases, but some of it will be because

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citizens are more willing to tolerate a costly public sector in a world that is vulnerable to economic forces that generate uncertainty and inequality.

4. Conclusion

Because taxation causes individuals to rearrange their affairs, it exacts a burden to society above the dollars collected. How large that *excess burden* is depends on how sensitive individuals' behavior is to changes in effective marginal tax rates. Evidence from the recent U.S. tax changes suggests that, although labor supply is not highly sensitive to tax changes, overall taxable income of affluent families is. This implies that some aspects of the behavior of some individuals are responding to taxation, even if labor supply is not. The live controversy is about the nature of this taxable income responsiveness. If it is largely shifting of income across tax bases and time periods, then the implied excess burden is not nearly as large as if these responses are substantially real substitution responses. To date, cross-country comparisons have not been helpful in clarifying the key questions, because of the difficulties of controlling for intrinsic differences across countries and of separating the impact of taxes on economic performance from the impact of prosperity on the facility of raising taxes, and because it is impossible at the country level of aggregation to address the subtle issues of income shifting versus income creation.

The polar estimates of the marginal welfare cost of raising tax revenue are almost certainly not correct. It is not negligible, nor is it $2.50 per $1 raised; it certainly is higher in an economy where half of GDP goes to the public sector than in an economy where the public share is one-third. The recent emphasis on the source of the behavioral response suggests that policy attention should focus not only on the level of taxes raised, but also on the manner in which it is raised. Tax systems based on an inconsistent definition of the tax base will create more opportunities in the form of retiming and income shifting and will raise the cost of a public sector. There will be a reward to a clean tax base that exceeds what one might estimate based on the real substitution elasticities across taxed and tax-preferred activities.

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