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Progressive Taxation and the Incentive Problem

by

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Progressive Taxation and the Incentive Problem

by

Robert H. Frank[1]

"All taxes are a drag on economic growth. It's only a question of degree."
Fed Chairman Alan Greenspan, as quoted in the *Wall Street Journal*, March 26, 1997

The setting of personal tax rates is widely believed to confront policy makers with an agonizing tradeoff between equity and efficiency. Most liberals, and even many conservatives, believe that a more progressive tax structure would be desirable on equity grounds. Yet most liberals and conservatives also believe that greater progressivity would entail significant penalties to economic growth.

In the US and the UK, concerns about efficiency appear to have trumped concerns about equity. Strongly influenced by supply-side rhetoric, legislators in both countries voted to cut top marginal tax rates sharply in the 1980s, and despite slight upward revisions in the US in the 1990s, these rates remain the lowest among industrialized nations.

For convenience, I will refer to the notion that the goals of tax equity and economic growth are in conflict as the fundamental premise of supply-side economics. My aim in this paper is to question this premise. Two simple departures from the conventional neoclassical model comprise the basis of my critique: First, that the rewards in many of the labor markets in which top earners toil depend more on relative performance than on absolute performance; and second, that a person's utility depends not only on absolute but also on relative consumption. There is a solid evidentiary basis for both

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[1] Goldwin Smith Professor of Economics, Cornell University. This essay is based in part on material from my forthcoming book on conspicuous consumption.

modifications. Using conventional neoclassical models modified in these ways, I will suggest that greater tax progressivity may enhance rather than reduce economic efficiency. But before turning to these issues, let us briefly review the arguments and evidence that have been offered in support of the fundamental supply-side premise.

The Basis for the Conventional Wisdom

The that tax equity comes at the expense of efficiency is predicated on the time-honored belief that people respond to incentives. Thus, say the supply-siders, when the rewards for effort and risk taking are reduced by the imposition of higher top marginal tax rates, people will expend less effort and take fewer risks. In the standard supply rhetorical flourish, the problem with steeply progressive taxes is that they kill the geese that lay the golden eggs. Or, as Benjamin Higgins put it, "the rate of development is reduced, possibly to the point where even the very level of welfare of the underdog, which the equity measures are designed to help, is lowered instead."[2]

The supply-siders are surely right that incentives matter. When the price of gasoline doubled in the late 1970s, for example, the proportion of cars sold with fuel-efficient four-cylinder engines rose sharply, with corresponding declines in the proportions sold with six- and eight-cylinder engines. By the same token, when the price trajectory of gasoline reversed itself in the ensuing years, falling sharply relative to the price trajectories for other goods, the market for cars with larger engines began a robust comeback. We may not be perfect rational maximizers, but most of us know enough to rearrange our spending patterns when relative prices move sharply.

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[2]Higgins, 1992, p. 38.

Yet the fact that we respond to incentives in a self-interested way does not, by itself, imply that higher tax rates at the top will cause a slowdown in economic growth. It is true that an increase in the tax rates facing top earners means a reduction in the economic rewards for taking risks and expending effort, just as the supply-siders insist. As every basic economics textbook makes clear, however, a fall in the after-tax wage rate simply does not lead to an unambiguous prediction about the quantity of effort supplied. Thus, whereas the substitution effect of a lower real wage is a reduction in effort, the income effect pulls in the opposite direction. Economic theory is completely silent on the question of which of these two opposing effects will dominate. The case for the conventional position must therefore be made on empirical grounds.

There are a number of episodes that appear, at least superficially, to support the supply-siders' central premise. Perhaps the most vivid of these consist of responses to changes in state and local income tax rates. For example, conservatives in New York have warned since the 1950s that rising personal and corporate tax rates would prove costly to the state's economic vitality, and by most criteria these warnings have been remarkably on target. Thus, as one corporation after another has moved its headquarters from New York to some other jurisdiction with lower tax rates, the state's per capita income has continued a pattern of long decline in relative terms. At the same time, Southern states with low tax rates have enjoyed a sustained economic boom. At the local and even state levels, at any rate, the fundamental premise of supply-side economics appears largely confirmed. Higher tax rates seem to translate into lower rates of economic growth. And this, we may suspect, is an important reason for the widespread support that the fundamental premise of supply-side economics currently enjoys.

Yet the observed responses to state and local tax changes tell us only that people are willing to substitute one location for another in response to tax incentives. They tell us nothing about their willingness to substitute leisure for effort, or about their reluctance to take risks for economic gain. If the top tax rates were increased significantly in *every* jurisdiction, would people work less, or would they be less willing to risk their capital? Or more important, in view of the reduction in barriers to labor mobility across national borders, would top earners in a given country either flee or work less in response to an increase in their nation's highest tax rates?

For sufficiently high tax rates, the answer to even this question appears to be yes, at least if the early experience of countries like England and Sweden is any guide. With marginal tax rates above 90 percent in the 1960s, both countries experienced costly outmigrations of talent.

Yet international labor flight is probably not an important constraint at the moment in the US and the UK, both of which now have top marginal tax rates of roughly 40 percent-- far lower than those in other industrial nations. For these countries, the important question for policy makers considering higher marginal tax rates is not whether top earners will flee, but whether their domestic economic decisions will be significantly distorted.

The case for such distortions is difficult to make on empirical grounds. If the net effect of a real wage reduction were to induce most people to supply significantly less labor, then the opposite should be true in the case of a real wage increase. Thus the cumulative effect of the last century's dramatic rise in real wages should have been a significant increase in hours worked. In fact, however, the length of the workweek is significantly lower now than in 1900.[3]

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[3] See Ehrenberg and Smith, 1994, p. 33.

What is more, the downward trend in hours worked leveled out shortly after World War II in the US, and has actually turned slightly upwards over the last two decades. This observation also casts doubt on the fundamental premise of supply-side economics, for the after-tax wage of the median earner has declined slightly during the last 20 years-- which, according to supply-siders, ought to have caused a reduction in work hours instead of an increase. By many accounts, the recent increase in hours worked is an attempt to recoup the loss of purchasing power that stems from lower wage rates.

Although cross-country comparisons are inherently difficult to interpret, on balance we would also expect to see more effort supplied in countries with higher real after-tax wage rates if the fundamental premise of supply-side economics were correct. Yet here, too, the numbers tell a different story. For example, even though Japanese CEOs earn less than one-fifth as much as their US counterparts and face substantially higher marginal tax rates, there is no evidence that Japanese executives log shorter workweeks.

I stress again that none of these observations is inconsistent with the claim that people respond to incentives. They do not rule out the possibility that people may work less if the top tax rate rises beyond some point. Nor do they contradict the claim that some people may go on welfare if they can earn more than by going to work. But taken as a whole, the empirical evidence is consistent with the claim that increases in the top US and UK marginal tax rates would not cause wholesale reductions in effort.[4]

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[4] A number of studies draw essentially this inference from experience in the wake of the US tax reform legislation enacted in 1986. See, especially, Auerbach and Slemrod, 1997; and Slemrod, 1990.

Tax Avoidance and Tax Evasion

Another claim by supply-siders is that high marginal tax rates compromise economic efficiency by channeling talent and effort into tax avoidance and tax evasion rather than productive work. Several writers saw evidence for this claim in the fact that the reduction in top US tax rates that was enacted in 1986 was followed by a large increase in the amount of income declared by top earners.[5]

No one can deny that the payoff from a dollar invested in tax avoidance is higher when tax rates are high than when they are low. But the Tax Reform Act of 1986 not only cut top tax rates, it also broadened the tax base significantly by eliminating a large number of deductions and exemptions. If a rational tax avoider knows about the existence of a legal deduction or exemption, he will almost surely claim it whether his tax rate is 40 percent or 60 percent. He may spend a little more effort searching out exemptions when the tax rate is higher. But most taxpayers in top brackets already employ professional tax consultants, and these consultants would be unlikely to advise differently about specific deductions if marginal tax rates were to increase. The post-1986 increase in reported income appears more plausibly explained by the fact that the act eliminated many existing loopholes.

Another potential efficiency loss is that higher tax rates also provide greater incentives for corporations to compensate executives with expensive perks. For instance, when top British marginal tax rates were higher than 90 percent, it was apparently not uncommon for companies to provide top executives with chauffeur-driven Rolls Royces. For each executive, this perk might cost the company $50,000 per year, an amount the executive would

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[5] See, for example, Feldstein, 1995.

never see fit to spend on himself. But since the after-tax value of an extra $50,000 in pay would have been less than $5000 for the executive, a company-provided Rolls might nonetheless have loomed as an attractive option.

Tax evasion is a serious problem. Yet in-kind compensation and other similar behaviors must be monitored and controlled even with tax rates at their current, relatively low levels. More important, tax evasion of every sort would be sharply reduced if we taxed consumption rather than income. Rather than spend $50,000 to provide an executive with a chauffeur-driven Rolls, it could then give her an extra $50,000 in cash, 100 percent of which she could shelter by simply putting it into a mutual fund. By allowing people to shelter their savings completely from taxation, we would thus eliminate much of the incentive to engage in tax evasion. Indeed, we have every reason to expect that tax evasion would be a less serious problem under a steeply progressive consumption tax than under today's only moderately progressive income tax. (More on the advantages of consumption taxation below.)

Growth and Inequality Across Nations

A growing empirical literature casts further doubt on the presumed tradeoff between equity and efficiency. Several studies, for example, have found a negative correlation between various measures of income inequality and economic growth in cross-national data. Using World Bank and OECD data for a sample of industrial nations, Andrew Glyn and David Miliband examined the relationship between income inequality (as measured by the ratio of the income of the top 20 percent to the income of the bottom 20 percent for each country in 1980) and economic growth (as measured by the

annual percentage growth rate in labor productivity between 1979 and 1990).[6] Their findings, which are shown in Figure 1, reveal a sharply negative association between income inequality and growth thus measured.

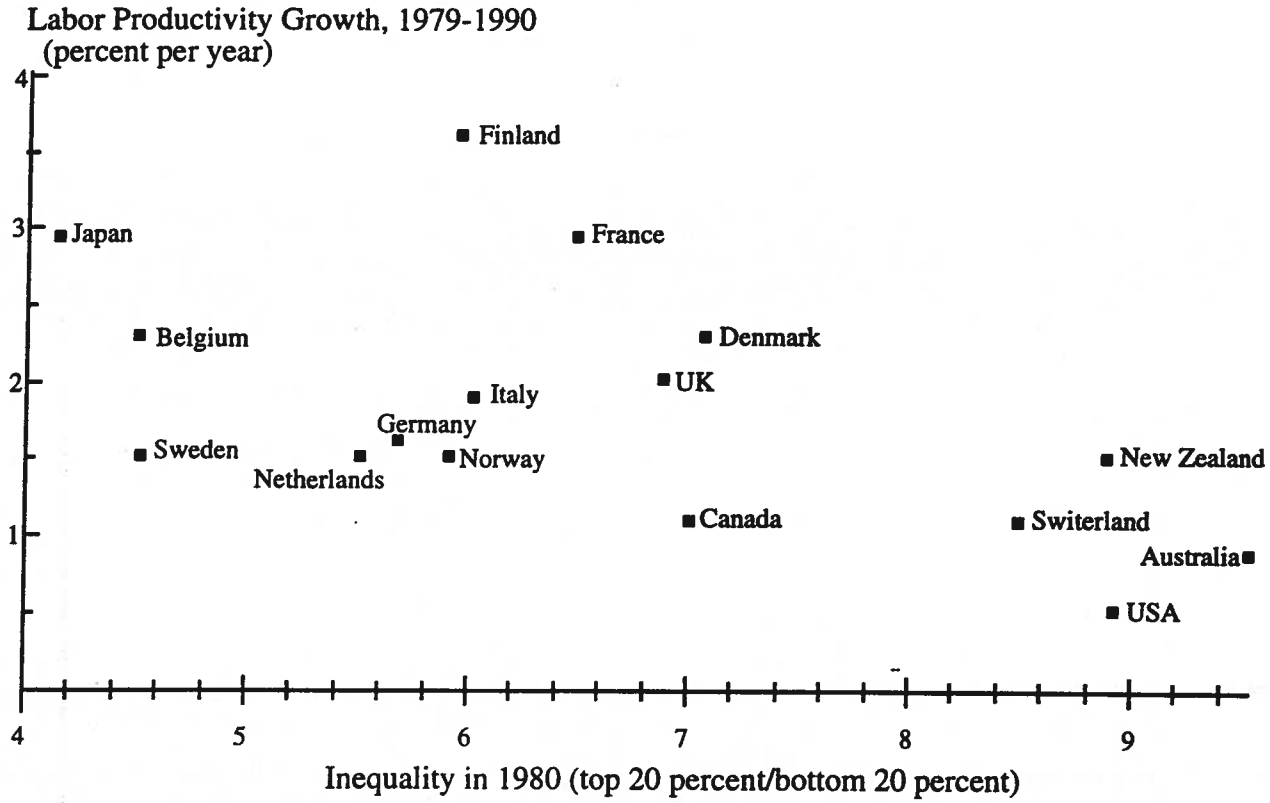

Figure 1. Growth vs. Inequality in Cross-National Data
Source: Glyn and Miliband, 1994, p. 3.

In another study, Alberto Alesina and D. Roderick found that national income growth rates in 65 countries were negatively related to the share of national income going to the top 5 per cent and top 20 percent of earners; and that, by contrast, larger shares for poor and middle income groups were associated with higher rates of growth.[7] Essentially the same pattern has been confirmed in several other independent studies.[8]

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[6]Glyn and Miliband, 1994.

[7]Alesina and Rodrick, 1992.

[8]Garrison and Lee, 1992; and Persson and Tabellini, 1992.

Of course, the mere fact that inequality and growth are negatively correlated in cross-national data does not imply that greater inequality is necessarily a cause of slower growth. A multitude of other factors that affect growth rates differ sharply across nations, and if some of the most important of these are positively correlated with income inequality, that might explain the pattern. One way to check for this possibility is to see whether the negative relationship between inequality and growth holds up when we examine these two variables within countries over time.

Growth and Inequality Over Time

Several recent studies have found that the correlation over time between inequality and economic growth is also negative. For example, as Don Corry and Andrew Glyn note in their recent survey, the post-war experience in most industrial countries may be partitioned neatly into two periods for the purpose of describing variations in economic growth and income inequality.[9] The first, from roughly the end of World War II until about 1973, has been called the golden age of economic growth. National income growth during that period averaged 5 percent and more in many developed countries. By contrast, the growth rates of national income in the OECD countries have been only about half as large during the post-1973 period. Corry and Glyn also note that, by virtually any measure, income inequality during the golden age was low by historical standards, and in most countries falling throughout the period. They go on to point out that the degree of income inequality in most countries has risen significantly since 1974, although the change began at different times in different countries. As

[9]Corry and Glyn, 1994.

in the cross-national data, higher growth rates are associated not with higher income inequality, as predicted by supply-siders, but with lower inequality.

Here again, however, the observed negative correlation does not necessarily imply that growing inequality is the cause of slower growth. As before, it could be that other factors positively correlated with inequality are the real causal agents. Yet it seems most unlikely that the same unobserved causal agents that might have explained the pattern in cross-national data could also have been at work in the time-series data. It *could* have happened that way. But now we need two coincidences, not just one, to get inequality off the causal hook.

On balance, it thus appears that the supply-sider's case for the agonizing tradeoff between equity and economic growth is far from compelling. There was never any solid theoretical support for the existence of this tradeoff, and the empirical evidence, such as it is, would never change a skeptic's mind.

Occupational Choice: A More Important Margin?

Perhaps conventional labor supply measures-- typically, the number of hours worked during the year-- simply cannot capture the richness of the supply sider's economic vision. Thus we might consider a world in which most people work more or less full time, independently of tax rates, and yet still imagine circumstances in which taxes might introduce important distortions. For example, suppose we assume, plausibly, that the most important labor supply decision is not how many hours to work but which occupation to pursue. And suppose further, again plausibly, that in some occupations the work is stressful and difficult but pays well, while in others it is less stressful but also pays less well. Supply siders might then argue the

effect of higher marginal tax rates will be to divert people from the first occupation to the second, and that the resulting decline in income will be an efficiency loss properly attributable to the higher tax rates.

Fine so far. But now let us explore a variation on this basic story. This time, suppose we divide occupations not according to how stressful their tasks are but according to the extent to which additional talent translates into additional productivity.[10] For concreteness, imagine a world in which there are only two occupations, production workers and singers. The market for production workers can absorb indefinitely many workers at a constant wage of w that is independent of talent. The market for singers, by contrast, requires only a single individual to record a compact disc that will be sold in the world market. Talent, which is unobservable ex ante, is revealed in a contest for the recording contract. To enter this contest, one must forfeit the opportunity to be a production worker. As the number of people who enter this contest grows, the higher, on average, will be the quality of the winning singer's voice. The wage of a contestant in the singing market is V>w if she wins the contract, and zero otherwise. V is assumed an increasing, concave function of N_1, the number of people who compete for the recording contract.

Since talent is unobservable ex ante, potential contestants for the recording contract think of themselves ex ante as being equally likely to win it. If the worker's utility is equal to his wage, the equilibrium allocation of labor across occupations must satisfy

$$(1/N_1)V(N_1) = w, \qquad (1)$$

[10] For a much more detailed exposition of the model to follow, see Frank and Cook, 1993.

and the result is that the expected utility of workers in each occupation will be equal to $\bar{w}$ in equilibrium. In brief, we have a standard tragedy of the commons. All potential rent from the recording market is squandered in the competition to see who lands the recording contract.

On the assumption that V measures not just the winning singer's pay, but also the social value of the recording she produces, we can calculate the optimal allocation of labor across the two occupations. To find this allocation, we first write

$$GNP = V(N_1) + (N-N_1)w\ , \tag{2}$$

and then solve

$$dGNP/dN_1 = V'(N_1) - w = 0 \tag{3}$$

for N_1.[11] Thus, at the socially optimal value of N_1, denoted N_1^{**}, the slope of V is equal to w.

For purposes of comparison, note from the private equilibrium condition (equation 1) that the slope of the ray to $V(N_1)$ at the private equilibrium, N_1^*, is given by

$$V(N_1^*)/N_1^* = w\ . \tag{4}$$

The conditions that define the socially optimal and private equilibrium values of N_1 are compared graphically in Figure 2.

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[11]Concavity of V(K) assures that equation 11 is also a sufficient condition for maximum GNP.

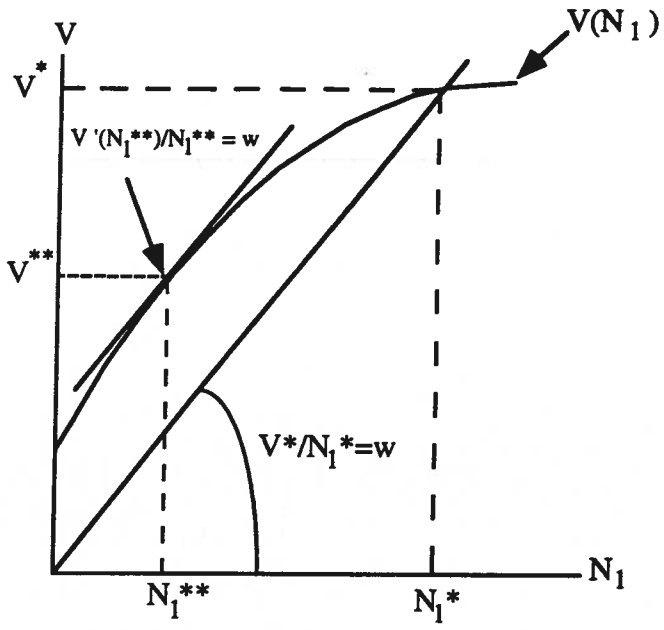

Figure 2. The Private Equilibrium and Socially Optimal Allocations to the Winner-Take-All Sector

Note in Figure 2 that the payment to the winning contestant is higher under the private equilibrium allocation (V^*) than under the socially optimal allocation (V^{**}), reflecting the fact that the quality of the top-ranked singer--and hence the value of his or her services to the buying public-- rises when more people compete for the recording contract. The fact that GNP is higher at N_1^{**} than at N_1^*, however, implies that the private equilibrium quality of music is "too high" from a social welfare perspective.

Now suppose the government taxes the earnings of the winning singer at the rate of t, and distributes the resulting tax collections in equal lump-sum amounts to all workers. Labor market equilibrium now obtains when

$$w = (1-t)V(N_1)/N_1. \qquad (5)$$

The optimal tax rate t^* is the one for which

$$w = (1-t^*)V(N_1^{**})/N_1^{**}, \quad (6)$$

which yields

$$t^* = 1 - w\, N_1^{**}/V(N_1^{**}), \quad (7)$$

where N_1^{**} is again the socially optimal number of contestants for the recording contract, as defined by equation 3. This tax rate maximizes GNP and also each worker's ex ante expected utility. In this model, the effect of a progressive tax is thus to increase efficiency rather than reduce it.

The model just discussed does not assume that individuals care about rank per se. The payoff to rank is strictly a result of a nonconvexity in technology. A progressive tax improves efficiency in this model because it curbs overcrowding in the market in which reward depends on rank.

In our recent book, Philip Cook and I have argued that winner-take-all payoff structures, long prevalent in entertainment, sports, and the arts, have increasingly permeated law, journalism, consulting, medicine, investment banking, corporate management, publishing, design, fashion, and a host of other high-wage labor markets.[12] Indeed, it is fair to say that virtually all top-decile earners in the US are participants in labor markets in which rewards depend heavily on relative performance. In view of the growing prevalence of such labor markets, it is hardly fanciful to suppose that progressive taxes may dominate flat taxes on both equity *and* efficiency grounds.

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[12] Frank and Cook, 1995.

The Importance of Relative Consumption

Standard models of the labor-leisure choice assume the individual derives utility from the consumption of goods and of leisure. In models in which the substitution effect dominates the income effect, taxes on income lead the individual to supply less labor than would be socially optimal-- and hence, in part, the presumed tradeoff between equity and efficiency.

The picture changes significantly if utility depends not just on leisure and absolute consumption but also on relative consumption.[13] Suppose, for example, that the i^{th} individual's utility is given by

$$U_i = U_i[C_i, L_i, R(C_i)], \tag{8}$$

where C_i denotes this individual's consumption of goods, L_i his consumption of leisure, and $R(C_i)$ is his rank in the consumption distribution, $0 \leq R(C_i) \leq 1$. If f(C) is the density function for the observed values of consumption in the population, then $R(C_i) = \int_{C_0}^{C_i} f(C)dc$, where C_0 is the consumption expenditure of the population member who consumes least. Let w be the wage rate and 1 be the price of consumption goods, and suppose for simplicity that individuals have only wage income. If individuals take f(C) as given, the first-order condition for maximum utility is given by

$$U_{i1}/U_{i2} + (U_{i3}/U_{i2})f(C_i) = 1/w, \tag{9}$$

where U_{ij} denotes the first partial derivative of U_i with respect to its jth argument.

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[13] The model discussed in this section is more fully elaborated in Frank, 1985a.

The expression $(U_{i3}/U_{i2})f(C_i)$ on the left-hand side of equation 9 reflects the fact that when an individual sacrifices an additional hour of leisure his payoff is not just the additional w units of consumption goods he can buy but also the fact that he moves forward in the consumption ranking. But other individuals also perceive this second reward from selling leisure, and when all respond to it, the resulting consumption ranking remains unchanged. In the end, consumers end up selling more than the socially optimal quantity of leisure. Thus suppose consumers could agree collectively to ignore the effect of selling leisure on their consumption rank-- that is, suppose they could agree to assume that $U_{i3}=0$. The first-order condition would then simplify to

$$U_{i1}/U_{i2} = 1/w, \qquad (10)$$

and the amount of leisure individuals choose to sell would decline. The solution to equation (10), not that to equation (9), defines the socially optimal allocation.

In this model, the effect of a tax on wages is, as in conventional models, to lower the reward for selling leisure. But whereas in conventional models this introduces a distortion, in this model it mitigates an existing distortion. Here again, a plausible modification of the conventional model suggests that progressive taxation may enhance efficiency rather than reduce it.

Choosing Between the Two Models

The case for the agonizing tradeoff between equity and efficiency is weak. This tradeoff is not predicted on theoretical grounds, even in conventional models, nor does its existence appear to enjoy any significant empirical support. What is more, if we modify conventional models to

incorporate the dependence of important individual payoffs on rank, these models imply that efficiency may actually *require* more equitable tax rates.

These observations notwithstanding, it seems fair to say that most policy makers continue to believe that the goals of equity and efficiency are squarely in conflict. People with such beliefs will obviously tend to favor different tax policies than will those who believe these goals are complementary. With influential congressional leaders poised to introduce flat tax proposals with extremely low tax rates, the issues involved in the current tax debate are important. How is a neutral observer to choose between the competing views? On what evidence, for example, might one decide whether interpersonal comparisons loom large in the utility function?

In a recent paper, Neumark and Postlewaite approach this question by examining how individual labor supply decisions depend on the incomes of important reference group members.[14] The difficulty in such efforts has always been that it is hard to know which others a person includes in her reference group. Neumark and Postlewaite solve this problem by examining the behavior of sisters. Does a woman's decision about whether to work outside the home depend on her sister's economic circumstances? In conventional models it would not, but Neumark and Postlewaite find differently for a sample of women whose sisters are not employed. Specifically, they find that a woman is 16-25 percent more likely to work outside the home if her sister's husband earns more than her own husband.[15]

Some of the most striking evidence concerning interdependencies in demands comes from markets for collectible items. Koford and Tshoegl, for example, show that the prices of rare coins often dramatically higher than

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[14] Neumark and Postlewaite, 1996.

[15] Ibid, Table 3.

prices for otherwise identical coins that were minted in large quantities.[16] Zahavi reports that the Franklin Mint, a private issuer of collectibles, had over 3 million active customers and sales of more than $600 million in 1992.[17] Exclusivity also appears to help explain why the Ferrari 456 GT sells for twice the price of the Porsche 911 Turbo, even though the Porsche is faster, handles better, and is more reliable.

In my 1985 book *Choosing the Right Pond*, I described additional behavioral evidence consistent with the view that positional concerns have significant weight in economic decisions. There I showed that the wage distributions within firms are typically much more compressed than we would expect if workers did not care about relative income.[18] Likewise, the incidence of piece-rate pay schemes is much lower, and the frequency with which workers go on strike is much higher, than we would expect if relative income did not matter. In addition, the observed structural differences between the compensation packages of unionized firms and nonunionized firms are difficult to explain without reference to collective action problems that arise from concerns about status.[19]

Sheryl Ball and her co-authors have shown that even simple laboratory manipulations of status can have profound implications for the terms of market exchange.[20] In one experiment, for example, they awarded half of their subjects "stars" on the basis of their performance on a transparently meaningless quiz. These subjects consistently received better terms when they exchanged goods with subjects who did not receive stars.

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16 Koford and Tshoegl, 1996.
17 Zahavi, 1995.
18 Frank, 1985b, chapter 4.
19 Frank, 1985b, chapter 8.
20 Ball, et al., 1996.

Another important source of relevant evidence on the nature of the utility function is found in the burgeoning psychology literature on the factors that explain variations in subjective well-being. For present purposes, subjective well-being is the psychologist's term for what economists call utility. But whereas the economist's strategy is to try to infer the determinants of utility from patterns of choice, the psychologist tries to measure subjective well-being directly.

By far the most popular approach has been simply to ask people how satisfied they are.[21] For example, people may be asked to respond on a numerical scale to a question like, "All things considered, how satisfied are you with your life as a whole these days?" Another approach measures the frequency and intensity of positive affect by asking people the extent to which they agree with such statements as: "When good things happen to me, it strongly affects me." "I will often do things for no other reason than that they might be fun." "When I get something I want, I feel excited and energized." "When I'm doing well at something, I love to keep at it." And so on.[22]

More recently, neuroscientists have also used brainwave data to assess positive and negative affect. Subjects with relatively greater electrical activity in the left prefrontal region of the brain are likely to indicate strong agreement with statements like the ones above, while those with relatively greater electrical activity in the right prefrontal region are much more likely to disagree with these statements.[23] The left prefrontal region of the brain is rich in receptors for the neurotransmitter dopamine, higher concentrations of which been shown independently to be correlated with positive affect.[24]

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[21] See Easterlin, 1974, for a discussion.
[22] Reported by Goleman, 1996.
[23] Davidson, 1992.
[24] Reported by Goleman, 1996.

Satisfaction as identified by any of these measures is predictive of a variety of observable behaviors that most of us take to be indicative of well-being. For example, people who describe themselves as highly satisfied, or who have relatively high levels of electrical activity in the left prefrontal region, are: more likely to be rated as content by friends; more likely to initiate social contacts with friends; more likely to respond to requests for help; less likely to suffer from psychosomatic illnesses; less likely to be absent from work; less likely to be involved in disputes at work; less likely to die prematurely; less likely to attempt suicide; and less likely to seek psychological counseling.[25] In short, it seems that what the psychologists call subjective well-being is a real phenomenon. Empirical measures of it have high consistency, reliability, and validity.[26]

Richard Easterlin was the first to call economists' attention to survey data that illuminate the relationship between material living standards and subjective well-being.[27] Easterlin saw three significant patterns in the self-reported happiness data. First, he noted that ssatisfaction levels across individuals within a given country vary directly with income-- richer people, on the average, are more satisfied than their poorer countrymen. This relationship is illustrated in Figure 3, which plots average satisfaction against annual income for a US sample of 4942 persons surveyed between 1981 and 1984.

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[25] For surveys of this evidence, see Frank, 1985a, chapter 2; and Clark and Oswald, 1996.

[26] Diener and Lucas, 1996.

[27] See Easterlin, 1974. Easterlin, 1996, updates his earlier study.

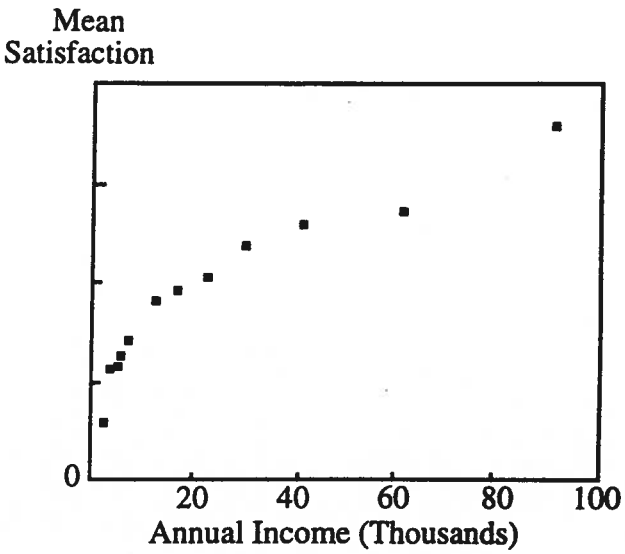

Figure 3. Income vs Satisfaction in the US, 1981-4.
Source: Diener, Sandvik, Seidlitz, and Diener, 1993.

Second, Easterlin noted that the average happiness levels within a given country tend to be highly stable over time, even in the face of significant economic growth. Figure 4, for example, plots the percentage of Americans surveyed who respond "very happy" when asked, "Taken all together, how would you say things are these days-- would you say that you are very happy, pretty happy, or not too happy?" Figure 5, which plots mean subjective well-being over time for Japan, tells a similar story.

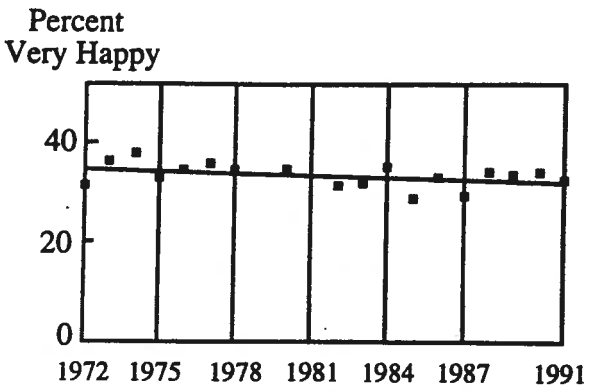

Figure 4. Percent Very Happy, United States, 1972-1991.
Source: National Opinion Research Center, 1991.

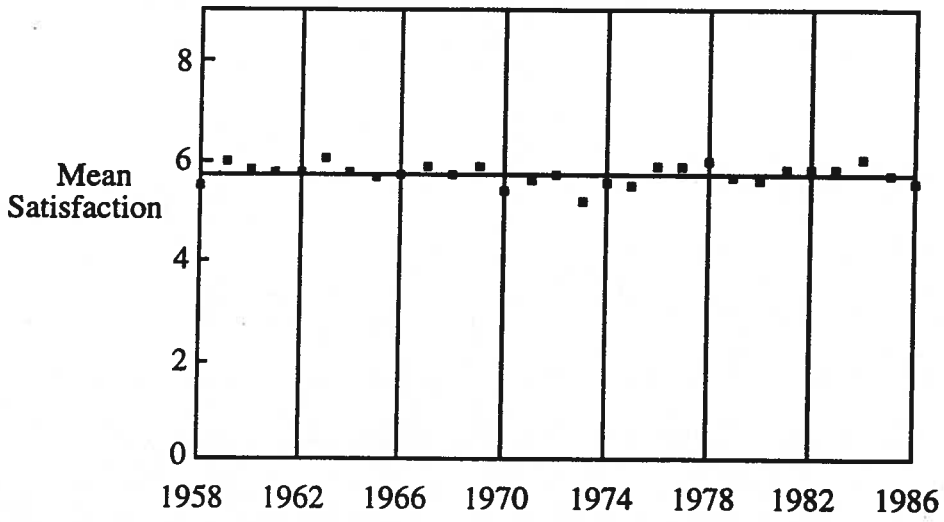

Figure 5. Mean Subjective Well-Being, Japan, 1958-1987.
Source: Veenhoven, 1993.

And finally, Easterlin noted that average happiness levels across countries are not strongly correlated with average levels of GNP.

Easterlin argued that these patterns are consistent with the hypothesis that relative income is far more important than absolute income as a determinant of individual happiness levels. His pessimistic conclusion was that economic growth does not improve the human condition, since no

matter how prosperous a society becomes in absolute terms, the frequency with which people experience relative deprivation will not be much affected.

Subsequent work suggests that Easterlin was perhaps too pessimistic. For example, most careful studies find a clear relationship between subjective well-being and absolute income at extremely low levels of absolute income. Thus, in a country in which most people lack minimally adequate shelter and nutrition, across-the-board increases in income appear, not surprisingly, to yield significant and lasting improvements in subjective well-being.[28] In the same vein, it now appears that average satisfaction levels are in fact significantly lower in extremely poor countries than in rich ones.[29] But it still does not appear that average satisfaction levels within a country are significantly correlated over time with income.

This is not to say that having additional economic resources *could* not lead to greater well-being. On the contrary, the literature identifies many forms of consumption that contribute in significant and lasting ways to human well-being. For example, it appears that most people would be more satisfied with their lives if the resources that are currently used to build bigger houses and more expensive cars were instead used to support more convenient public transportation and a cleaner, safer environment. The evidence also suggests that people would be more satisfied if they had fewer goods but more time to spend with family and friends or more time for exercise.[30] That these are not the choices people actually make can be understood as the result of the collective action problems that arise when payoffs depend upon rank.

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[28] Diener and Suh, 1996.

[29] Argyle, 1996.

[30] See Frank, 1997, for a summary of this evidence.

Income Taxes vs. Consumption Taxes

Interpersonal comparisons are not likely to apply with equal force with respect to all categories of consumption. For example, we may expect such comparisons to be more important, on average, for goods that are readily observed than for goods that are not readily observed. Expenditures on cars and houses will thus tend to generate stronger consumption externalities than will money deposited in savings accounts. This suggests yet another reason to favor consumption taxation over our present system of income taxation.

Many of the current consumption tax proposals call for a flat tax rate irrespective of the how much a family consumes. But these proposals can be easily modified to incorporate marginal rates that rise with total consumption. For example, taxable consumption could be defined as the difference between taxable income and current savings, with rates then rising as this difference grows.[31]

As Feldstein and others have argued, steeply progressive rates applied to income may lead to inefficiency to the extent that they create incentives for payments in kind and other forms of tax avoidance. But if savings are fully tax deductible, the individual's incentive to engage in such behavior is sharply reduced.

Are Positional Externalities a Legitimate Concern of Tax Policy?

Most economists accept the proposition that market allocations may be suboptimal when production is accompanied by the discharge of

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[31] For an excellent discussion of the issues posed by a progressive consumption tax defined in this way, see Seidman, 1997.

environmental pollutants. Most tend also to be enthusiastic in their embrace of effluent taxes as a solution to the problem of environmental pollution.

The dependence of utility on relative performance and relative consumption gives rise to what I have elsewhere called positional externalities.[32] Analytically, these externalities are no different from ordinary environmental pollutants. My proposal to tax consumption is thus precisely analogous to an effluent tax.[33]

Many economists may accept the existence of positional externalities as a purely descriptive matter.[34] Yet these same economists will often question whether such externalities proper targets for public policy intervention. On its face, this is a curious position for the profession that has always insisted that "a taste for poetry is no better than a taste for pushpins."

Of course, it is one thing to say that a person's tastes are her own business, and quite another to say that A's discomfort from B's consumption constitutes grounds for restricting B's consumption. As parents most of us try to teach our children not to worry about what others consume, and perhaps this is the best posture for the state to assume as well. And yet many forms of consumption cause not only injured feelings in others but also more tangible economic losses.[35] The job seeker gains a leg up on his rivals, for example, by showing up for his interview in a custom-tailored suit. The best response for others may be to show up in custom-tailored suits as well. Yet all job seekers

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[32] Frank 1992.

[33] Many others have suggested taxes to mitigate the externalities that arise from the dependence of utility on relative income or relative consumption. See, for example, Boskin and Sheshinski, 1978; Layard, 1980; Ng, 1987; Oswald, 1983; Haavelmo, 1971; Kosicki, 1987; Seidman, 1987; Ireland, 1994; and Ireland , 1997.

[34] There is indeed an extensive literature in which economists have discussed the dependence of satisfaction on relative living standards. In addition to the authors previously cited, see Kapteyn et al., van Praag, 1993; Easterlin, 1974, 1996; Sen 1983, 1987; Hirsch, 1976; Robson, 1992; and Scitovsky, 1976;

[35] Sen, 1987, emphasizes this point.

might prefer the alternative in which each spent less on his professional wardrobe. Likewise when A sends his child to an expensive private school, he may not intend to reduce the likelihood that the children of others will be accepted by top universities, but that is an effect of his action nevertheless, and it may be the best response of others to send their children to private schools as well. And yet all might find that outcome less attractive than when all send their children to the public schools.

Not even a steeply progressive consumption tax can fully neutralize the externalities that arise from competition for spots atop various local hierarchies. At best, it can reduce some of the costs of those externalities. Even with such a tax, it will still prove useful to ameliorate those externalities through a variety of less formal means-- adoption of social norms, choice of personal reference groups, introspection, and so on. As policy interventions go, a consumption tax is not especially intrusive. After all, we have to tax *something* anyway. And the evidence is strong that across-the-board consumption reductions will not entail significant utility losses for middle- and upper-income citizens.

Concluding Remarks

The US and the UK are unique among industrialized nations in the enthusiasm they have shown for supply-side tax policies. And in both countries, there has also been sharp growth in earnings inequality in recent years. For example, whereas an American at the 95th percentile of the income distribution earned slightly less than 12 times as much as one at the 5th percentile in 1973, the corresponding ratio in 1993 was more than 25.[36] The incomes of the top 1 percent of US earners more than doubled in real

[36] Burtless, 1996.

terms since 1979, a period during which the median income was roughly stable and in which the bottom fifth of earners saw their incomes actually fall by more than 10 percent[37] In Britain, the richest 20 percent earned seven times as much as the poorest 20 percent in 1991, as compared with only four times as much in 1977.[38] And whereas the poorest tenth in Britain are 13 per cent worse off in real terms than they were in 1979, the richest tenth are now 65 per cent better off.[39] The gap between males with the highest wage rates and those with the lowest wage rates is larger now in Britain than at any time since the 1880s, when statistics on wages were first gathered systematically.[40]

The social costs associated with pronounced earnings inequality have long been recognized. The supply siders' implicit message is that these costs are worth bearing in return for the gains in efficiency that accompany lower marginal tax rates. Where liberals have reached a different conclusion on this issue, it has almost always been because they assign different weights to the two goals, not because they dispute the premise that the goals are in conflict.

Yet, as we have seen, there is no compelling theoretical or empirical evidence for this conflict. What is more, if we accept plausible modifications to the standard rational choice model, it turns out that the very same tax policies that promote equity may also promote efficiency. These modifications rest on two assumptions: that monetary rewards in many of the top-paying occupations depend on relative, in addition to absolute performance; and that people care not just about absolute but also about relative consumption. There is considerable evidence for both assumptions.

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[37]For a detailed discussion, see Krugman, 1992.
[38]*The Economist*, November 5, 1994, p. 19.
[39] *The Guardian*, November 25, 1996, p. 12.
[40]Ibid., p. 19.

I am aware of no credible evidence against them. Absent such evidence, economists should stop advising policy makers that a more equitable tax structure will entail a loss of efficiency.

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