

SOME INTERNATIONAL COMPARISONS OF SUPPLY-SIDE TAX POLICY

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Introduction

Mainstream macroeconomics leaves policymakers wandering through a circular maze of paradoxes. Budget deficits supposedly stimulate private spending, causing inflation, but they crowd-out private spending and strengthen the dollar. An increase in public and private borrowing raises interest rates and higher interest rates reduce borrowing, thus reducing interest rates and raising borrowing.

Interest rates rise if the Fed tightens, but easing increases expected inflation and raises interest rates. Being a net lender (to Poland and Latin America) was supposedly better than being a net debtor. But the Fed says it must keep interest rates up or foreigners would invest elsewhere. The dollar would therefore fall if interest rates were lower, and the reduced capital inflow would raise interest rates, raising the dollar. A falling dollar is inflationary, but a rising dollar is not deflationary. Instead, a rising dollar causes trade deficits, which weaken the dollar. There are two dollars, one foreign and one domestic; the fact that the foreign dollar was rising along with the domestic money supply proved there were too many dollars and each dollar is too valuable.

Faced with this sort of confused consensus of demand management, both fiscal and monetary, I once persuaded my neighbor, Jude Wanniski of the *Wall Street Journal*, to adopt a label coined by Herb Stein at a conference at the Homestead (26 March 1976). Stein had ridiculed Mundell's "supply-side fiscalism," but Wanniski converted that to "supply-side economics" because tax rates were only half of Mundell's program. In response to the U.S. abandonment of Bretton Woods monetary rules, Mundell (1971) had predicted worldwide inflation, and proposed reversing the conventional International

Monetary Fund (IMF) or Brookings Institution "policy mix." Higher tax rates would not reduce inflation, he argued, but merely suffocate incentives for added effort and investment, reducing productivity and aggravating stagflation. Monetary policy should focus on stabilizing the value of national currencies in terms of gold or commodities and also in terms of each other, to restore the efficiencies of a common unit of account of predictable value. Separate tax and spending policies should concentrate on dynamic efficiency and incentives.

The task of this paper is half of the Mundell mix—to relate the economic performance of various countries to the microeconomic details of their tax structures. This is not intended to deny the importance of other policy issues such as protectionism, monetary instability, excess regulation, or insecurity of property rights.

The basic theme is that the global deterioration of tax policy in the past decade has been most significant in individual income and payroll taxes on both capital and labor. This is not usually due to higher tax rates per se, but to the falling income thresholds at which the highest rates apply. We begin with illustrations from the United States, compare tax data from industrial countries, and then extend the comparisons to developing countries. This evidence generally supports the hypothesis of Waud (1985)—that chronic worldwide budget deficits suggest many countries are now close to or beyond the downward sloping portion of the long-run Laffer curve, where lower marginal tax rates would yield more real revenue in the long run.

Supply-Side Tax Policy in the United States

The 1981 Reagan tax plan combined populist supply-side elements with the corporatist "capital formation" ideas that sometimes adopt a supply-side label. The Conable-Jones investment incentives came first, and a diluted Kemp-Roth arrived in 1983. As I wrote in 1980, however, "cutting a firm's taxes won't help much if those who would otherwise buy its products and securities are impoverished and demoralized by personal taxes. . . . Machines cannot replace managerial spirit, innovation or personal effort and ambition" (Reynolds 1980).

To focus on the corporate profits tax alone is always a mistake. All taxes are paid by people, in their capacity as suppliers of labor and capital. Not all businesses are corporations, and not all investing (including schooling) is done by business. Household property and incomes bear heavily on corporate success, because households own

and finance the corporations, and because such taxes also affect labor costs and sales.

If asked to define a favorable tax climate for investment, most businessmen would describe the tax code of Britain, Ireland, or Denmark, not that of Japan. Britain allows a first-year write-off of most equipment, with a zero tax rate on distributed earnings and on new corporate investment (King 1983). Compared with U.S. depreciation periods of 3, 5, or 18 years, on the other hand, Japan's write-offs cover 6, 15, and 45 years, and Japan rarely grants an investment tax credit. Japan's 56 percent corporate tax rate compares with 40–45 percent in Denmark, Belgium, and the Netherlands, and with 10 percent on Irish manufacturing.

In 1982, corporate tax revenues amounted to 5.4 percent of gross domestic product (GDP) in Japan, 2.1 percent in the United States, and 1.7 percent in Sweden. One reason that Japan collects so much corporate revenue is that corporations are quite profitable. But that, in turn, may well be a result of Japan's moderate taxation of individual stockholders, bondholders, workers, and customers.

In the United States, in both 1962 and 1981, the view that corporate taxes were most important led to postponing reductions in individual tax rates for two years, while instead adopting accelerated depreciation and the investment tax credit. In both cases, nothing much happened until personal tax rates were later reduced. A recent study by Sahling and Akhtar (1984–85, p. 26) concludes that "the faster business output growth in this recovery relative to the average of previous recoveries reflects, to a large extent, the stimulative effect of *personal* tax cuts."

U.S. corporate taxes dropped from 48.4 percent to 31.3 percent of inflation-adjusted profits over the past five years. But Tatom's (1984) estimates indicate that the reduction of marginal tax rates from combined individual income and social security taxes has been quite modest indeed—down from 55 percent to 52 percent at double the median income. High marginal tax rates remain a massive obstacle to efficient production and exchange. They punish people for earning more by producing more, and thus penalize increased productivity.

By far the largest tax on capital is imposed through *individual* taxes on both income and property. Before-tax corporate profits are less than 40 percent of the income from capital taxed through individual tax schedules—individual interest income, dividends, capital gains, rent, and proprietorships. Even aside from proprietorships and capital gains, income from investments amounts to more than 22 percent of personal income less transfer payments (which are mainly tax-exempt). But that vastly understates the *marginal* impact of individ-

ual income taxes on investment, because income from capital assets is highly concentrated in the higher tax brackets and the marginal individual rate is higher than the corporate rate in all countries. Individuals also pay most property taxes, which reduce the return on capital in general, including corporate capital.

The marginal corporate tax on new equipment is now negative, according to the first Treasury tax reform proposal, but the individual tax on those same investments averages 30 percent (Treasury I, vol. 1, Tables 6-4 and 6-5). On structures and inventories, individuals bear at least a third of a higher marginal tax, depending on dividend payouts and capital gains. Actual tax rates on assets are the total resources extracted from individual investors.

The usual calculations of the "cost of capital" often ignore the marginal tax rate on individual investors, and always assume that tax changes do not affect interest rates. After surveying several studies, and adding their own, Peek and Wilcox (1985, pp. 22-23) concluded: "[T]he evidence consistently points toward an important response of interest rates to personal income tax rates . . . and [toward] the irrelevance of the corporate tax rate."

Estrella and Fuhrer (1983) estimate that U.S. marginal tax rates on household interest income rose from 26 percent in 1966 to 35 percent in 1980. Reducing marginal tax rates on individuals thus directly lowers the cost of capital to corporations by lowering interest rates. Households are net lenders to the corporations, and the amount they lend depends on the after-tax interest they receive. By reducing the "tax premium" in the interest rate (for any given monetary policy), lower individual tax rates reduce the "hurdle rate of return" to make more investments justify their financing costs.

Corporate investment incentives, by contrast, tend to raise the interest rate that corporations are willing and able to offer, to bid for household savings. Such incentives also tend to bid-up prices of capital equipment. In 1984, U.S. producer prices rose 2.4 percent on capital equipment but only 0.9 percent on consumer goods—a reversal of the pre-1981 pattern. Higher prices and interest rates at least weaken the impact of investment incentives.

Tax reform, like economic growth, is not a zero-sum contest between capital and labor. Overtaxing either hurts the other, and the individual income tax is particularly onerous on both business and human capital. There is more to economic development than bricks and machines. People matter too—particularly in an economy of complex information services. As Lindbeck (1983, p. 286) observed:

Higher marginal tax rates create disincentives for the intensity of

work, the ambition to strive for promotion, the willingness to shift from one job or geographical region to another, the desire to invest in human capital (if taxes are progressive), etc. Both households and firms may also be increasingly induced to substitute productive effort in the underground economy for work in official markets—as well as to participate increasingly in zero sum games of search for tax loopholes and profitable financial speculation. The ensuing slowdown of productivity growth in official markets is likely to result in higher inflation. . . .

This certainly has been the experience of both the United States and other industrial countries, as well as developing and less developed countries, as they increased marginal tax rates on individual income beyond the peak of the Laffer curve.

Dynamics of Tax Reform: Lessons from Industrial Countries

The habitual practice of defining “fiscal policy” in terms of nominal budget deficits implicitly assumes that the effects of higher tax rates and reduced spending are essentially the same, when they are actually the exact opposite. Reducing government purchases frees resources for private uses, but raising taxes shifts resources from the private sector to the government. Reducing transfer payments raises the incentive to produce, but raising tax rates lowers that incentive. *Spending measures the average burden of government, but not the marginal burden.*

Even for those who measure the success of policy by what it does for the government, it is not possible to estimate the effect on budget deficits of changes in specific tax policies without first examining their dynamic effects on the economy. As Kotlikoff put it (1982, p. 26): “Descriptions of fiscal policy in terms of its effects on marginal incentives, its pattern of net transfers, and its direct absorption of resources provides more insight than the traditional classification of ‘expenditure’, ‘taxes’ and ‘deficits’ [which] are each ill-defined concepts. . . .”

In a recent *Wall Street Journal* article (Reynolds 1985), I contrasted average tax rates in 14 industrial and semi-industrial countries with the growth in *real* tax revenues from 1975 to 1982. The purpose was to show that raising the percentage of gross national product (GNP) devoted to taxes does not necessarily raise real revenues over time. Governments cannot pay their bills with percentages, and 40 percent of GNP that is not produced is zero.

State and local taxes were included, because the total burden affects the economy, and excessive tax rates at one level of government

reduce the yield at another. Deflated U.S. dollars were used, because the dollar is the unit in which most commodities are priced and debts are due. National price indexes differ considerably in scope and weights, and are sometimes biased by price controls. Still, the basic results hold up if revenues are adjusted by each country's GNP deflator. On that basis, real revenues fell 6.6 percent in Sweden, from 1975 to 1982, fell 3.2 percent in Germany, rose only 2.6 percent in France but rose 75.7 percent in Japan.

The main reason high-tax countries experienced little or no real revenue growth is that they experienced little growth of real GNP (or GDP), which roughly measures the potential tax base. The top three in taxes—Sweden, Belgium, and the Netherlands—had annual real GDP growth of 1.7 percent from 1976 to 1983, while economic growth in the United States, Portugal, and Japan averaged 4.1 percent.

Even with 1.5 percent real growth, and a constant or rising tax share, the arithmetic would appear to produce some increase in real revenues. The reason it does not do so is that skills at tax avoidance and evasion increase with experience, so that taxable income shrinks relative to GDP. A second reason is the growing percentage of GDP accounted for by government consumption, whose market value is unknown. That is, GDP growth rates in places such as Sweden are mostly an illusion. The IMF (1984, pp. 35–37) found that real government consumption in Sweden grew by 3 percent a year in 1975–82, but capital formation fell by 2 percent a year and manufacturing by 1 percent. This may add up to a rise in GDP, but it does not increase the net resources available to the tax collector. As Table 1 shows, the growth of GDP in high-tax economies is not matched by growth of investment or private consumption. And governments cannot prosper by taxing themselves.

Ulf Jacobsson (1984, p. 87) summarized research on Swedish taxation as follows:

Stuart and Feige both reach the conclusion that Sweden is on the downward-sloping part of the Laffer Curve. Stuart in his study finds that 75 percent of the decline in Swedish growth rates in the 1970's could be explained by increased taxes. Hansson and Stuart in their 1982 study based on average tax rates conclude that while Sweden is still on the upward portion of the Laffer Curve, it is on a segment where tax increases have become sharply detrimental to output. In a 1981 study focused solely on income taxation, Jacobsson and Normann reached a similar conclusion.

Studies based on average rather than marginal tax rates, or on income taxes alone (excluding the 36 percent payroll tax and the 19 percent value-added tax), obviously understate the Laffer curve effect.

TABLE 1
WHY GDP GROWTH IS MISLEADING

Country ^a	Annual Change, 1979–83 ^b			
	GDP	Capital Formation	Per Capita Private Consumption	Government Consumption
Sweden	1.2	–0.5	–0.5	1.5
Belgium	0.9	–5.1	0.1	0.5
Netherlands	–0.3	–3.9	–1.6	1.0
Ireland	2.2	–3.5	–2.3	3.2
Greece	0.4	–4.3	0.1	2.8
Denmark	0.9	–6.4	–0.7	2.4
W. Germany	0.5	–0.7	0.1	0.7

^aSee Table 3 for individual tax rates in each of these seven industrial countries.

^bIn percent. All figures adjusted for inflation.

SOURCE: OECD (1984b).

Despite these limitations, however, the Swedish studies point to a severe loss of economic growth and real tax revenue due to excessive tax rates.

The Laffer curve is a curve, not a point. Even if a 10 percent tax surcharge yields a 1 percent addition to revenue for a year or two, but is also “sharply detrimental to output,” that scarcely demonstrates that marginal tax rates are not subject to diminishing returns. Any tax policy that merely reduced long-run potential economic growth by a half percentage point a year must, with compounding, eventually erode the real tax base enough to outweigh a higher tax rate. The tax rate cannot be continually increased to offset the shrinking tax base without the ratio of tax to GNP heading toward 100 percent.

Since Swedish tax rates are already past the point of diminishing returns, it must follow that other countries with similar tax schedules could also raise more revenue with lower marginal tax rates. That clearly includes the Netherlands, Denmark, Belgium, Italy, Ireland, Greece, and perhaps West Germany.

Table 2 shows the growth of national, state, and local government debt in the highest-taxed countries compared with the United States. While debt in the United States remained at 46 percent of GNP from 1970 to 1984, it rose from 11 percent to 63 percent in Denmark, from 31 percent to 67 percent in Sweden, and from 73 percent to 116 percent of GNP in Belgium. There are two exceptions—Japan has low taxes and chronic deficits, while France has fairly high tax rates

TABLE 2
GOVERNMENT DEFICITS AND DEBT
(Percent of GNP)

Country	Tax/GNP	Deficit/GNP	Gov't Debt/GNP	
	1984	1980-84	1970	1983-84
Sweden	50.6	4.6	31	67
Denmark	47.3	6.6	11	63
Belgium	45.4	10.5	73	116
Netherlands	45.4	5.9	51	61
France ^a	45.4	2.2	29	37
Austria	42.0	2.1	19	45
Italy ^a	40.6	11.4	44	85
Ireland	40.1	11.4	NA	NA
United Kingdom ^a	38.6	3.0	86	55
Germany ^a	37.3	2.9	18	41
Finland	37.0	0.1	16	19
Canada ^a	34.8	4.0	54	58
Australia	30.0	1.5	42	25
United States ^a	29.0	2.6	46	46
Japan ^a	27.7	3.5	12	67
Spain	27.2	4.5	14	31

^aDebt/GNP ratios are for 1984 for these countries, 1983 for others. All figures include state and local government.

SOURCES: Tanzi (1985); OECD (1984a, p. 32; 1985); Morgan Guaranty (1984).

and a small national debt. In general, however, the experience of the high-tax countries casts considerable doubt on the idea that raising tax rates slows the red ink. The opposite interpretation is more consistent with this debt history—overtaxed countries are accumulating large debts even as real revenues for servicing that debt have stopped rising due to stagnation of the private tax base.

In 1980, Don Fullerton investigated the U.S. Laffer curve for the Treasury Department; his result (summarized by Protopapadakis 1983, p. 284) was that “even with optimistic assumptions about the supply of labor, the *average* tax rate on *wages* would have to be well above 40 percent before tax cuts would pay for themselves.” Fullerton somehow estimated *average* tax rates of only 9 percent on labor in 1973. But the issue is the effect of *marginal* tax rates in 1985 on the *quality* and quantity of both labor and capital, including the implicit marginal cost of losing transfer payments by producing.

The relatively rapid growth of real revenues in lower-taxed countries is certainly consistent with a medium-term Laffer curve. But taxes as a percentage of GNP or GDP are a mediocre proxy for the relevant

marginal tax rates. Table 3 instead summarizes available details about individual tax rates in industrial countries, while Table 4 compares percentages of GDP devoted to various taxes.

The data in Tables 3 and 4 yield the following seven generalizations:

1. Tax revenues, even as a percent of GDP, are only loosely related to statutory tax rates. Individual income taxes are 10–12 percent of GDP in over half of the countries, despite substantial differences in progressivity. Japan collects only 7 percent of GDP from this source, because generous earned-income adjustments, personal exemptions, and deduction of social security taxes leave a \$40,000 family of four with only \$23,400 in taxable income. Japan's high tax rates, therefore, have been relatively nonbinding until the last four years—imposed on a small fraction of the incomes of a small minority. In France, the individual income tax collects only 6 percent of GDP from individual incomes, because increasing income from \$59,000 to \$78,000 only raises average tax rates from 19 percent to 26 percent yet it raises marginal tax rates from 35 percent to 63 percent.
2. The absolute and relative burden of the corporate profits tax has, if anything, an inverse correlation with growth of the private economy or capital formation. Sweden obtained only 3.2 percent of revenues from corporate profits over the 1975–82 period, while Japan obtained 20.8 percent, and the United States obtained 10.1 percent. Gross capital formation including government investment fell by 2 percent a year in Sweden (and even more in Belgium and the Netherlands), but rose slightly in the United States and increased by 3 percent a year in Japan. National and local corporate tax rates are highest in Japan, Germany, Canada, and the United States, and lowest in Denmark, the Netherlands, Belgium, Ireland, and Switzerland.
3. Seven countries that rely heavily on consumption taxes, amounting to 12–16 percent of GDP in 1982, experienced average inflation of 9.4 percent in 1975–82, compared with 5.2 percent inflation in the other countries (except Italy). Capital formation in consumption-tax countries was generally slower than among countries with relatively higher corporate taxes.
4. Eight of the major countries completely exempt at least some capital gains from taxation, and the average maximum rate among all of them is 20 percent. France, Austria, Germany, and Japan are particularly gentle with capital gains taxes, as is the United States since 1978.

TABLE 3
INDIVIDUAL TAX RATES AND ECONOMIC GROWTH

Country	Maximum Individual Tax Rate ^a				Annual Percentage Change	
	1979		1984		Real GDP 1979-83	Capital Formation 1973-83
Major Industrial						
Sweden ^b	87 @	38,700	80 @	39,600	1.2	-0.5
Netherlands	72 @	92,600	72 @	61,400	-0.3	-1.6
Belgium	76 @	136,400	76 @	63,000	0.9	-1.2
Italy	72 @	595,000	81 @	257,900	0.6	-0.4
Denmark	66 @	26,900	73 @	22,200	1.2	-3.3
France	60 @	92,000	65 @	31,900	1.0	0.5
Norway ^b	75 @	60,000	64 @	33,900	2.4	2.0
Germany	56 @	140,800	56 @	41,200	0.5	0.2
Luxembourg	58 @	63,400	60 @	55,000	1.3	-2.5
United Kingdom ^b	83 @	48,600	60 @	41,700	0.5	-0.3
Austria ^b	62 @	111,500	62 @	67,900	1.5	0
Canada	47-62 @	84,100	49-60 @	44,800	1.0	1.3
Finland ^b	65-71 @	64,500	64-70 @	61,600	3.3	0.9
Switzerland ^b	31-44 @	55,300	33-46 @	151,000	1.4	-0.4
United States ^b	70-75 @	60,000	50-59 @	162,400	1.0	0.5
Japan ^b	75 @	396,900	70 @	317,400	3.8	1.9

Other Industrial

Greece	60 @	82,200	63 @	37,900	0.4	-1.9
New Zealand	60 @	23,100	66 @	17,900	1.6	-0.6
Ireland	60 @	14,200	65 @	19,800	2.2	1.8
Spain	66 @	142,000	66 @	70,300	1.3	-1.0
Australia ^b	62 @	37,700	60 @	29,500	1.9	0.7
Turkey		NA	60 @	55,900	2.9	3.6
Cyprus	60 @	13,900	60 @	21,700	4.0	NA
Portugal ^b	84 @	20,900	69 @	41,500	4.7	0.9

^aTax rate (percent) and corresponding taxable income (in dollars).

^bIndicates countries in which tax rates have been reduced, or thresholds raised, since 1975. A range of tax rates indicates varying regional taxation. Thresholds were calculated using exchange rates on 1 March 1979 and 31 December 1984, except for Portugal, which was updated to 5 June 1985.

SOURCES: Price Waterhouse (1984); IMF (1984); OECD (1984b).

TABLE 4
TAX REVENUES AS A PERCENT OF GDP, 1982-83

Country	Total ^a	Individual	Social Security	Consumption	Corporate & Property
Major Industrial					
Sweden	51	20	21	12	2
Netherlands	47	11	19	11	5
Belgium	45	17	14	12	4
Italy	41	10	19	7	4
Denmark	46	24	1	16	3
France	45	6	19	13	4
Norway	46	12	10	17	10
Germany	37	11	13	10	4
Luxembourg	43	11	11	8	8
United Kingdom	38	11	7	7	9
Austria	41	9	13	13	2
Canada	33	12	1	12	6
Finland	35	16	3	15	3
Switzerland	32	11	10	6	4
United States	29	12	8	5	5
Japan	28	7	8	4	7
Other OECD					
Greece	33	4	10	13	3
Ireland	39	12	6	18	3
Portugal	33	7 ^b	9	13	4 ^b
Spain	27	5	12	6	2
Turkey	19	9 ^b	1	6	4
Australia	30	14	2	10	5
New Zealand	33	20	0	8	5

^aTotals are for 1983, and may therefore exceed the sum of the components, since the last three columns are for 1982.

^bEstimate.

SOURCES: OECD (1984c; 1985).

5. Nearly all major countries, except the United States, permit deduction of social security taxes, as well as deduction of premiums to private life insurance and pensions. The United States imposes a double tax on labor income.
6. Countries in which combined taxes on individual incomes and payrolls exceed 25 percent of GDP—Sweden, Belgium, the Netherlands, Italy, and Germany—have all experienced economic stagnation or contraction.

7. A few countries—Spain, Hong Kong, and Switzerland—have a maximum average tax, which reduces marginal rates as income rises. Belgium and Turkey simply reduce marginal tax rates at higher incomes.

These observations are consistent with a wide variety of interpretations, but they are not consistent with the usual businessman's view that growth can be improved by shifting tax burdens from corporations to their individual owners, workers, and consumers. Doing that raises the marginal cost of both labor and capital that households supply to corporations.

What is perhaps most striking about the comparison is that even the relatively low-tax countries are not really far from the Swedish situation, in which a strong Laffer curve effect is well-documented. In Japan real GNP growth averaged 10.3 percent from 1963 to 1973, when individual taxes were only 4 percent of GDP. Since 1977, that tax ratio rose from 5 percent to 7 percent; economic growth slowed in every year, to 3 percent in 1983. Incomes have risen so fast in Japan that previous phantom tax brackets are now affecting enough people to deter added effort and investment. Japan cut individual tax rates by 5 percent in 1984, and real output rose 5.8 percent, but that will have to be periodically repeated if Japan is to avoid a Laffer trap.

Back in 1969, Vito Tanzi of the IMF published *The Individual Income Tax and Economic Growth: An International Comparison*. His conclusion was as follows (p. 109):

The relationship between the personal income tax and the gross national product of countries has shown that Japan, with the fastest rate of growth is also the only one where the percentage of the tax to gross national product has decreased. . . . on the other hand the United Kingdom, with the slowest rate of growth, is the one in which that percentage has increased the most. . . . For Germany, the percentage remained almost constant during the period of highest growth. . . . It is important to point out that in the absence of any governmental action, the countries [in which real GNP] increased fastest are those which should have shown the largest increase in the tax/GNP ratio. The fact that they did not . . . was the result of frequent tax cuts.

We could only add that those countries that repeatedly reduced individual tax rates also experienced, and continue to experience, the most rapid increases in real revenue from *all* taxes.

Whenever excessive marginal tax rates have been reduced, there has been a sudden upward kick to real output, even when tax rates remained too high for longer-run development. The prospect of improved after-tax income streams is discounted in equity markets,

reducing the cost of capital and raising wealth. The recent U.S. example was not lost on foreign governments, but few have noticed how dramatic a difference there really was. In the first six quarters of the 1983–84 expansion, U.S. gross capital formation rose by 25 percent, while Japan's real capital formation fell by 1 percent (U.S. Department of Commerce 1984, pp. 14, 42).

There have been other experiments. Austrian tax rates on individuals were massively reduced in 1976. At an income of \$20,000, individual income taxes fell 55 percent between 1975 and 1977 for singles and 24 percent for families. Real GDP growth was 4.5 percent in 1976–77, and growth of real tax revenues was 5.7 percent. Austria has no tax on capital gains and the social security tax has a zero marginal rate above \$25,000 a year.

In 1982, Sweden passed a small cut in individual tax rates phased-in through 1984, cutting the top rate from 87 percent to 80 percent. It also exempted up to a third of income from taxation if invested in Swedish equities. From September 1982 to March 1983, the 64 percent rise in the Swedish stock market was the highest in the world, even in dollar terms. Real GNP has grown at almost a 3 percent pace in 1983–84—statistically exaggerated, but nonetheless triple Sweden's average over the previous eight years. It is ironic that defenders of high taxation often point to Austria and Sweden as examples of why tax reduction is unnecessary. The government of Sweden has promised to ease income taxes again, but is holding that promise hostage to an unrealistic combination of devaluation and wage restraint. Denmark is attempting to reduce the top tax rate from 73 percent to 68 percent, but the total package is not promising.

Finland cut individual taxes from 19–20 percent of GDP to 16 percent in 1978 and 15.1 percent in 1979. Real growth of 0.2 percent in 1976 and 1977 rose to 7.4 percent in 1979 and 5.6 percent in 1980. With one of the lowest national tax rates in Europe, Finland experienced above-average growth over the past three years and a 6 percent unemployment rate—half the European average.

Observing that high marginal tax rates merely “stifle initiative and output,” President Mitterand of France removed a surcharge on higher incomes and recently cut individual tax rates by 5 percent. The United Kingdom eliminated a 15 percent surcharge on investment income in April 1984, and repealed some capital gains taxes in July 1985, but the U.K. appears to be retreating from tax relief scheduled for March 1986. Canada is moving backwards, proposing a progressive surtax for 1986.

The tax problem in Germany was obvious even to the *London Economist* (4 February 1984):

Personal tax allowances are not indexed-linked. Having last been adjusted in 1974, they now look distinctly ungenerous. . . . The top marginal tax rate on personal incomes, at 56%, is considered discouragingly high. The government . . . reckons that to restore incentives on a really worthwhile scale it would have to forego revenue of around DM 20 billion.

Germany has finally announced a modest tax relief plan for the future, but even Paul Volcker regards it as too little and too late. Meanwhile, employment taxes pushed Germany over the edge of the Laffer curve. Real revenues in the third quarter of 1984 were down 2.8 percent from the fourth quarter of 1981, and industrial employment had fallen 7.2 percent.

There is no shortage of controlled experiments in this area. Supply-side tax theory would predict that economic performance in Ontario, Canada, with a top tax rate of 51 percent, would be superior to that of Quebec, with its 60 percent rate. It would predict that development in Puerto Rico, with a top tax rate of 68 percent, would fall behind that of any U.S. state. It would predict that Australia would outperform New Zealand, that Cyprus would outperform Greece, that the state of New Jersey would grow faster than New York, and so on. All of these predictions are correct.

Keith Marsden of the World Bank compared tax rates and performance among 10 pairs of countries with initially similar per capita incomes (Marsden 1983). He found that, "those with lower taxes experienced more rapid expansion of investment, productivity, employment, and government services, and had better growth rates—without discriminating against the poor." He also found that "expansion of the tax base generated increased revenues," and "with the exception of Japan, government deficits were smaller in low-tax countries than in their high-tax counterparts" (Marsden 1984).

Tax Policy in Developing Countries

Although the force of emulation is spreading supply-side policies throughout the industrial world, developing countries can only get U.S. or IMF aid by moving in the opposite direction. Western advisers attempt to cure capital flight from developing countries through perpetual devaluations. They seem to believe that all countries should export more than they import, and can do that by repeatedly devaluing their currencies against each other. The resulting runaway inflations cause capital flight and higher tax rates, and what is left of the economy goes underground—operating inefficiently on barter or illegal U.S. currency. Budget deficits naturally explode and cannot be

financed responsibly because of both punitive tax rates and an unpredictable value of the monetary unit. A "brain drain" soon thwarts development of native talent and enterprise. Bankrupt industries become a drain on the treasury. And what does the IMF, or U.S. State Department then propose? Devalue again, and raise tax rates.

This mainstream formula—the opposite of the Mundell (1971) mix—has produced a rapid reduction in the income thresholds at which the highest tax rates begin to bite. It amounts to an export of Western "bracket creep" at a greatly accelerated pace—"bracket gallop."

Table 5 compares individual tax rates, thresholds, and economic growth in four regions. The high-tax countries are again at the top of each group. Countries that have reduced tax rates or raised thresholds are shown by an asterisk, except when falling thresholds clearly wiped-out a rate reduction. The third column introduces a "threshold-income ratio" to indicate whether high tax rates apply at incomes that are high or low relative to 1982 per capita GNP (in 1980 dollars).

Compare average growth of real GDP in the three highest-taxed countries in all four regions with the three lowest-taxed countries. The low-tax countries grew, on average, by 4.9 percent a year in the troublesome four years, 1979–83, while the high-tax economies actually shrank by 1.4 percent a year. Supply-side theory provides an explanation that is fully consistent with this evidence, while no other systematic monetarist or Keynesian explanation has been, or could be, offered.

Truly devastating taxation of poor people is relatively new in modern history, occurring since 1980 in most cases and since 1983 in a few. Before that, many "developing" countries merely stagnated under European-style tax penalties on added income. Only a few had taxed themselves into continually falling per capita income. In Jamaica, an early example, per capita real GDP fell 38 percent from 1972 to 1982.

Since 1977, the Jamaican dollar dropped from parity to 6-to-1 with the U.S. dollar. Consumer prices tripled, and Jamaicans now find themselves in a 58 percent tax bracket at an income of \$2,500 a year. A third of Jamaica's professionals and managers have reportedly left the country, and there is considerable barter and underground commerce in tourist currencies.

A few years ago, the individual income tax still raised 17 percent of Jamaica's shrinking tax revenues—small reward for ruining the country. Manufacturing output fell by 6 percent in 1984, and the Jamaican government predicts a 3.8 percent drop in total output in 1985.

TABLE 5
INDIVIDUAL TAX RATES IN DEVELOPING COUNTRIES

Region/Country	Maximum Individual Tax Rate ^a				Threshold- Income Ratio ^b	Real GDP 1979-83 ^c
	1979		1984			
North & Central America						
Jamaica	80 @	17,400	58 @	2,500	2	-0.8
Costa Rica	50 @	40,700	50 @	2,300	2	-3.6 ^e
El Salvador	60 @	100,000	48 @	12,200	18	-5.8
Puerto Rico ^d	79 @	200,000	68 @	200,000	52	-1.5 ^e
Mexico	55 @	65,800	55 @	61,600	29	2.8
Nicaragua	50 @	200,000	50 @	70,200	82	4.8
Guatemala	40 @	500,000	48 @	337,000	314	0.2
Honduras	40 @	500,000	46 @	495,000	789	0.4
Panama	56 @	200,000	56 @	200,000	100	6.3
Asia-Pacific Basin						
Western Samoa	50 @	13,900	50 @	4,700	1	-3.9
Papua New Guinea	50 @	42,700	50 @	4,200	5	0.4
Fiji	53 @	10,000	50 @	17,300	9	-0.2
Pakistan	55 @	5,000	60 @	6,800	19	7.1
India	60 @	12,000	62 @	8,000	33	5.1
Philippines	70 @	68,500	60 @	25,300	33	3.2
S. Korea ^d	89 @	173,200	65 @	72,300	44	4.7
Thailand	60 @	50,000	65 @	73,500	98	5.5

TABLE 5 (cont.)

Region/Country	Maximum Individual Tax Rate ^a				Threshold- Income Ratio ^b	Real GDP 1979- 83 ^c
	1979		1984			
Malaysia ^d	60 @	34,400	45 @	121,900	71	6.6
Indonesia ^d	50 @	15,400	35 @	46,500	84	6.1
China ^d	0-30 @	50,000	0-45 @	50,000	200 ^e	6.8
Hong Kong	15 @	20,700	25 @	5,100	1	7.0
Singapore ^d	55 @	185,200	40 @	338,400	62	8.6
Africa						
Zaire	60 @	6,200	60 @	1,400	8	0.9
Zambia	70 @	16,300	80 @	11,100	20	2.0
S. Africa	60 @	33,300	50 @	20,000	8	2.1
Morocco	64 @	189,900	87 @	78,400	102	2.0
Zimbabwe	45 @	25,000	63 @	23,100	26	5.5
Malawi	45 @	15,200	50 @	14,000	70	1.9
Egypt ^d	80 @	142,900	65 @	153,800	241	7.1
Botswana ^d	75 @	48,000	60 @	35,600	42	13.5
South America						
Peru	65 @	39,000	65 @	40	0	-1.3
Bolivia	48 @	11,000	30 @	47	0	-4.2
Chile	60 @	30,800	57 @	3,700	2	-0.3
Brazil	55 @	76,400	60 @	10,800	5	0.8

Argentina	45 @	73,700	62 @	67,900	29	-1.8
Ecuador	50 @	108,900	58 @	28,900	25	1.8
Columbia ^d	56 @	26,500	49 @	57,600	42	2.0
Paraguay	0	NA	30 @	8,500	6	4.0

^aTax rate (in percent) and associated taxable income (in dollars). Exchange rates used: 1 March 1979 and 31 December 1984, except for Jamaica, Malaysia, Botswana, and Singapore, which are updated to 5 June 1985.

^bIncome at which the highest tax rate applies divided by per capita GNP in 1982 (1980 dollars).

^cAnnual percentage change.

^dCountries that significantly reduced tax rates, or raised thresholds, since 1975. Omits countries (e.g., Bolivia and Philippines) in which the rate reduction was offset by falling thresholds.

^eEstimate.

SOURCES: Price Waterhouse (1984); IMF (1984).

Costa Rica also let its currency go into a free-fall in 1980, as did El Salvador and, more recently, Nicaragua. Consumer prices quadrupled and Costa Ricans found themselves in 50 percent tax brackets at \$2,300 until 1985, when the threshold was raised to \$60,500. Meanwhile, the 50 percent bracket in Nicaragua dropped with inflation from a \$200,000 annual income to \$333 by mid-1985. It is not merely the higher inflation that explains these differences—low-tax countries such as Hong Kong have had double-digit inflation at times. What almost destroyed Costa Rica and continues to devastate Jamaica is the increasing tax rates on low incomes.

In the Asian-Pacific area, there are more success stories. But Western Samoa and Papua New Guinea (like Costa Rica and Jamaica) let their currencies sink. Most other countries have “phantom” tax brackets, like the United States in 1965 or Japan in 1977, where top tax rates only apply to taxable incomes higher than the economies can yet produce. Unlike any other region, over half of the Asian countries have not only avoided bracket creep, but have raised tax thresholds since 1979. Malaysia is a good example; Malaysia’s economy grew by 7.3 percent in 1984. There were also huge reductions in tax rates in South Korea, Indonesia, and Singapore.

India recently announced an increase in thresholds and a cut in the top tax rate to 50 percent (agriculture was always tax-exempt). The corporate tax surcharge and wealth tax were reduced, and death duties abolished. “The cuts are partly aimed at encouraging industrial investment and faster growth and at curbing the country’s booming black economy,” reports the *Financial Times* (18 March 1985), but the tax package “was larger than would have been allowed by the International Monetary Fund if its . . . arrangement had not been terminated by India last year.”

The Indian currency, already stronger than the deutsche mark, instantly rose on the news. The Bombay stock market experienced an unprecedented boom, and stock prices “doubled or tripled” between March and August (Weisman 1985).

Indonesia slashed marginal tax rates and trebled thresholds in 1983 to maintain a growth rate that has averaged 7.5 percent a year since 1968. Real tax revenues rose 47 percent from 1978 to 1982. Imports rose 47 percent from 1980 to 1983. The country produces some oil, but other oil producers have not fared so well (Iran, with a 90 percent tax rate, is an extreme example).

In China, the marginal rate on agriculture is zero. The state collects a fixed amount of produce and tax, under a contract extended from 5 to 15 years in 1983, and, as DeWulf (1985) reports,

the contractor is free to dispose of excess produce in free markets. . . . The system has infused the rural areas with a new enthusiasm and has been much better able to draw on the resourcefulness of the peasants. . . . The more efficient utilization of the rural work force has made about one-third of the agricultural workers redundant. . . . Industrial production in the rural areas and nonagricultural activities . . . have been stimulated and are currently, in fact, the fastest growing sectors in the economy.

Agricultural production rose 9 percent a year in 1981–83, and total GNP rose 13 percent in 1984. Zhang Jialing recently published a favorable book on supply-side economics in Shanghai.

Hong Kong has long been a supply-side paradigm, but the situation there has been slipping. The increased marginal tax rate of 25 percent is certainly modest, and comes with a 17 percent ceiling on average tax rates, but those higher tax rates now apply to significantly lower incomes. Revenue from higher tax rates, as always, has been disappointing, pushing Hong Kong's budget into significant deficit in 1983–84 for the first time in 38 years.

The Philippines is a sad example of how rapidly tax policy can collapse an economy under Western advice. Paul Wolfowitz (1985), assistant secretary of state, applauds "an IMF arrangement involving stringent austerity . . . a floating peso and broad new taxes." Already suffering from bracket creep, the Philippine economy was pushed over the cliff by IMF-State Department assistance. The Philippines' new "floating peso" fell 65 percent in 1984, inflation quadrupled to 50 percent, and real GNP fell by 5.5 percent—the first drop since World War II.

Such exceptions prove the rule. The tax-slashing, import-led, strong-currency boom that still dominates Asia remains the supply-side model for the rest of the world.

Most African countries are under IMF tutelage, and have therefore raised tax rates through both legislation and devaluation. Sudan is typical, with a 60 percent tax rate at \$4,000 reimposed in November 1984. "Only a handful of African countries have managed to avoid the unwelcome embraces of the International Monetary Fund in the past few years," reports the *Financial Times* (15 April 1985).

Zambia and Zaire, like Jamaica and Ghana, have been severely overtaxed for a decade or more. Real GDP fell by 3.1 percent a year in Zambia from 1975 to 1979, despite rising copper prices. In April 1979, Zambia cut the top tax rate from 80 percent to 75 percent, and later to 70 percent. Real GDP rose by 4.1 percent a year in 1980–81 (far better than Zaire), and real revenues jumped 16 percent in a single year. In 1982, however, Zambia raised the top tax rate back to

80 percent. Real GDP fell 2 percent, and recovered to only 1.7 percent in 1983. From 1974 to 1982, real tax revenues fell by 45 percent.

The 5.5 percent average growth in Zimbabwe is misleading. The economy grew by 13.2 percent a year in 1980–81, but Zimbabwe has since suffered a series of massive tax increases. Real output fell 1.3 percent in 1982, and by about 3 percent a year in 1983 and 1984. "The new strategy risks alienating . . . the growing black urban middle class that faces higher prices and taxes while coping with a government-imposed wage freeze," writes the *Washington Post* (14 September 1983). "Fiscal measures designed to produce ready cash for the regime serve to intensify the crisis rather than ameliorate it," adds the *Swiss Review of World Affairs* (October 1984).

The top tax rate in Malawi was 40 percent before 1979, but was raised to 50 percent by 1980. Real revenues quickly fell by 14 percent. Still, Malawi remains a relatively low-tax country by African standards, and real GDP rose by 6.8 percent in 1984.

Egypt both reduced tax rates and multiplied thresholds by ten under the late President Sadat. Growth of real GDP averaged 8.5 percent a year from 1975 to 1982.

The other supply-side success story in Africa is Botswana. Despite a severe drought in 1982, annual growth of real GDP in Botswana has actually averaged 14.8 percent a year since 1968. Real tax revenues rose 154 percent from 1977 to 1983, inflation is about 7 percent, and Botswana's budget surplus in 1983 was 7 percent of GDP. Tax rates have been reduced, and the thresholds remain comfortably high relative to income. The top corporate tax rate is 35 percent, with no social security tax.

The standard explanations do not work. Botswana started with an extremely low income, but so did many neighboring nations which nonetheless drove income even lower. Botswana has diamonds and casinos and many men working in South Africa, but that does not explain rapid growth in both agriculture and manufacturing—far outperforming South Africa or surrounding nations (Zimbabwe, Zaire, and Zambia). Botswana and Egypt have the lowest tax rates in Africa, and the results are the same as in Asia.

In South America, accelerating devaluation and bracket creep have been pushed to their logical conclusion. No nation in the area can escape the collapse of its trading partners, but two have done better than the others. Paraguay has no individual income tax, just a flat 26 percent payroll tax and a 30 percent corporate tax. Columbia both reduced tax rates and doubled thresholds. The rest of the continent is being taxed into oblivion.

In Peru, before 1985, the top tax rate of 65 percent applied at an annual income of \$40. Not surprising, "only one out of every three Peruvians is steadily employed in the formal (non-underground) economy" (Zevallos 1985). Brazil, Argentina, and Ecuador raised rates and lowered thresholds. None of these countries is doing well, to put it mildly.

Conclusion

Tax revenues are not the issue when poor countries are being taxed into even deeper poverty. Among 20 countries the World Bank categorizes as the poorest of the poor LDCs, the individual income tax accounts for only 7 percent of government revenue, on average. Most revenue instead comes from sales taxes and, unfortunately, tariffs. The fact that oppressive tax rates yield little revenue, so that taxes remain a modest percentage of (depressed) GNP, is not evidence that taxes do not matter. On the contrary, *it is precisely the ways in which high tax rates fail to yield revenue that often measures their devastating effect.* To avoid tax rates which would otherwise destroy everything, large-scale enterprises are forced to become small enough to be invisible. Henry Ford's economies of mass production are reversed, and shoes are made in basements rather than factories. Efficient marketing, such as advertising, becomes impossible because it would draw attention. Efficient accounting likewise could become evidence of tax evasion. Barter and foreign currencies replace sophisticated financial services. Overtaxed economies thus revert to primitive, pre-industrial practices, shrinking potential productivity.

The least-developed countries could easily substitute a 10 percent flat tax, with generous exemptions for the poor, without even a static "paper loss" of revenue. A humane gesture would be for Western nations to offer aid to make up for any revenue loss from tax reform. Since revenues would unquestionably soar, the gesture is free.

The overwhelming message from these cross-sectional case studies is that marginal tax rates on individuals are prohibitively high at increasingly modest incomes throughout at least half the world. Academic "reforms" are of no use unless they address this basic problem. Ending double taxes on capital is not helpful if it raises double taxes on labor. Reducing an average tax on "savings" is not helpful if it results in a higher marginal tax on earnings.

Internal research at the IMF is beginning to at least ask the right questions. A recent IMF paper by Gandhi (1985) concludes: "the tax systems of developing countries would look very different if efficient allocation were the sole concern. . . . The rates of taxation . . . would

contain little or no progression." Needless to say, this is not the contingency the IMF attaches to its loans, but it often should be. Overtaxed nations are inherently bad credit risks.

In his recent study for the Brookings Institution, Richard Goode (1983, pp. 96–97) expressed the key issues for developing countries:

High taxes may make people less willing to work, to assume managerial responsibility, to make innovations, to save and to invest. . . . The more progressive a tax the more likely it is that. . . incentives will be damaged. . . . Government use of tax revenues to subsidize or provide free goods and services that people would otherwise buy for themselves, such as food, housing and medical services, will accentuate the adverse effects on incentives. . . . Resistance may take the form of increased evasion . . . [or] diversion of activities from commercial or organized markets to other channels that are less exposed to taxation. . . . Migration and capital flight to countries with lower taxes are strong forms of resistance.

Strong forms of resistance are rapidly becoming the rule rather than the exception, and with ample justification. From our sample of industrial and less developed countries, it seems apparent that at least half of the countries in each category moved onto the downside of the Laffer curve in very recent years. Many of the others are already on an uncomfortable slope, where anemic economic growth makes real revenue growth less than it could be at lower marginal tax rates.

Do-it-yourself tax reduction may be better than none, but it is extremely inefficient. Lobbying costs can exceed a dollar for every dollar of loopholes. Executives can waste a day per week keeping track of business expenses and the company car. Government ends up hiring one tax collector for each of the few taxpayers who are still making profits or working in the visible economy.

Roger Waud (1985, pp. 1, 22) has noted that partly because of more intense tax avoidance and evasion:

an inverse relationship between tax rates and tax revenues may exist at low levels of the tax rate. Consequently determined attempts to eliminate or reduce deficits can become self-defeating. . . . Once the economy is on the downward sloping portion of the Laffer Curve it may become trapped in deficit by a combination of political expediency, uncertainty about the shape of the curve, and a conventional wisdom which holds that increases in tax rates reduce deficits.

Ralph Nader's report on U.S. tax shelters likewise worries that "Congress could well discover that . . . tax cheating is so prevalent, that it *can't* even raise revenues to cut the deficits through the current tax system . . . without major rate reductions" (Meyer 1985, p. 57).

Whether we call it the Laffer curve or the Keynes curve, the Nader paradox, or the Waud trap, taxing ourselves into deficit is nothing new.

In ancient Greece, Xenophon's *Economicus* advised that encouraging commerce would improve tax revenues—the Xenophon Curve. But Will Durant (1939, p. 466) describes what instead occurred (and is still occurring) in Athens:

The politicians strained their ingenuity to discover new sources of public revenue. . . . The results of these imposts was a wholesale hiding of wealth and income. Evasion became universal, goods were seized, men were thrown into jail. But the wealth still hid itself, or melted away.

At Xenophon's banquet (*Socratic Discourses* 1910, pp. 179–80), Charmides explained tax collection costs and transfer payments to Socrates:

When I was rich . . . I was forced to keep in fee with some of these pettifogging rascals that retain to the law, who swarm all over town like so many locusts. . . . I was obliged to bear public offices at my own charges, and to pay taxes; nor was it permitted me to go abroad to travel to avoid that expense. But now that my estate . . . is all gone . . . I sleep wonderfully sound, and stretched upon my bed as one altogether fearless of officers. . . . I have yet another advantage from my poverty; I then paid tribute to the republic; now the republic pays tribute to me; for it maintains me.

In ancient Rome, too, the Durants report (1968, p. 61):

taxation rose to such heights that men lost incentive to work or earn, and an erosive contest began between lawyers finding devices to evade taxes and lawyers formulating laws to prevent evasion. . . . The government issued decrees binding the peasant to his field and the worker to his shop until all his debts and taxes had been paid. In this and other ways medieval serfdom began.

The road to serfdom and economic decline is still paved with oppressive taxation, and until that condition is repaired wealth will still hide or melt away.

References

- Bartlett, Bruce, and Roth, Timothy P., eds. *The Supply-Side Solution*. Chatham, N.J.: Chatham House, 1983.
- DeWulf, Luc. "Economic Reform in China." *Finance and Development* 22 (March 1985): 8–11.
- Durant, Will. *The Life of Greece*. New York: Simon and Schuster, 1939.
- Durant, Will, and Durant, Ariel. *The Lessons of History*. New York: Simon and Schuster, 1968.
- Estrella, Arturo, and Fuhrer, Jeffrey C. "Average Marginal Tax Rates for U.S. Household Interest and Dividend Income." NBER Working Paper No. 1201. Cambridge, Mass.: National Bureau of Economic Research, September 1983.

- Gandhi, Ved P. "Tax Structure for Supply-Side Economics in Developing Countries." Research Paper, Fiscal Affairs Department, International Monetary Fund. Washington, D.C., 11 January 1985.
- Goode, Richard. *Government Finance in Developing Countries*. Washington, D.C.: Brookings Institution, 1983.
- International Monetary Fund. *International Financial Statistics: Supplement on Output Statistics*. Washington, D.C.: IMF, 1984.
- International Monetary Fund. *International Financial Statistics*. Washington, D.C.: IMF, January 1985.
- Jacobsson, Ulf. "Economic Growth in Sweden." *World Economic Growth*. Edited by Arnold Harberger. San Francisco: Institute for Contemporary Studies, 1984.
- King, Mervyn A. "The Taxation of Income from Capital." *NBER [National Bureau of Economic Research] Reporter* (Fall 1983): 8-11.
- Kotlikoff, Laurence J. "The Economic Effects of Government Expenditures." NBER Working Paper No. 964. Cambridge, Mass.: National Bureau of Economic Research, August 1982.
- Lindbeck, Assar. "Budget Expansion and Cost Inflation." *American Economic Review* 73 (May 1983): 285-90.
- Marsden, Keith. *Links between Taxes and Economic Growth: Some Empirical Evidence*. Working Paper no. 605, World Bank. Washington, D.C., 1983.
- Marsden, Keith. "Low Taxes Signal a Healthy Economy." *Wall Street Journal* (18 December 1984): editorial page.
- Meyer, Richard. *Running For Shelter*. Washington, D.C.: Public Citizen, 1985.
- Morgan Guaranty. *World Financial Markets* (December 1984).
- Mundell, Robert A. *The Dollar and the Policy Mix*. Princeton Essays in International Finance. Princeton University, May 1971.
- [OECD]. Organization for Economic Cooperation and Development. *Economic Outlook* (December 1984a).
- [OECD]. Organization for Economic Cooperation and Development. *National Accounts, 1960-83*. Paris: OECD, December 1984b.
- [OECD]. Organization for Economic Cooperation and Development. *Revenue Statistics in OECD Member Countries, 1965-83*. Paris: OECD, July 1984c.
- [OECD]. Organization for Economic Cooperation and Development. *OECD Observer* (September 1985).
- Peek, Joe, and Wilcox, James A. "Taxable and Tax-Exempt Interest Rates: The Role of Personal and Corporate Tax Rates." NBER Working Paper No. 1544. Cambridge, Mass.: National Bureau of Economic Research, January 1985.
- Price Waterhouse. *Individual Taxes*. New York: Price Waterhouse, 1984.
- Protopapadakis, Aris. "Supply-Side Economics: What Chance for Success?" In *The Supply-Side Solution*, pp. 269-85. Edited by Bruce Bartlett and Timothy P. Roth. Chatham, N.J.: Chatham House, 1983.
- Reynolds, Alan. "Individuals and the Tax Question." *Wall Street Journal* (24 October 1980): editorial page.

- Reynolds, Alan. "Less Will Get You More." *Wall Street Journal* (23 January 1985): editorial page.
- Sahling, Leonard, and Akhtar, M. A. "What is Behind the Capital Spending Boom?" Federal Reserve Bank of New York *Quarterly Review* 66 (Winter 1984-85): 19-30.
- Socratic Discourses By Plato and Xenophon*. New York: J. M. Dent, 1910.
- Tanzi, Vito. *The Individual Income Tax and Economic Growth: An International Comparison*. Baltimore: Johns Hopkins University Press, 1969.
- Tanzi, Vito. "The Deficit Experience in Industrial Countries." In *Contemporary Economic Problems*, pp. 81-119. Edited by Philip Cagan. Washington, D.C.: American Enterprise Institute, 1985.
- Tatom, John A. "The 1981 Personal Income Tax Cuts." Federal Reserve Bank of St. Louis *Review* 66 (December 1984): 5-17.
- [Treasury I]. U.S. Department of the Treasury. *Tax Reform for Fairness, Simplicity, and Economic Growth*. Vol. 1. *An Overview*. Washington, D.C.: Government Printing Office, November 1984.
- U.S. Department of Commerce. *International Economic Indicators* (December 1984).
- Wanniski, Jude. *The Way the World Works*. New York: Simon and Schuster, 1983.
- Waud, Roger N. "Tax Aversion, Deficits and the Tax Rate-Tax Revenue Relationship." NBER Working Paper No. 1533. Cambridge, Mass.: National Bureau of Economic Research, January 1985.
- Weisman, Steven R. "India's 'Teji' (Bull) Market." *New York Times* (14 August 1985).
- Wolfowitz, Paul D. "U.S. Encourages Constructive Change in the Philippines." *Wall Street Journal* (15 April 1985).
- Zevallos, Filipe. "Will Peru's Next President Outlast His Image?" *Wall Street Journal* (12 April 1985): editorial page.