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ECONOMIC AND EQUITY ISSUES IN A COMPARISON OF THE PERSONAL INCOME TAX AND THE VALUE-ADDED TAX

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UPON MY HONOR, I have received no unacknowledged aid on this thesis: James Humphreys

CHAPTER ONE

ADMINISTRATIVE PROCEDURES

General Introduction

The economic issues surrounding a tax are normally examined in public finance texts in four categories: administrative procedures, effects on allocational efficiency, macroeconomic stabilization effects, and equity issues. Within each category are procedures and principles by which a tax can be judged to determine if it serves the goals set forth by each category. This paper will evaluate the personal income tax and the value-added tax using tests of public finance theory, and will compare the extent to which they serve its goals.

The first chapter on administrative procedures covers tax base definition, the mechanics of the consumption type value-added tax, excess burden, enforcement, and international trade and border adjustments. The tax which is simpler (cheaper) with regard to each point is judged administratively superior.

Tax Base Definition

The initial hurdle tax authorities must overcome in administering a tax is obtaining a workable definition of the tax base. The personal income tax is intended to tax income;

income must be defined. The value-added tax targets value added for taxation; to determine value added, costs (input, depreciation, and capital expenditure) and revenues must be defined.

Income is defined as the money value of the flow of resources available to a family unit over a specified period of time, usually one year. Defining income in money terms is necessary because the flow of resources may be heterogeneous; money is a standard of value or unit of account, and allows the problem of valuing heterogeneous goods to be overcome.

A problem with defining income, however, stems from valuing income in money terms. The real value of one's income (resource flow) may not change at the same rate as its nominal (money) value. When I refer to the personal income tax, I will be referring to the the United States' personal income tax code for 1985. Changes in the nominal value of income are important because the personal income tax is progressive. If real income is what is supposed to be taxed (and it is, since the income tax code allows for price level change corrections), changes in the price level should not change one's marginal tax rate.

Price indices can be used to correct prices for inflation or deflation. In calculating price indices, price changes are averaged to arrive at a single price change rate. Prices of different goods and services change at different rates in different places; in describing price changes everywhere, price

indices may not describe price changes anywhere. Also, price indices are calculated for a certain basket of goods; that basket of goods may not accurately describe any specific person's purchasing habits. So the use of price indices, while better than no indication at all, may not accurately correct the nominal value of a specific individual's income for price changes to which that particular individual is subject.

Since there are three methods of calculating value added there are three types of value-added taxes: the GNP type, the income type, and the consumption type.[1] The GNP type value-added tax falls on gross product. The income type value-added tax bears on income. And the incidence of the consumption type value-added tax is on consumption spending.

Using the GNP method one simply uses the sum of the prices paid by the last buyers of all consumer and capital goods less the money value of input materials, to determine value added. So. the GNP type value-added tax falls on both capital and consumption expenditures.

Using the income method to calculate net value added, capital expenditure is deducted from income as the firm's capital wears out. Therefore, the income method requires the use of depreciation schedules. Thus, the income type

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1. Richard A. Musgrave and Peggy B. Musgrave, Public Finance in Theory and Practice, 4th ed., (New York: McGraw-Hill, 1984), p. 441-3.

value-added tax is borne by income.

Spreading a cost over the "useful life" of equipment presents some conceptual problems. Costs can be valued in original terms, replacement terms, or adjusted by price indices. Also, accurately reflecting differing conditions in different industries may render the standard forms of depreciation (straight-line, double-rate declining balance, unit charge or sum-of-the-year's digits) inadequate, and may require the formulation of elaborate depreciation schedules.

Using the consumption method to calculate consumption, input and capital expenditures are subtracted from a firm's money revenue; however, capital expenditure is capitalized in the period in which it is made even if the equipment it purchased wears out over a longer period. The calculation of value added, using the consumption method, does not require the use of depreciation. Therefore, the consumption type value-added tax is essentially a consumption tax.

Professors Richard and Peggy Musgrave, who are authorities in the field of public finance, dismiss the GNP method of calculating value added as a viable alternative for administering the value-added tax on grounds of principle, stating simply, ". . . there is nothing to be said for the value-added tax of the GNP type."[2] Also, evaluation of the GNP

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2. Ibid, p. 443.

type value-added tax would be difficult because it is not widely used.

Using the consumption method of calculating value added, input costs and current capital expenditures are completely subtracted from current revenues to determine current consumption. Since consumption is usually recognized as goods and services that are used up in the same period in which they are bought, the consumption method taxes current consumption at current prices. Since current expenditures are not spread over several periods, price indices or some other method of correcting for price changes, are not necessary.

Most countries that have adopted the value-added tax have chosen to use the consumption type value-added tax. Tax authorities' being able to apply the tax without using depreciation schedules or price indices that would be necessitated by the income method, has made the administration of the value-added tax easier, and probably more accurate. Therefore, since existing value-added taxes are of the consumption type, when I refer to the value-added tax, I will be referring to the consumption type. Now comparisons between the personal income tax and the value-added tax can be legitimately made because the considerations will be between two real-world examples.

According to The Economist of London, "The twin advantages of an expenditure tax are that it avoids the difficulty of

attempting to define income (especially hard when inflation is high) and it is based entirely on tangible cash flows."[3] The United States' personal income tax involves the problem of valuing payments-in-kind in money terms if they are to be counted as income. The personal income tax, in 1985, also requires indexing tax brackets for price changes; measuring price changes is problematic. Therefore, the definitions of the variables necessary to calculate value-added seem to be more clear-cut and administratively superior to those of the personal income tax.

The Mechanics of the Consumption Type Value-Added Tax

The value-added tax is paid by each firm in the production process. The tax must be paid based on a firm's total revenues, and operating and investment expenditures. While the accounting principle of specific identity--relating specific costs to the production of specific goods--has some appeal in calculating value added, some costs, like administration, accounting and marketing, do not lend themselves to the application of specific identity, and make use of a firm's aggregated operations more appropriate. Now suppose the value-added tax had replaced the personal income tax. Since the value-added tax is directly

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3. "Britain: Tax Reform Round-Up," The Economist, 3 December 1983, p. 67.

related to production, it affects the rate of return from production; the tax lowers the rate of return. Therefore, the value-added tax adversely affects the supply of taxed goods in their markets. Assuming demand is unaffected by the value-added tax, the prices of the taxed goods rise, as shown in figures 1 (a) and (b).

Of course, the price changes wrought by the value-added tax depend on the competitiveness of the markets for the goods in question. Assuming fairly competitive markets, the value-added tax becomes essentially a cost of production, and should be almost completely, if not completely, reflected in the goods' prices. Therefore, the value-added tax should be shifted completely through the production process and borne almost solely by the ultimate consumer.

The European experience with the value-added tax indicates that the value-added tax does not fall completely on the consumer; in some instances it falls on capital and input expenditures. But the significant deviation of the effects of the value-added tax, as it has been applied in Europe, from its theoretical ideal is caused by differentiated rates, exemptions and the non-deductibility of certain expenses.[4] For example, France's value-added tax does not allow for the deduction of any expenses associated with automobiles. So the value-added tax

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4. Henry J. Aaron, ed., The Value-Added Tax: Lessons from Europe, (Washington: The Brookings Institution, 1981), p. 24.

does partially fall on the capital and input expenditures of travelling salesmen.

Tax Bases: Individuals or Firms

The United States has two forms of income taxation: the personal income tax and the corporate income tax. The personal income tax falls on the persons taxed. Corporations are legal persons; treating a corporation as something distinct from its owners is, from an income tax standpoint, unreasonable, however. Income is always ultimately received by a person; taxes are always ultimately paid by a person. The incidence of the corporate income tax, however, is not clear; it may be paid by its owners, customers, or both.

Income can be earned by a corporation and remain undistributed, which, presently, would not be taxed by the personal income tax. Therefore, probably the only sound economic reason for the existence of the current corporate income tax is to prevent undistributed profits from escaping taxation.

The corporate income tax is untenable on equity or efficiency grounds because the incidence of the tax is uncertain, and the undistributed income it does tax could be taxed just as effectively if modest changes were made to the personal income tax. Professor Milton Friedman "would . . .

[abolish] the corporate income tax . . . with the requirement that corporations be required to attribute their income to stockholders, and that the stockholders be required to include such sums on their tax returns."[5] Currently the structure of the corporate income tax has eliminated the tax liabilities of many profitable corporations. The problem of untaxed retained earnings persists, however.

The continued existence of the corporate income tax is probably due, in most part, to genuine confusion and the political expediency of considering corporations as something distinct from their owners. The value-added tax is usually described as being applicable to firms: a firm buys resources, combines them to form a product and sells the product; the difference between expenditures on capital and intermediate goods, and revenues is the firm's value added, to which the tax is applied. However, individuals are a source of value, too. So recognizing persons as a source of value, France extended the tax base of her value-added tax to include services.

The sum of a firm's owners' value added is a firm's value added, and the value-added tax can be applied to individuals. Certain expenditures made by firms may be in part necessary for the firms' continued operation, and in part consumption. No doubt, industrial equipment to equip a factory is a necessary

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5. Milton Friedman, Capitalism and Freedom, (Chicago: The University of Chicago Press, 1962), p. 174.

cost which does augment a firm's productive capacity, and would be counted completely as investment. Also, a firm's administrators need desks to complete their jobs. However, an administrator's imported, hand-crafted and highly elaborate desk is partly consumption. And the National Geographic a filling station proprietor buys through his business is purely consumption.[6] The fact is, consumption can be buried in a firm's expenses, and should be taxed if consumption is being taxed.

Hiding consumption, in a firm, from the value-added tax, seems analogous to retaining income in a firm to avoid the personal income tax. Therefore, tax authorities could attribute consumption, supported through the firm, to the firm's owners. Tax authorities, if they were to follow Professor Friedman's suggestion and attribute undistributed corporate profits to stockholders, must calculate corporate profits. Likewise, in principle, tax authorities can attribute consumption to a firm's owners; they would calculate how much of a firm's expenditures were consumption expenditures.

Again, the value-added tax is levied on firms because it is politically expedient to consider businesses as something separate from their owners. The value-added tax can be levied on persons by simply subtracting their saving from their

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6. This example is by Bruce H. Herrick.

income. Taxing the owners of firms is equivalent to taxing firms; since persons and firms are both subject to the value-added tax, a firm's owners are subject to double taxation of consumption. Ultimately, only persons can consume, so the value-added tax applied to firms is also untenable on efficiency grounds.

Presently, when considered together, the personal and corporate income taxes require the same kinds of calculations as the value-added tax. With the income taxes, personal income must be calculated and corporate profits must be calculated, and both are then taxed. With the existing value-added taxes, individuals' value added is figured and firms' value-added is figured, and both are subsequently taxed. The income taxes and the value-added tax are administratively complicated because the personal income tax has various deductions, "loop-holes," classifications of income and tax rates, and the value-added tax has exemptions and multiple rates.

The chief advantage of the value-added tax is that only money transactions are considered. Because the value-added tax incorporates rate differentiation among differing economic activities, calculation of the tax base is not simple. However, the personal and corporate income taxes are somewhat less accurate, and harder to administer, because they consider payments-in-kind (non-monetary transactions) in calculating income, and the derivation of the tax base is also complex.

The chief disadvantage of the value-added tax, when applied to firms, is that the owners may be taxed for consumption on the behalf of employees, who may not be owners. For example, suppose the tax authorities decide the expenditures for an elaborately appointed plane a company provides for its president, who is not the sole owner, is not completely necessary for him to carry out his job effectively, and therefore, partly consumption. Part of the cost of the company's plane would be added to the company's tax base. Hence, the owners, who were not the ultimate consumers, bear the tax. If the tax authorities tried to attribute consumption to each employee who benefited from the firm's expenditures, the procedure would highly complicate administration of the value-added tax.

In a generally competitive economy, firms will try to minimize their subsidization of employees' consumption so they can maintain a competitive rate of return. However, the value-added tax applied to firms may even turn its disadvantage to improving firms' efficiencies. If owners must pay a tax for their employees' consumption, perhaps firms will control even more tightly consumption expenditures. More efficient expenditures will improve firms' rates of return, and their ability to attract capital.

Whether the value-added tax is easier to administer than the personal and corporate income taxes is inconclusive.

Basically the same kinds of calculations have to be made to establish the tax bases, but the value-added tax uses strictly monetary transactions, which simplify administration. Even though both taxes have various classifications of income and consumption, respectively, the classifications of the value-added tax complicate its administration more than those of the personal income tax. Henry Aaron of the Brookings Institution explains:

> Defining classes of goods that will be subject to different rates and determining into which class a particular commodity should be placed bedevils taxpayer and administrator alike with exercises in hairsplitting. Moreover, rates must be differentiated only at the retail stage if the effects are to be clearly related to their cause. In short, efforts to improve the distribution of value-added tax burdens by taxing commodities at different rates inevitably complicate administration and compliance and destroy both neutrality and advantages that uniformity may bring.[7]

If redistribution is desired, it can be achieved much more efficiently through transfers than through tax schemes. Differentiated rates, however, make the tax more acceptable politically.

The point of introducing differentiated rates in the value-added tax is to make the tax progressive with regard to consumption, and make the distribution of economic resources more equal. Therefore, the process of increasing distributional equality under the value-added tax would first identify goods

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7. Aaron, VAT: Europe, p. 7.

and services that have high income elasticities of demand--luxuries--and then tax them more heavily than goods and services with low income elasticities of demand--necessities. But for distributional equality to be achieved through taxing goods and services while simultaneously falling equally on those with the same consumption level, everyone's preference schedule must be the same, which is clearly not the case. Different individuals display different priorities with respect to consumption.

Excess Burden

The excess burden of a tax is defined as the value of the welfare loss to society above the revenue generated by the tax. The welfare loss results from a tax's non-neutrality, which causes allocational inefficiency. An excess burden is an unintentional welfare loss caused by a tax. To move toward greater economic efficiency, excess burdens therefore should be reduced.

One cause of excess burden is a complicated tax code. Reductions in real incomes occur when accountants' and lawyers' services are consumed in preparing and adjudicating tax matters. As tax codes get more complicated, there is greater need for specialists to prepare taxes, and there is more room for interpretation and dispute.

The personal income tax with its myriad of deductions, tax shelters, and different classifications of income (earned and unearned) creates an excess burden by skewing resource allocation in favor of tax administration. The value-added tax requires accountants and lawyers to administer it too, and graduated rates add to its excess burden.

If the value-added tax has various classifications of goods and services, and different rates for different classifications, progressivity with respect to consumption can be introduced. Henry Aaron thinks, "[U]se of multiple rates and especially of exemptions complicates administration and distorts consumption in ways that are unlikely to promote economic efficiency."[8] Again, the graduated value-added tax complicates the tax's administration, and creates an excess burden by inefficiently allocating resources toward administration and conflict.

With respect to taxation in general, "[i]t has long been recognized that distortions attributable to taxation tend to increase roughly with the square of the rate of taxation. For this reason, such 'excess burden'--the lost consumer welfare from taxation that exceeds the value of the services that can be purchased with the revenue collected--tend to be greater under progressive than under proportional taxation."[9] Therefore, the

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8. Ibid., p. 9.

9. Ibid., p. 17-8.

relative magnitude of the excess burden created by the administrative procedures of the personal income tax and the value-added tax depends on the degree to which the taxes are graduated. Thus, whether the administrative procedures associated with the value-added tax are more efficient allocationally than those of the progressive personal income tax cannot be stated unequivocally.

Complex procedures are required both by the personal income tax and the graduated value-added tax. The general consensus among tax authorities is that the increased complexity of the graduated value-added tax, necessitated by classifying goods according to their income elasticities of demand, seems to create an excess burden over and above the excess burden of administering the personal income tax. Therefore, the allocational efficiency of administering the personal income tax is superior to that of the graduated value-added tax; the personal income tax has a smaller excess burden than the value-added tax.

Enforcement

Taxes, like any obligation, are unpleasant to pay and encourage some persons and organizations not to comply with the law. Efficiency requires that tax authorities have a substantial degree of ability to administer a tax so that they

can find tax evaders, and deter taxpayers from evasion. However, tax enforcement should not be so complex and thorough that large portions of the revenue collected are consumed to ensure compliance.

To collect the personal income tax, tax authorities use three methods: voluntary compliance, withholding, and auditing. Voluntary compliance relies on individuals keeping records, preparing (or having others prepare) their tax returns according to the tax code, and voluntarily paying their tax liability. Withholding involves the collection of taxes on income from their sources of payment. In other words, employers and financial intermediaries take tax funds out of their payments to employees and investors, respectively, and send them directly to the government. Auditing is the examining of taxpayers' records, by the tax authorities, to ensure that income was not understated, and taxes were not underpaid. Since the advent of computers, and their adoption by tax authorities, auditing has become more efficient and accurate.

Some economists believe the complexity of the personal income tax, and its high marginal tax rates, have led to growth in the so-called "underground economy." The underground economy consists of economic activity conducted strictly in cash or barter, and is marked by the lack of records, so that income taxation can be eluded. Obviously, as the underground economy grows, the effectiveness of the enforcement devices--voluntary

compliance, withholding, and auditing--becomes increasingly impaired. The complexity of the personal income tax lends itself to evasion.

The most common method of calculating the value-added tax, whether differentiated or not, is the "invoice method":

> The check on evasion is an integral part of the [value-added] tax. It is in the interest of every taxpayer to complete a return of his purchases so that credit for the tax content of these can be claimed against his VAT liability. If he omits any purchase, he cannot claim a tax credit on that purchase, therefore his tax liability increases. A taxpayer might be tempted to under-report sales thereby reducing his value added, and, therefore, his tax liability, but if the full statistical information described above were available, he knows that it is possible for the government to add up the purchases of his buyers and thus know his sales. This would be a severe constraint on any under-reporting of sales. . . . If two taxpayers, by collusion, agreed not to invoice a transaction between them, the first party would have paid tax on his purchases which presumably he could claim against his other correctly invoiced sales, therefore he would not lose the advantage. The purchaser would acquire a product which had not been liable to VAT at the previous stage. But when he made his sale, unless it was again by collusion he would have to report it for VAT liability and thereby bear the total burden of his own liability and the previous manufacturer's liability. This is the 'catching up' which makes evasion difficult. . . . In general, it must be clear from the proceeding [sic] discussion that evasion under a general, fully cross-checked, VAT levied with few rates, would be difficult, would be open to considerable government checks, and would require the continued connivance of a large number of persons. The fewer the effective cross-checks, and the more rates of tax used, the less efficient the built-in anti-evasion devices of the VAT. . .[10]

The invoice method can still be used to stem evasion even

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10. Alan A. Tait, Value-Added Tax, (London: McGraw-Hill, 1972), p. 136-137.

with the graduated value-added tax. The complexity of the graduated value-added tax, probably stimulates a larger underground economy among steeply taxed goods and activities than among goods and services taxed at low rates. But the incentive to evade the tax is not powerful; the costs of complying are small for most transactions (a fraction of value added). Evasion requires that value added be under-reported, and few transactions are worth hiding. The European countries that have adopted the value-added tax all have graduated rates and have found the invoice method effective in stemming evasion.[11] Therefore, the graduated value-added tax seems to be superior to the personal income tax in enforcing compliance.

International Trade and Border Adjustments

Since international trade is an increasingly important component of the national income accounts, the effects of taxes on transactions multiply. Different countries tax transactions in different ways. The international variety of taxes on transactions can have a profound impact on international trade by changing costs, changing comparative advantages, and distorting allocational efficiency among countries. Where taxes distort trade, border adjustments must be made to correct for

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11. Musgrave and Musgrave, Public Finance, p. 444.

the taxes' effect on the competitiveness of goods and services entering international trade.

The effects of the personal income tax on international trade are probably minimal. Large differences in marginal tax rates between countries in which income earning possibilities are similar may add to the so-called "brain drain." But since the personal income tax does not change the relative prices of comparable goods in international trade, it does not change comparative advantages, distort allocational efficiency, or favor imports over exports or vice versa.

The value-added tax, on the other hand, does affect relative prices between countries. The value-added tax, which falls on consumption, raises the prices of goods and services in the country in which they are produced. However, other countries which are trading partners may not tax consumption, or may tax consumption at different rates. Therefore, the prices of the goods and services that enter international trade should be corrected so that imports and import-competing goods, and exports and export-competing goods, reflect taxes equally; in that way, price signals will lead to maximum efficiency in world-wide production and trade.

Border adjustments can be made fairly easily and unambiguously with the value-added tax. For goods and services that are being imported, and supposedly have not been subjected to a tax, the tax authorities simply levy the tax on the import

price at the appropriate rate. For goods and services that are being exported, the tax authorities simply rebate the tax, which is fully reflected in the export's price, to the foreign buyer. The amount of the rebate is easily determined; differentiation is supposed to occur at the retail level, so tax authorities should know how much the prices of goods and services reflect the tax.

Border adjustments must necessarily accompany the value-added tax in order to maintain effective international competition. The personal income tax does not significantly affect international trade; it does not require border adjustments. So regardless of how easily tax authorities can administer the border adjustments associated with the value-added tax, the personal income tax, with respect to international trade, is administratively superior to the value-added tax, because it requires no border adjustments at all.

Summary

A tax whose complexity renders its administration difficult (expensive) is unattractive as a fiscal instrument when compared with a simple tax, ceteris paribus. Therefore, the flow concept of income is superior to the accretion-of-wealth concept of income when applied to the personal income tax. And the

consumption method of calculating value added is better than the income method with respect to the value-added tax. The personal income tax creates a smaller excess burden than the consumption type value-added tax. The value-added tax ensures compliance better than the personal income tax. And the border adjustments necessitated by the value-added tax with respect to international trade makes the personal income tax administratively superior because it requires none.

CHAPTER TWO

ALLOCATIONAL EFFICIENCY

Introduction

In this chapter on allocational efficiency the personal income tax and the value-added tax will be evaluated using various standards: the role of the public sector and its revenue needs; tax neutrality; entrepreneurs versus corporations bureaucracies; the income and substitution effects: work versus leisure, and saving versus consumption; the diminishing marginal utility of income; and investment productivity and its rate of return. The tax which encourages the more productive use of resources is allocationally more efficient.

The Role of the Public Sector and Its Revenue Needs

The United States has a private sector bias. We rely mainly on the operation of competitive markets to allocate resources. However, there are markets in which the allocational process will not work well if they are left alone. When market imperfections exist and externalities characterize the allocational process, modern public finance theory suggests that public sector measures to eliminate externalities can be appropriate. The government's responsibility, therefore, is to ensure that both the costs and benefits of engaging in economic activities fall on those that sponsor them.

To provide the public sector with the resources it needs to carry out its appropriate functions, the government must be able to raise revenue. The public sector of the United States consumes about one-fourth of the gross national product. So, the taxes that the government uses to finance its projects must be capable of raising large amounts of revenue.

The resources that the public sector uses must come mainly from the private sector of the economy. According to traditional fiscal principles, allocational efficiency is served by taxes that are neutral--that is, taxes that do not change the market decisions of those seeking to maximize satisfaction or profit. Taxes should therefore be neutral so that competitive markets are not perverted.

The personal income tax has proven to be a large source of revenue. In 1979, forty-nine percent of all federal revenues were raised by personal income taxation, and thirty-seven percent of the revenue at all levels of government in the United States came from personal income taxation.[1] Therefore, The personal income tax is a good source of revenue for the public sector.

In the European Economic Community, the value-added tax has provided substantial revenue. In 1979, the value-added tax was most important to France, which raised forty-nine percent of its

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1. Bernard P. Herber, Modern Public Finance, 5th ed., (Homewood, Illinois: Richard D. Irwin, Inc., 1983), p. 318.

total revenue with it. Italy collected about seventeen percent of its revenue, and Sweden, about thirteen percent of its revenue from value-added taxation.[2]

The value-added tax was somewhat sluggishly adopted and timidly implemented in several European countries. However, France, in making the value-added tax its primary source of revenue, has demonstrated that both the value-added tax and the personal income tax can be effective in providing the public sector with the resources it needs.

Tax Neutrality

The personal income tax and the value-added tax (applicable to the sales of all goods and services without differentiated rates) are equally neutral; neither changes relative prices.

The personal income tax lowers one's disposable income, but does not change the points of optimal consumption, as illustrated in Figure 2. The individual's real budget line B/P is the money value of his budget B divided by the price level P. B_1/P simply makes a parallel shift to a lower real budget line B_2/P, where B_1 is greater than B_2 and P is fixed. By

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2. The revenue statistics in the above paragraph were derived from revenue figures in Henry J. Aaron, ed., The Value-Added Tax: Lessons from Europe, The Brookings Institution, Washington, 1981.

definition, no substitution effect is involved because the price ratios remain the same. The personal income tax is neutral because its implementation does not cause the substitution effect.

The value-added tax, with uniform rates, is also neutral because it does not change price ratios. The value-added tax, when applied to all goods and services, has a similar effect on all prices; it raises them by equiproportional amounts. Thus, the value-added tax only causes a parallel shift in the budget line; a price rise from P_1 to P_2 causes the real value of the budget to decline from B/P_1 to B/P_2 where B is fixed, as shown in Figure 3. Like the personal income tax, the value-added tax is neutral because its use does not cause the substitution effect.

Unfortunately, despite the suggestion of the European Economic Community that the value-added tax should be implemented with uniform rates and without exemptions, the existing versions have multiple rates, and many economic activities are exempt. The value-added taxes have therefore changed price ratios and introduced the substitution effect. Thus, the value-added tax with multiple rates and exemptions is non-neutral, as shown in Figure 4. If B is fixed and P_2 is greater than P_1, the individual's new real budget line B/P_2 does not shift down parallel to the original budget line B/P_1.

Therefore, the substitution effect causes the point of optimal consumption to change from point A to point B, where line B_S, which is parallel to budget line B/P_2, is tangent to indifference curve I_2.

Even though the pure value-added tax is neutral, the versions that exist today are not. So, in practice, the personal income tax seems to be superior to the value-added tax in not distorting the behavior of satisfaction-maximizing consumers and profit-maximizing businesses.

Entrepreneurs versus Corporations Bureaucracies

The entrepreneur is essential to capitalism because he is its main channel of innovation. The entrepreneurial function was described by Joseph Schumpeter:

> [T]he function of entrepreneurs is to reform or revolutionize the pattern of production by exploiting an invention or, more generally, an untried technological possibility for producing a new commodity or producing an old one in a new way, by opening up a new source of supply of materials or a new outlet for products, by reorganizing an industry and so on. . . . To act with the confidence beyond the range of familiar beacons and to overcome that resistance requires attitudes that are present in only a small fraction of the population and that define the entrepreneurial type as well as the entrepreneurial function. This function does not essentially consist in

> either inventing anything or otherwise creating the conditions which enterprise exploits. It consists in getting things done.[3]

Large public corporations and their bureaucracies play a role in capitalism, too. Corporate bureaucracies are mainly administrative, taking innovations and disseminating them. Economist Burton Klein writes:

> . . . advances will seldom come from major firms in an industry. In fact, of some fifty inventions . . . I could find no case in which the advance in question came from a major firm in the industry. In some cases (Bessemer steel, the electric steel process, jet engines, the Polaroid Land Camera) the inventions came from newly established firms.[4]

So, with respect to the key inventions studied, entrepreneurs, rather than established corporations, were the source of creativity. Corporate bureaucracies respond to proven patterns of success; they could even be described as reactionary. So, just as organized religious institutions preserve the charismatic experiences that give religion its life, large administrative organizations preserve entrepreneurial innovations, which otherwise might just be flashes-in-the-pan.

Since entrepreneurs and bureaucratic corporations both play important roles in capitalism, the allocation of resources among them should not be biased by the tax system. If too many

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3. Joseph A. Schumpeter, Capitalism, Socialism and Democracy, 3rd ed., (New York: Harper & Row, 1950), p. 132.

4. Burton H. Klein, Dynamic Economics, (Cambridge, Massachusetts: Harvard University Press, 1977), p. 17.

resources are put at the disposal of entrepreneurs, innovation will be quite healthy, but resources will be lacking to further develop successful innovations. If conversely, too many resources are made available to established corporations, administrative tasks will be carried out quite efficiently, while the supply and successful introduction of innovations will dwindle.

No operational test exists that can determine the proper proportions of resources that should be distributed among corporations and entrepreneurs. In fact the proportion might change over time. However, taxes that affect the rate of return of different forms of business organization change the resource allocation among them. Therefore, resource allocation among large bureaucratic corporations and entrepreneurships, if it is to be optimal, should rely on the rate of return determined by competitive markets that lack externalities; taxes should not change the rates of return of different forms of business organization.

Thus, a correctly functioning capitalist economy should have a proper balance in the allocation of private resources between entrepreneurs and public corporations. If too many resources are in the hands of entrepreneurs, development of goods with effective demand will be inadequate. If too many resources are in the hands of established corporations, capitalism will stagnate.

The present personal income tax gives preferential treatment to income realized from capital gains; capital gains are taxed at a lower rate than ordinarily "earned" income. When presented with investment opportunities, the favorable taxation of capital gains biases profits toward retained earnings rather than distribution as dividends. Stanford Professor Milton Friedman writes, "Even if the return that can be earned internally is appreciably less than the return that the stockholder himself could earn by investing the funds externally, it may pay to invest internally because of the tax saving."[5] Therefore, tax considerations affect the division of profits between retained earnings and dividends, favoring retained earnings and corporate conglomeration. To the degree that capital gains taxation causes earnings to be retained in less efficient enterprises, resources are misallocated and public corporations are larger than optimum size. Professor Friedman maintains, "This leads to a waste of capital, to its use for less productive rather than more productive purposes. It has been a major reason for the post-World-War-II tendency toward horizontal diversification as firms have sought outlets for their earnings."[6]

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5. Milton Friedman, Capitalism and Freedom,(Chicago: The University of Chicago Press, 1962), p. 130.

6. Ibid.

The value-added tax is imposed on the incremental increase in value at each step of the production process. Value can increase through direct effort, in producing final goods; through improvement to existing capital; or through capital gains because assets were held through a period of rising prices. Therefore, the value-added tax puts the use of resources, regardless of how they were derived, on an equal footing. Now suppose the value-added tax had replaced the the personal income tax. Since the existing value-added taxes do not give capital gains special treatment, corporations would pay out more of their earnings in dividends to their stockholders. The value-added tax as it exists does not inhibit dividend payments, and allows all investments to be evaluated on their relative potential pre-tax returns. Since the true efficiencies of investments can be compared, the value-added tax is more likely to allocate resources efficiently between entrepreneurs and bureaucratic corporations, than does the personal income tax.

The present personal income tax and the value-added tax have different effects on the allocation of resources in the private sector. The present personal income tax, with its advantageous treatment of capital gains, tends to distort the allocation of private resources by encouraging inefficient investments to be made. The value-added tax, however, encourages allocational efficiency in the private sector by

encouraging investment comparisons to be made strictly on their pre-tax rate of return.

The Income and Substitution Effects: Work versus Leisure

The personal income tax and the value-added tax both exert income and substitution effects on work with respect to leisure. Also, the income and substitution effects can act in concert or in opposition to one another.

The present personal income tax has a progressive rate schedule. The progressive rates could, in theory, have three possible influences on work effort. If one is goal-oriented and will do whatever is necessary to be able to buy something he especially wants, taxing his income, particularly progressively, is likely to raise his work effort. If one's work habits are determined institutionally, and he has few options for additional vacations or over-time, progressively taxing his income is not likely to change his relative preferences for work and leisure. And finally, if one highly values his leisure time, progressively taxing his income is likely to frustrate the taxpayer, especially at high marginal rates, and encourage him to work less; the marginal work effort would not be worth the marginal return. This, of course, is the source of the backward-bending supply curve for labor.

The existing value-added taxes are regressive with respect

to income. Also, the value-added tax will have essentially the same effect as a retail-level sales tax. The value-added tax is likely to reduce the work effort of the goal-oriented, especially at high incomes, because as one's income rises, his marginal tax rate falls as consumption expenditures form a lower proportion of total income; relative to the personal income tax the value-added tax makes less work necessary in obtaining one's goals, described by Figure 5. The value-added tax is, again, unlikely to cause a change in the work effort of those whose work habits are set institutionally, illustrated in Figure 6. Figure 7 shows the value-added tax is likely to increase the work effort of those whose leisure time is very valuable to them, because the return from marginal work effort is higher.

The economy-wide effects of the income and substitution effects of the personal income tax and the value-added tax cannot be conclusively stated when individuals of all tastes are considered. Unfortunately, utility cannot be measured cardinally, so the conclusion one draws about the changes in work effort induced by the personal income tax and the value-added tax must be based solely on one's assumptions about the economy-wide shapes of individual indifference curves with respect to work and leisure. In judging the personal income tax and the value-added tax, theoretically, both taxes can be shown capable of adversely or favorably affecting work effort. So, a recommendation about which tax results in more productive effort

cannot be drawn.

The Income and Substitution Effects:

Saving versus Consumption

The personal income tax and the value-added tax both exert an income effect and a substitution effect with respect to saving and consumption. The natures of the two taxes differ, however. The personal income tax raises the cost of saving with respect to the cost of consuming: "A wedge is driven between the return the savings generate and the after-tax return to the saver."[7] Since the personal income tax falls on the interest from saving, a differential is introduced between the return from saving and the "return" from (untaxed) consumption. In other words, the personal income tax encourages consumption at the expense of saving. On the other hand, with the value-added tax, essentially consumption is taxed. Therefore, the value-added tax raises the cost of consuming relative to saving.

Any tax will remove from the private sector real resources that would have gone to private consumption and saving. But a tax can change the relative attractiveness of consumption and

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7. "Britain: The Case for Tax Reform," The Economist, 17 September 1983, p. 44.

saving.

To express exactly how taxes bear on consumption and saving, one would have to know the shapes of persons' indifference curves with respect to saving and consumption. Unfortunately we have no way of cardinally measuring utility, so we have no way of knowing the exact shapes of any indifference curves.

Some generalities, however, can be drawn about the influences of the personal income tax on consumption and saving. Consumption and saving can both be considered normal goods--goods on which the income effect is positive. Also, as one's income and wealth increase, his average propensity to save tends to increase.

The personal income tax changes the effective price ratios between consumption and saving; the price of saving rises with respect to consuming. So, the personal income tax causes saving to fall relatively more than consumption. In fact, Lewis Kimmel of the Brookings Institution says, "A large portion of federal personal income taxes is paid by those on whom the economy primarily depends for money saving."[8]

Similar generalizations can be drawn about the effects of the value-added tax on consumption and saving. The value-added tax, like the personal income tax, changes the price ratios

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8. Lewis H. Kimmel, Taxes and Economic Incentives, (Washington: The Brookings Institution, 1950), p. 77

between consuming and saving. However, the price ratio changes induced by the value-added tax favors saving over consumption. So, the value-added tax seems to cause declines in saving that are relatively less than the declines in consumption it causes.

Presently, a dearth of modern equipment and technology seems to be one of the elements that caused to the stagflation of the 1970s, and is contributing to the lethargic conditions of many of America's "smoke-stack" industries. To be internationally competitive, industries must modernize. But modernization requires resources--resources that must be saved.

Economist Lester Thurow said, in 1983 personal saving was 3.3 percent of gross national product and the federal deficit (which represents public consumption) was 5.7 percent of gross national product. The economy-wide net federal- plus personal-saving rate was a negative 2.4 percent of gross national product. Therefore, the public deficit was consuming the equivalent of all personal saving, plus large portions of other forms of saving (depreciation, corporate saving and foreign saving). Also, consumer credit amounted to sixty-six percent of personal saving.[9]

An economy that consumes most of its savings, apparently, is misallocating resources if efficiency is measured in terms of growth rates. Not only can a country that has low saving rates

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9. This paragraph drew heavily on the article by Lester Thurow, "Where Credit Is Not Due," Newsweek, 21 November 1983, p. 82.

not maintain its standard of living, the expiration of its capital, which it cannot replace, will lead to a decline in its future standard of living. "Thus," according to Professor Thurow, "if we are serious about the need for more saving, we will have to start talking seriously about . . . more consumer taxes."[10] Therefore, the value-added tax would seem to allocate resources more efficiently than the personal income tax, given industry's present shortage of expansion capital.

The Diminishing Marginal Utility of Income

Most economists agree that the marginal utility of income diminishes as income rises. The degree to which additional income augments one's total utility varies from person to person. One may feel his income is so high additional income is not worth the effort to make it. On the other hand, a very highly paid individual may want to work very hard for additional income. The University of California's Professor Richard A. Musgrave said, "Rising needs develop with rising income, and a person's marginal income utility is said to shift upward as his income rises."[11] Unfortunately, we have no way of knowing

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10. Ibid.

11. Richard A. Musgrave, The Theory of Public Finance, (New York: McGraw-Hill Book Company, Inc., 1959), p. 103.

exactly what anyone's preference schedule is, so we cannot predict precisely one's reaction to changes in income. However, some qualitative conclusions about how the two taxes interact with the marginal utility of income can be drawn.

With respect only to allocational efficiency, the object of a tax should be to promote productive work effort. To the degree that productive work effort is widespread, allocational efficiency is served.

Income and the ownership of physical, financial, and human capital are highly correlated. Income is not necessarily something one can choose to have; some are unable to generate income regardless of their efforts. However, the opportunity for additional income is usually an invitation for taxpayers to work harder.

According to conventional microeconomic analysis, satisfaction is maximized when the marginal utility associated with a good is equal to the marginal cost (disutility) of getting it. So, the utility maximizer will work to earn income until the marginal utility of income is equal to the marginal cost of income--the marginal utility of forgone leisure, separation from one's family, or the physical discomforts of the job. The marginal cost, or disutility, of earning income rises. As one spends more time working to earn income, the time he could have spent engaging in more pleasurable activities becomes dearer. The progressive personal income tax and the

value-added tax have effects on the point of maximum satisfaction, with regard to earning income, and the incentives to work.

Under a progressive personal income tax, additional increments of income are taxed at consecutively higher rates. The marginal utility of income diminishes as income grows whether it is taxed or not. Since the personal income tax falls on income progressively, it causes the marginal utility of pre-tax income to diminish even more rapidly than if it were not taxed at all, which is illustrated by functions MU_0 (marginal utility of untaxed income) and MU_2 (marginal utility of progressively taxed, pre-tax income) in Figure 8.

Statically, the marginal cost of earning income functions, MC_0 and MC_1, in Figure 8, are determined by a given level of capital formation (physical and human). MC_0 indicates a low level of capital formation and productivity. MC_1 illustrates a high level of capital formation and productivity. So dynamically, one's marginal cost of earning income function can change as one increases his capital stock and becomes more productive.

For any given level of capital stock, diminution of the marginal utility of pre-tax income causes the marginal utility of pre-tax income to equal the marginal cost of earning income at a lower level of pre-tax income than if there were no tax,

shown by comparing points A_0 and A_1 (pre-tax income under progressive taxation) and points C_0 and C_1 (untaxed income) in Figure 8. So, the progressive personal income tax increasingly discourages the earning of income at every level of income because it increasingly lowers the marginal utility of pre-tax income at every level of income, demonstrated by the widening difference between the MU_0 function and the MU_2 function in Figure 8.

The value-added tax tends to be regressive with respect to income. So, under the value-added tax, beyond some income, OE in Figure 8, as one's income grows, the marginal utility of pre-tax income does not diminish as rapidly as the marginal utility of pre-tax income does subject to the personal income tax. Therefore, the differential between the marginal utility of pre-tax income under the value-added tax and the marginal utility of income subject to no tax gets smaller as income rises, as illustrated by the shrinking difference between the MU_0 function and the MU_1 function in Figure 8. In fact, eventually MU_1 becomes asymptotic to MU_0, as smaller portions of income increases are consumed.

By sharply decreasing the marginal utility of pre-tax income for persons of low income, the regressiveness of the value-added tax causes the marginal utility of pre-tax income to equal the marginal cost of earning income at a lower level of

pre-tax income than does the progressive personal income tax, as shown by points A_0 (pre-tax income under progressive taxation) and B_0 (pre-tax income under regressive taxation) when MC_0 (the marginal costs of one whose productivity is low) is the relevant cost curve. Also, by mitigating the diminution of the marginal utility of pre-tax income, for persons of high productivity, the value-added tax causes the marginal utility of pre-tax income to be equal to the marginal cost of earning income at a higher level of pre-tax income than the progressive personal income tax, which can be seen by comparing point A_1 (pre-tax income under progressive taxation) and point B_1 (pre-tax income under regressive taxation) when they interact with MC_1 (the marginal costs of the highly productive).

In the static model in the OE income region in Figure 8, the personal income tax encourages work effort relative to the value-added tax by offering a higher level of marginal utility of pre-tax income. Above income OE, however, the value-added tax seems to encourage work effort, relative to the personal income tax by increasingly closing the gap between the marginal utility of untaxed income and the marginal utility of pre-tax income, as income rises.

There is a region of income, OE in Figure 8, in which the marginal utility of pre-tax income subject to the personal income tax is greater than the marginal utility of pre-tax

income subject to the value-added tax, where function MU_2 is above function MU_1. When an income is in region OE, one might conclude that the progressive personal income tax encourages work effort, which seems reasonable. When viewed dynamically, a utility-maximizing taxpayer is generally aware of the pattern with which his marginal tax rate changes as his pre-tax income changes. Under the progressive personal income tax, regardless of one's income level, he knows he can never lower his marginal tax rate as long as his income rises. Therefore, one's incentive to form capital, and move his marginal cost curve to the right, from MC_0 to MC_1, is increasingly diminished by the progressive personal income tax at all levels of income. So in the dynamic model, by discouraging capital formation, and lowering the points of marginal utility and marginal cost of income equality, the personal income tax lowers work effort.

Under the value-added tax, one knows he can tend to lower his marginal tax rate by earning more income. In fact, as one earns more income, his marginal utility from pre-tax income can approach the marginal utility of income that is not taxed at all. So, the incentive offered by a declining marginal tax rate in the dynamic model results in the value-added tax's encouraging capital formation--and eventually raising work effort--relative to the personal income tax, at every level of income.

Analysis of the effects of the personal income tax and the

value-added tax on the marginal utility of income would seem to indicate that in the static model, at low incomes the personal income tax increases work effort, and at high incomes discourages work effort, relative to the value-added tax. Also, in the dynamic model, the value-added tax is superior to the personal income tax in encouraging capital formation and work effort. According to Lewis Kimmel, "The goal should be a tax system with the minimum of impingement on enterprise . . . that is compatible with raising the necessary revenues. In the long run such a tax policy would greatly facilitate the raising of revenues."[12] Since I prefer to view the economy dynamically, the value-added tax seems to be more allocationally efficient than the personal income tax.

Investment Productivity and Its Rate of Return

No doubt, a healthy economy should generate investment. Research, development, and risk-taking are key elements in a growing and dynamic economy. However, large quantities of investments, by themselves, are insufficient to ensure that the economy grows rapidly or adjusts to changing circumstances.

The quality of investments determines, to a large degree, the development of an economy. Indeed, investment in the

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12. Kimmel, Taxes and Incentives, p. 108.

production of unwanted goods and services is not really investment. The effects of a tax, therefore, should not be to skew the allocation of private resources toward unproductive investment--that is, investment whose rate of return is so low that it would not be undertaken in a competitive situation. When resources are skewed toward unproductive investments the ability to undertake efficient and productive investments is lessened; to the degree that resources are misallocated, the economy appears to stagnate.

In the United States, the present personal income tax has been modified to offer opportunities to shelter income from taxation by giving tax breaks on various types of investments. The federal government has offered preferential tax treatment to encourage energy exploration, and research and development, which give investors reduced risk. But investments that pose little risk rarely have high rates of return--that is, they are less productive. Tax shelters have encouraged the drilling of wells, and the mining of mines that no one really expected to yield a competitive return without the loop-holes. The Economist discussed the effects of tax shelters: "[T]ax breaks . . . have encouraged people to save in ways that may not be doing the most economic good. With high marginal tax rates, savings favoured by the taxman often offer the highest post-tax returns

even though, pre-tax, they may be producing very low rates of return."[13] The tax shelters that the progressive personal income tax offers misallocate the private resources they attract.

The tax shelters to which the personal income tax has given rise also misallocates resources in an indirect fashion. The personal income tax is highly complicated and riddled with "loop-holes." The complicated nature of the personal income tax supports a tax avoidance industry. Lawyers, accountants and brokers spend their time instructing those who are productive on how to arrange their assets, restructure their enterprises and manipulate their incomes to lower their tax liability. Aside from encouraging entrepreneurs to preserve income rather than produce it, the men and materiel of the tax avoidance industry could be used to make a positive contribution by increasing the resources desired by society. So, to the extent that the personal income tax's sheltering schemes have created a tax avoidance industry, it has further misallocated resources from productive to unproductive activities.

With the existing value-added taxes, investments are picked based solely on their post-tax return. In a neoclassical world, investment's pre-tax return is a much better indication of where society's private resources need to be allocated. With the

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13. "Britain: The Case for Tax Reform," The Economist, 17 September 1983, p. 44.

value-added tax, the pre- and post-tax returns of an investment are the same; the value-added tax falls essentially on consumption, not income. With the personal income tax, the relationship between pre- and post-tax return can be distorted; post-tax return can be manipulated so that it does not behave as pre-tax return does in attracting resources. So, the value-added tax appears to allocate private resources more efficiently than the personal income tax.

Summary

The public sector needs resources to perform its functions, which include eliminating externalities. The personal income tax and the value-added tax are both good sources of revenue.

The personal income tax is neutral, and the value-added tax is not. Therefore, the personal income tax is allocationally superior to the value-added tax. Features of the personal income tax change the rates of return among different forms of business organization; they inefficiently skew resources toward retained earnings in bureaucratic corporations and away from entrepreneurships.

The personal income tax and the value-added tax exert income and substitution effects with respect to work and leisure, and saving and consumption. Theory cannot predict the effect of the taxes on work and leisure. However, the personal

income tax falls relatively more on saving, and the value-added tax is borne more by consumption.

Statically, at low incomes, the personal income tax encourages work effort relative to the value-added tax. At high incomes, the converse is true. Dynamically, however, the regressiveness of the value-added tax encourages increased productivity at all income levels.

The personal income tax changes the relationship between pre- and post-tax rates of return, causing misallocation of resources. The value-added tax allows the equation of pre- and post-tax rates of return and results in a more efficient allocation of investment funds than the personal income tax.

CHAPTER THREE

MACROECONOMIC STABILIZATION

Introduction

This chapter on macroeconomic stabilization compares the personal income tax and the value-added tax on the following points: counter-cyclical effects in response to aggregate demand and aggregate supply problems; cost-push inflation; roles in the Keynesian, monetarist, and supply-side models; development; and the standard of living. The tax whose effects are superior with respect to the points above is the better stabilizer.

Unemployment and Price Stability

Two macroeconomic variables that economists scrutinize closely are the unemployment rate and the inflation rate. Sound economic policy dictates that cyclical unemployment--unemployment caused by a momentary insufficiency of aggregate demand--should be minimized because it is a permanent waste of resources; the potential productive capacity that the unemployed do not utilize cannot be stored for later use. Sound economic policy also dictates that the over-all price level should be stable. If the price level is unstable, prices can become distorted and their value in indicating the relative scarcity of resources is less reliable.

A tax can operate in two different ways: it can have an effect on the direction of the economy when employment or price level changes are a problem, or it can have an effect on the stability of the equilibrium of the economy when employment and price level changes are not a problem. When employment and price stability are problems, one would hope that a tax would act counter-cyclically, helping to mitigate the effects of suboptimal employment and price changes. Also, when the economy is at full employment and prices are stable, one would hope that the tax would solidify the economy's equilibrium.

The personal income tax has been described as an automatic stabilizer--a restraint on booms and a stimulus during busts which requires no new policy action. Also, the value-added tax has features that automatically stabilize the economy. When the economy is growing rapidly and inflation is threatening, consumption is generally expanding rapidly too. Since the existing value-added taxes (with differentiated rates) fall mainly, if not completely, on consumption, as consumption expands during a boom, tax collections grow progressively. The growing revenues generated by the value-added tax restrain the growing aggregate demand generated by rapidly growing output, and moderate its inflationary pressures. And the value-added tax acts conversely, in a recession.

Both the personal income tax and the value-added tax are automatic stablizers; both temper the evils of high inflation,

associated with expansions, and high unemployment, associated with recessions. Both the personal income tax and the value-added tax seem to be good automatic stabilizers because they are progressive (the personal income tax is progressive with respect to income, and the value-added tax is progressive regarding consumption). As income grows in an expansion, taxpayers are pushed into higher tax brackets with the personal income tax. As a result, tax revenues grow faster than income, and the growth in aggregate demand is increasingly slowed, slowing inflation. As income drops in a recession, taxpayers drop into lower tax brackets with the personal income tax, and the fall in aggregate demand is incrementally diminished, slowing the deterioration in employment. Since a European-style value-added tax would act progressively on consumption as the income elasticities of demand of the goods and services in question grow, its counter-cyclical effects on aggregate demand, and inflation and unemployment, can be as strong as those of the personal income tax.

Stagflation

In the previous paragraphs, it was implicitly assumed that inflation and unemployment precluded one another. But, as in the United States in the 1970s, inflation and unemployment can coexist. In fact, coexistent inflation and

unemployment--sometimes called "stagflation"--was not a product of aggregate demand problems. Aggregate demand problems allow us to view inflation and unemployment as being mutually exclusive. Stagflation, however, resulted from supply problems.

Crop failures and the Organization of Petroleum Exporting Countries' oil embargo in the early 1970s caused sharp increases in inflation and unemployment as aggregate supply fell from AS_0 to AS_1, shown by Figure 9. In the United States, national income fell from y_0 in 1973, which was about 1.25 trillion 1972 dollars, to y_1 in 1975, which was about 1.15 trillion 1972 dollars, and inflation grew from about 3.5 percent annually to about 11.5 percent. Simultaneously, the unemployment rate rose from about 5.5 percent to about 8.5 percent.

As shown in chapter 2, the personal income tax favors consumption over saving and investment. Also, at lower incomes the average propensity to consume is greater than at higher incomes. So, when aggregate supply decreases are causing both inflation and unemployment, the progressive aspect of the personal income tax seems to aggravate the supply problem by increasingly encouraging consumption (which wears out capital) over saving (which feeds capital formation and augments output). Therefore, the personal income tax does not appear to function as well as an automatic stabilizer when the economy is

mired in stagflation than it does when aggregate demand is a problem. In fact, the personal income tax seems to depress aggregate supply regardless of the condition of the economy.

The existing value-added taxes, on the other hand, favor saving and investment over consumption. So, as inflation and unemployment grow because of falling aggregate supply, the value-added tax helps off set the growing propensities to consume that accompany falling incomes. According to The Economist: "As for the poor person living off his savings, he would find it easier to save in the first place under an expenditure tax, since saving would be put aside out of untaxed income."[1] By making saving and investing more attractive than does the personal income tax during periods of stagflation, the value-added tax helps to countervail against any fall in aggregate supply. In fact, the value-added tax seems to have a positive impact on aggregate supply at any level of price or employment, and therefore, acts counter-cyclically.

The Value-Added Tax and Cost-Push Inflation

According to Professor Richard Lindholm, of the University of Oregon, "At its inception, VAT was seen as a tax on all production, which means a tax that becomes a part of the cost of

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1. "Britain: Tax Reform Round-Up," The Economist, 3 December 1983, p. 68.

all consumption of goods and services purchased in the market."[2] Therefore, the value-added tax would have an initial once-and-for-all effect of raising the price of all final goods and services by the amount of the tax collected through the production process. The personal income tax is not so directly related to prices. So, since the value-added tax has a one-time upward effect on prices, the question has been raised: Is the value-added tax, itself, inflationary?

Professor Alan Tait of. the University of Strathclyde describes the relation of the value-added tax to inflation:

> Data on prices in theory show the effects of the introduction of a VAT in four ways: 1. There may be a single upward shift in the consumer price index clearly associated with the period when the tax was introduced, but with an unchanged, or little changed rate of increase in prices, if the tax increases government revenue and if the traders pass forward the increase. This is called the shift case. If inflation is defined as a continuing general increase in prices, the tax that results in a once and for all price change cannot be inflationary by itself. 2. There may be an increase in the rate of change of the index as a result of the introduction of the tax. This is called the acceleration case. 3. The acceleration may be combined with a shift in the overall price level. This is referred to as the shift plus acceleration case. 4. There may be no discernible effects at all, if the tax substitutes perfectly for the one it replaces or if the authorities can offset any accompanying pressures to increase prices.[3]

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2. Richard W. Lindholm, The Economics of VAT, (Lexington, Massachusetts: D. C. Heath and Co., 1980), p. 24.

3. Alan Tait, "Is the Introduction of a Value-Added Tax Inflationary?" Finance and Development, 18(2) (June 1981): 38.

The greatest fear about the value-added tax's being inflationary is that it would ignite the wage-price spiral and result in cost-push inflation. Firms' passing on the value-added tax to consumers would make workers feel they deserve a cost-of-living increase; the increase would again result in increased costs to firms, which would try to pass on the additional costs by raising prices. Professor Tait suggests that in practice, however, the fears of the value-added tax seem to be unrealized:

> After considering the circumstances of each country in detail, in 21 of the 31 countries where the effects of introducing a VAT on prices were evaluated, no major impact could be identified. That is, in 68 percent of the countries the introduction of the VAT can be said to have had little or no effect on prices. In four countries, the VAT could have contributed to an increase in the rate of inflation--although this was associated in each case with expansionary wage and credit policies. In six countries, (19 percent of the total) the introduction of the VAT is associated with a highly defined once-and-for-all shift in prices, but in only one of these countries (Norway) could this be said to have contributed to an acceleration in the rate of inflation. Clearly it is possible to introduce VAT (sometimes even to increase revenues) without shifting, or increasing the rate of change of, prices. If anything, the assumption should be that an equal-yield VAT substitution will have no effect on the rate of change of prices and that even if an increased yield is derived and prices increase, it will not necessarily accelerate inflation.[4]

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4. Ibid, p. 42.

The Keynesian Model

The Keynesian model is a demand-driven system. Output, for Keynesians, is regulated by demand, and the Keynesian equilibrium output exists as total leakages from the spending stream equal total injections. Leakages are generated by four sectors in the economy: consumer spending, saving, taxing and unrequited foreign transfers. Injections are also made up of four components: consumer spending, investment expenditure, government expenditure on final goods and services, and net exports. Since consumer spending is part of both the leakages and the injections, equating them requires only that the sum of saving, taxing and unrequited foreign transfers be the same as the sum of investment, government spending and net exports--which is the Keynesian equilibrium condition.

Keynesians feel equilibrium output can persist at levels low enough to cause mass unemployment or high enough to cause unacceptably high inflation. By manipulating fiscal policy tools--taxes and government expenditures--Keynesians believe they can change the level of equilibrium output by changing the level of total spending.

The personal income tax has been used, with varying degrees of success, to change equilibrium output. In the early 1960s, President John F. Kennedy proposed a substantial income tax cut

that was eventually implemented. The Kennedy tax cut was credited for significantly expanding output. However, the income tax surcharge of 1968 was largely unsuccessful in reducing consumption; most of the tax increase was paid from savings.

Different conclusions can be drawn about the effectiveness of using taxes to change equilibrium output. Tax decreases can increase consumption (and be effective) or just be saved (and cause no changes). Similarly, tax increases can reduce consumption and output, or result in reduced saving, and continuation of high demand. To a large extent, the effectiveness of changes in the personal income tax depends on the condition of the economy in which the tax changes were made, and how permanent taxpayers perceive changes to be. If taxpayers view a tax change as temporary, they will probably not change their consumption patterns.

The value-added tax can also be used as a discretionary stabilizer:

> Keynes discussed the "paradox of thrift": the attempt by everyone to save more can lead to lower national income, lower investment and hence lower saving . . . . For Keynesians, the question is: by encouraging people to save more, could an expenditure tax in fact lead to lower saving? If the Keynesian answer is yes, the Keynesian remedy is clear--and it need not [exclude] an expenditure

> tax. The government could indulge in some traditional fine-tuning, reducing the rate of the expenditure tax or increasing public spending.[5]

When current conditions demand an increase in aggregate demand, the value-added tax rate can be lowered to increase consumption. If the economy is overheating, aggregate demand can be reined in by raising the value-added tax rate to decrease consumption. Also, since the value-added tax rate acts directly on consumption, its effectiveness as a fiscal tool is virtually assured. If the tax rate is cut, the price of consuming falls. Assuming that consumption is a normal good, consumption expenditures should rise. Also, by raising the tax rate, the price of consuming is increased, and the quantity of consumption spending should drop.

The value-added tax can be used as a discretionary tool in fiscal policy, as can the personal income tax. So both the personal income tax and the value-added tax can be incorporated into the Keynesian model with ease. However, because the value-added tax directly influences consumption, it would have greater effectiveness, in the Keynesian model, in changing aggregate demand.

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5. "Britain: Tax Reform Round-Up," The Economist, 3 December 1983, p. 67.

The Monetarist Model

The monetarist model starts with the equation of exchange, MV=PY, in which M is the quantity of money, V is the number of times an increment of money is spent per period, P is the price level and Y is output. Monetarists assume that V is approximately constant because income receipts and the public's spending habits are generally stable. In the simplest model, monetarists also assume that Y is approximately constant; there may be temporary rises and falls in Y, but the mechanics of supply and demand will clear the markets of temporary gluts or shortages. Therefore, changes in M will translate into changes in P, because V and Y are fixed.

Monetarists also claim that monetary policy is not a finely honed instrument which can be used with precision. They are persuaded that the use of monetary policy for fine-tuning introduces instability in aggregate demand in an otherwise stable economy, and exacerbates recessions and inflations, if not causing them.

Taxes are a part of the government's fiscal policy tools. Monetarists believe that, in general, fiscal policy is ineffective in changing output; they believe that monetary policy is more effective. Tax cuts to increase aggregate demand in a recession will cause or increase the government's deficit.

Increased government borrowing will drive up interest rates and crowd out investment spending; aggregate demand remains unaffected. Tax increases, to relieve inflationary pressures, will cause or increase the government's surplus. As the government lends its surplus in the money markets, the interest rates would drop and fuel investment spending; aggregate demand stays stubbornly high, according to the monetarists.

Recognizing that the government must tax its citizens in order to have the necessary resources to operate, monetarists can be comfortable with either the personal income tax or the value-added tax on functional grounds. Monetarists tend to be classical liberals though; they may oppose the use of graduated taxes on ethical grounds. But neither the personal income tax nor the value-added tax can play a very significant role in stabilizing the economy in the monetarist model; both the personal income tax and the value-added tax are part of the fiscal policy tools.

One important concern that monetarists share with other economic schools of thought about a tax is: Can it raise adequate revenue to eliminate deficits? Since evidence seems to indicate the personal income tax and the value-added tax are about equally effective in raising revenue, monetarists would probably not be led to favor one tax over the other.

The Supply-Side Model

Both the Keynesian model and the monetarist model focus mainly on aggregate demand, and how it can be managed, in stabilizing the economy. Supply-siders, however, claim cyclical problems originate with distortions of aggregate supply. The supply-side model has its roots in Say's Law--demand springs from supply. Producers of goods and services are seen as combining their skills and resources, and taking their output into the market to trade with others who have done the same. Trade presupposes production. The Hoover Institute's Professor Thomas Sowell adds, "Money [is] 'only a means of exchange' not to be confused with 'true wealth.' Money [is] an 'intermediary standard,' and a distraction which 'only [throws] ideas into such confusion' that the basic barter [is] overlooked."[6]

The supply-side model does not have a macroeconomic equilibrium output; any level of output is acceptable because the demand that it creates is exactly enough to buy it. Unlike the Keynesians and monetarists, supply-siders claim recessions and inflations are not the result of changes in aggregate demand; they are caused by distortions of microeconomic markets. Professor Sowell explains:

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6. Thomas Sowell, Classical Economics Reconsidered, (Princeton: Princeton University Press, 1974), p. 36.

> The classical economists were never guilty of the absurdity of denying the existence of depressions, unemployment, or unsold goods, as sometimes claimed in literature. They recognized such phenomena as effects of production that was internally out of proportion as far a product mix was concerned, but not excessive in the aggregate."[7]

So recessions are caused by producer insensitivity to current tastes. Therefore, the supply-side solution to a cyclical down-turn is that "equilibrium [employment] could be restored by increasing output of those products undersupplied relative to others--that is by an increase in aggregate output."[8]

When the economy is fully employed, inflation is viewed as an unsuccessful attempt to separate supply and demand by unduly increasing the money supply. Changes in the money supply are seen as having only short-run effects on the economy. Aggregate demand is determined by aggregate supply, so changes in the money supply will have only the effect of bidding up prices in general.

When the economy is at full employment, the supply-sider's solution to inflation is to increase aggregate output until it is large enough to accommodate the increase in the money supply. If increases in the money supply are really large, increasing aggregate supply sufficiently may be impractical; capital formation, after all, takes time.

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7. Ibid, p. 43.

8. Ibid.

The supply-side explanation for stagflation in the 1970s is similar to the Keynesian explanation: unemployment was due to a contraction in aggregate supply, and inflation was caused by the shortage of goods with effective demand, aggravated by a loose monetary policy. Again the supply-siders' solution to stagflation is to increase aggregate supply to increase employment and relieve the inflationary pressure on scarce goods.

Aggregate supply is augmented in the supply-side model by two methods: first, supply-siders would like to see policies encouraging increased work effort as a means of increasing aggregate supply; and second, they favor policies that encourage increased productive capacity as a means of increasing aggregate supply.

Using the marginal-utility-of-income analysis, as outlined in the previous chapter, the effects of the personal income tax and the value-added tax can be viewed in two different ways: statically and dynamically. When examined statically, the personal income tax encourages work effort among those of low productivity and discourages work effort among the highly productive. However, dynamic considerations indicate that the continuously declining marginal tax rate of the value-added tax encourages capital formation (both physical and human) at every income level, relative to the progressive personal income tax. The tendency toward increased productive capacity will

eventually lead to more work effort among those who are currently of low productivity (as they accumulate capital and become more productive), and will result in more work effort among those who are presently highly productive. Therefore, since supply-siders favor a dynamic perspective of the economy, they prefer the value-added tax over the personal income tax.

The value-added tax also favors saving relative to the personal income tax. One of the major propositions of Say's Law is: "A higher rate of savings will cause a higher rate of subsequent growth in aggregate output"[9]--the opposite of Keynes' Paradox of Thrift. So, supply-siders would probably favor the value-added tax over the personal income tax because of its positive impact on saving, capital formation and, thus, aggregate supply. Since aggregate supply problems are at the root of recessions, inflations and stagflations in the supply-side model, the value-added tax would be a superior stabilizer when compared to the personal income tax.

Development

As the economy evolves, some goals that tax policy should promote are increased output, innovative structural change, dynamic changes in output, and the changes' occurring at steady,

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9. Ibid, p. 40.

sustainable rates.

Technological progress can promote economic goals by lowering capital-output ratios. Sometimes simply the rearrangement of existing capital can result in technological progress. Many times, however, technological progress requires the expenditure of resources. Resources, therefore, must be saved to promote technological progress. We have already seen that the value-added tax is superior to the personal income tax in encouraging saving.

Higher output can be achieved in three ways: increased utilization of capacity without replacement; increased technical efficiency (lowering capital-output ratios) by innovative use of existing capital; or increased capital formation, which requires abstention from current consumption. Clearly, exhausting the economy's capital to increase output temporarily does not promote long-term economic advancement. Innovative use of existing capital may not occur with regularity and may not be very responsive, in the short-term, to tax policy. Tax policy may have an effect on the activities which lead to innovation, however. Increased capital formation (physical and human) does increase the economy's output. The value-added tax, since it encourages the saving necessary for capital formation--the source of the majority of increased output--appears to be superior to the personal income tax in promoting sustainable increases in output.

Changes in an internal economy are many times painful. Changes in technologies, consumer tastes, and comparative advantages bring with them the birth of new industries, and the death of old industries, both of which are resisted by those whose interests they displace. But some change is necessary if stagnation is to be avoided. Change requires the free flow of capital from industry to industry and from physical to human form. The flow of capital from physical to human form has serious implications for a maturing economy and could explain the decline of many heavy industries. A. G. B. Fisher classified primitive agriculture and mining as primary activities, manufacturing and construction as secondary activities, and services as tertiary activities, and hypothesized that as an economy matures it moves from mainly primary activities to secondary activities, and finally, to tertiary activities.[10]

The personal income tax, with its favorable treatment of capital gains and investment tax credits, gives established and specially targeted industries implicit subsidies which mitigate eroding effective demand or comparative advantages. By keeping declining industries larger than their optimum size, like large

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10. A. G. B. Fisher, "Economic Implications for Material Progress," International Labour Review, vol. 32, July 1935, pp. 5-18; and "Production: Primary, Secondary and Tertiary," Economic Record, vol. 15, June 1939, pp. 24-38, cited by Bruce H. Herrick and Charles P. Kindleberger, Economic Development, 4th ed., (New York: McGraw-Hill, 1983), p. 74.

trees in a forest choke-off new vegetation by monopolizing the light and water, declining industries suppress new industries to replace them by attracting too much capital and diminishing the new industries' effective demand.

Effective demand for an industry's product influences its pre-tax rate of return. Conventional microeconomics indicates that the pre-tax rate of return is the best guide for the behavior of firms in determining supply. However, if tax concessions change the highly correlated relationship between pre- and post-tax returns, producers, acting rationally, may misallocate resources. Special capital gains taxation and investment tax credits are used to increase an industry's post-tax rate of return relative to its pre-tax rate of return, and thus increase investment in the industry. So, new industries that are targeted for development grow more rapidly than the effective demand for their products warrants. And resources move out of declining industries, that are objects for salvation, more slowly than the rate at which their effective demand erodes.

To the extent that the personal income tax prevents the gradual rise and fall of industries, and structural change associated with them, it aggravates the sense of exigency surrounding their demise and makes the inevitable fall all that more precipitous; it becomes more of a crash than a decline. And, indeed, the intermediate stagnation and resounding failure

of a "basic industry" does nothing to improve the confidence of entrepreneurs--the main channel of innovation in a capitalist economy.

The value-added tax, with its differentiated rates and exemptions, favors certain industries and occupations over others. In Europe, calls for sectorial emphasis and protection have led to certain industries' and professions' being taxed at favorable rates relative to the rest of the economy. The varying rates and exemptions affect price ratios, and therefore, change the effective demands for products relative to one another. The effects of the value-added tax change the relative rates of return among economic activities, and affect the market-directed, natural courses of industries between their births and deaths.

The value-added tax interferes with the free flow of capital as much as does the personal income tax. No doubt lobbying for tariffs and subsidies will always be orchestrated by those whose interests are not embodied in change. Therefore, whether the value-added tax or the personal income tax is superior in creating an environment for desirable changes in the economy is inconclusive.

The Standard of Living

An increasing standard of living is an important object of

economic policy. The economy's productive capacity is what supports its ability to consume. So, a larger productive capacity is what a tax should generate to fuel an advancing standard of living. (I remain ever mindful, however, that growth may not be society's only goal.)

The value-added tax falls on consumption and the personal income tax falls on income. Therefore, as has been noted above, at equal income levels the value-added tax favors saving, which augments productive capacity, and the personal income tax favors consumption, which determines the standard of living; herein lies an apparent paradox: productive capacity supports consumption, but abstention from consumption--a lower standard of living--is necessary to produce additional productive capacity. Therefore, an increased rate of capital formation suggests a lower standard of living at every income level. In other words, the value-added tax causes a lower amount of consumption for a given amount of productive capacity than the personal income tax.

What the paradox ignores is the different levels of productive capacity generated by the personal income tax and the value-added tax, <u>at a given time</u>. The paradox is resolved because the productive capacity, and thus the consumption level, attributed to the value-added tax is higher than the productive capacity, and consumption level, attributed to the personal income tax, <u>at a given time</u>. At the same level of productive

capacity, the value-added tax generates a lower level of present consumption than the personal income tax. In other words, according to economists Don Fullerton, John Shoven and John Whalley, "The switch from a profits tax [that is, an income tax] to a . . . consumption tax can be expected to reduce net . . . consumption initially. Depending on the savings elasticity, the capital stock can eventually grow to the point where all can be made better off," as shown in Figure 10.[11] Log consumption is the mathematical representation of consumption's rate of change. The two growth paths show how the rate of change of consumption is increasing. And the transition path follows consumption's behavior after a switch from the income tax to a consumption tax.

Summary

When aggregate demand problems destabilize the economy, the personal income tax and the value-added tax are both automatic stabilizers. When aggregate supply problems are at the root of macroeconomic instability, the value-added tax is superior to the personal income tax as an automatic stabilizer. And there seems to be no evidence that the value-added tax itself causes

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11. Don Fullerton, John B. Shoven and John Whalley, "Replacing the U. S. Income Tax with a Progressive Consumption Tax," Journal of Public Economics 20(1) (1983): 4-6.

continuing cost-push inflation.

The personal income tax and the value-added tax both work well as fiscal instruments in the Keynesian and monetarist models. In the supply-side model, the value-added tax is superior to the personal income tax in promoting stability.

Certain features of both the personal income tax and the value-added tax interfere with free capital movement. Therefore, both taxes distort an economy's development.

Since the value-added tax encourages more capital formation than the personal income tax, the value-added tax seems to lead to faster rates of growth than the personal income tax. In the long-run, increased capital accumulation can support higher absolute levels of consumption.

CHAPTER FOUR

PRINCIPLES OF EQUITY

Introduction

This final chapter compares the personal income tax and the value-added tax, using the various benchmarks of equity: incidence; effects on asset value; economic equality and economic freedom; income and consumption as measures of equity; the benefit principle; the principle of horizontal equity; the ability-to-pay principle and the concept of minimum social sacrifice; the social contribution principle; the principle of social mobility; the populist principle; and the principle of freedom of charity. The equity of the taxes when judged against each principle cannot be disputed to a large degree. The relative weight, if any, to be given to the principles themselves, however, in an over-all assessment of equity is subject to much debate.

Incidence

There are two types of incidence associated with any tax: statutory and final. The statutory incidence refers to those from whom the law requires the tax be collected. The final incidence refers to those who really bear the burdens of the tax.

The personal income tax's incidence statutorily falls on the individuals who earn taxable income. And the final incidence also falls on the individuals who earn taxable income; the personal income tax is not a cost of production, so it cannot be shifted to employers or consumers. Therefore, the statutory and final incidence of the personal income tax are the same.

According to the partial equilibrium models, the value-added tax's statutory incidence falls on the producers of goods and services; once the value they add in the production process is determined, they must pay the applicable rate. Taxing producers' value added, however, lowers their rate of return and affects the quantity they supply. A report by the Organisation for Economic Co-operation and Development concluded: "[T]he final incidence . . . is determined by how far competitive conditions permit the supplier . . . to pass on the burden to the consumer and by the way that factor markets adjust to the new pattern of prices."[1] Assuming that the value-added tax is only applied to private goods and services (as opposed to public goods and services), the ultimate consumer of goods and services bears the value-added tax.

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1. The Committee on Fiscal Affairs of the Organisation for Economic Co-operation and Development, The Impact of Consumption Taxes at Different Income Levels, (Paris: The Organisation for Economic Co-operation and Development, 1981), p. 13.

Taxes and the Value of Assets

The personal income tax in the United States is now progressively distributed over taxable income. As taxable income rises, the applicable marginal tax rate rises too. Therefore, the progressive income tax tends to equalize post-tax incomes, at a given time, shown by Figure 11.[2]

The value-added taxes in Europe are progressively distributed with respect to consumption; some goods, presumably those with high income elasticities of demand, are taxed more heavily than others. But most writers on the European value-added tax agree that the degree of progressivity is low enough that as consumption tends to fall as a percentage of income as income rises, the value-added tax nevertheless falls on smaller portions of income; the value-added tax is regressive with respect to income, at any given time, illustrated by Figure 12.

The progressive personal income tax and the regressive value-added tax have economic effects other than changing the current distribution of income. The personal income tax and the value-added tax, by having different effects on the rates of return associated with various assets, have different distributional effects on wealth, assuming ownership of assets

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2. Edwin Mansfield, Economics: Principles, Problems, Decisions, 3rd ed., (New York: W. W. Norton & Co., 1980), p. 703.

is the same under both taxes. Boston Federal Reserve economist, Robert Tannenwald writes:

> The wealth of some taxpayers would decline [under taxes other than the personal income tax,] because assets currently enjoying preferential tax treatment [, under it,] would lose their favored status. As a result, their relative attractiveness, and therefore their prices, would decline, reducing the net worth of their owners. One must take these wealth changes into account as well as the redistribution of the tax burden in determining the winners and losers under a . . . tax.[3]

So, a change from the personal income tax to the value-added tax would have the effect of reducing the value of the assets favored by current tax breaks and raising the value of some unfavored and newly favored assets. The initial impact of the tax change would result in a redistribution of wealth that would tend to be egalitarian because assets given special tax treatment under the current personal income tax tend to be owned by those in the upper wealth and income ranges. Some redistribution in favor of the wealthy may occur, however, depending on what the newly favored assets are.

Economic Equality and Economic Freedom

Economic equality versus economic inequality is one of the issues at stake in questions of distribution. The answers to

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3. Robert Tannenwald, "Redistribution of Wealth in Conversion to a Flat Rate Tax," New England Economic Review (January-February 1983): p. 5.

questions of distributional equity are value judgments. The equity of economic equality can involve questions about the fairness of economic equality versus the fairness of individual economic freedom (which I assume includes the absence of redistribution), since individual economic freedom is normally a sufficient precondition for economic inequality. However, equality and freedom are by no means always mutually exclusive. In fact, Stanford's Professor Milton Friedman argues that economic freedom fosters economic equality, in general.[4]

Egalitarians, who argue that economic inequality is immoral, want to pursue policies that eliminate inequality. Egalitarians may not be opposed to individual freedom, but since they do not value it as much as equality, occasionally diminishing it to promote equality may be unfortunate, but nevertheless necessary. So, they advocate that equality be pursued at the expense of personal freedom to the extent that the two principles are in opposition to one another.

Classical liberals, on the other hand, argue that protecting the moral autonomy of individuals is among the highest of values; a necessary element of personal freedom is economic freedom. Classical liberals may not be opposed to economic equality, but since they value it less than freedom, they are willing to accept economic inequality when its

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4. Milton Friedman, Capitalism and Freedom, (Chicago: University of Chicago Press, 1962), p. 169.

elimination would clash with economic freedom.

Intermediate positions between the extremes of complete dedication to economic equality and economic freedom can, of course, be taken. One may feel the goals of equality and freedom are equally important. Or one can think both equality and freedom are important, with a bias toward one. Indeed, most Americans feel both equality and freedom are important, and the situations in which one takes precedence are subject to varying criteria.

Income and Consumption as Measures of Equity

When one applies a test to determine the equity of a tax, he might measure the impact of the tax on economic equality and economic freedom. (Of course there are other measures of equity--such a justice.) But either income or consumption can be used as a standard by which to judge equality and individual freedom. In other words, equality of incomes and equality of consumption represent different forms of economic equality.

Two definitions for income exist: the flow concept and the accretion-of-wealth concept. The flow concept of income represents the flow of resources during a given time period to a family unit measured in money terms. The accretion-of-wealth concept of income includes the flow concept of income plus changes in the value of the assets of the family unit during a

given time period. Under the accretion-of-wealth concept, capital gains increase taxable income, and capital losses reduce it, whether they are realized or not. The present personal income tax in the United States applies only to the flow of income, and does not tax unrealized capital gains, because of the administrative costs of yearly appraisals, the potential inaccuracy of appraisals, and the potential liquidity problems created by taxing unrealized gains. Thus, when I refer to income, I will be referring to the flow concept of income.

Suppose one desires economic equality and believes equality of income is the appropriate measure of economic equality. The personal income tax is progressive so, at any time, it tends to equalize incomes by taxing those with high incomes relatively higher than those with low incomes. A European-style value-added tax, since it falls on consumption, tends to be regressive with respect to income; it falls relatively harder on those with low incomes. Obviously, those whose goal is economic equality, using income as a measure, would feel the personal income tax is more equitable than the value-added tax.

However, one could desire economic equality, but feel that consumption is a more accurate measure of economic equality because differences in consumption reflect differences in standards of living. (I assume that the impact of one's financial concerns on his standard of living cannot be included.) The personal income tax, some suppose, reduces the

differentials in consumption between rich and poor, by diminishing income inequality. Conversely, some believe that the progressive income tax's lowering the cost of consumption relative to saving encourages the rich to spend even more, a position supported by a leading supply-sider, Paul Craig Roberts:

> Take the case of a person facing the 70 percent tax rate on investment income. He can choose to invest $50,000 at a 10 percent rate of return, which would bring him $5,000 per year of additional income before taxes. Or he can choose to spend $50,000 on a Rolls Royce. Since the after-tax value of $5,000 is only $1,500, he can enjoy a fine motor car by giving up only that amount. Britain's 98 percent tax rate on 'unearned' income has reduced the cost of the Rolls in terms of foregone income to only $100 a year. The profusion of Rolls Royces seen in England today is mistaken as a sign of prosperity.[5]

Since the value-added tax would widen income differentials, some might see it increasing consumption inequality. However, the value-added tax, by encouraging more saving relative to consumption, could also be seen as reducing relative consumption inequality more than the personal income tax. Since the magnitude of the different effects that the personal income tax and the value-added tax could have on consumption cannot conclusively be stated, consumption egalitarians can consider both taxes equitable, depending on the assumptions they make. In other words, under the right assumption, either tax can

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5. Paul Craig Roberts,"The Economic Case for Kemp-Roth," The Wall Street Journal, 1 August 1978, sec. 1, p. 16.

achieve more consumption equality.

Suppose one values individual freedom. Any tax except the lump-sum tax will encourage some kind of activity at the expense of some other. Classical liberals are inherently uncomfortable with taxation because it always involves coercion. Realizing the necessity for government revenue, classical liberals are indifferent between income and consumption taxes, although both taxes are non-neutral with respect to consumption and saving.

To the extent that the personal income tax and the value-added tax rates are differentiated for redistributive purposes, classical liberals are opposed to them. While not opposed to economic equality, they oppose redistribution as violating their values. Professor Milton Friedman "find[s] it hard, as a [classical] liberal, to see any justification for graduated taxation solely to redistribute incomes. This seems a clear case of using coercion to take from some in order to give to others and thus to conflict head-on with individual freedom."[6]

The value-added taxes in Europe have differentiated rates; high rates are applied to those goods and services that tax authorities believe have high income elasticities of demand. The exemptions and low rates associated with the European value-added taxes are on goods and services that supposedly make

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6. Friedman, Capitalism and Freedom, p. 174.

up large portions of low and middle class persons' expenditures, like food and health care. Since the graduated rates were adopted mainly for redistributive purposes, classical liberals, who think consumption is an appropriate tax base, also find the value-added tax inequitable.

The personal income tax and the value-added tax are both unjust when judged by classical liberals. They do not oppose all income or consumption taxation, however. They find flat-rate income and consumption taxes acceptable, while income and consumption taxes with graduated rates are unattractive.

The Benefit Principle

The benefit principle of taxes requires that family units be taxed to the degree that they enjoy public goods that government supplies. Indeed, the idea that the costs and benefits of economic activities be borne by the same persons is central to the capitalist ethic.

The personal income tax probably is an equitable tax when judged by the benefit principle. The personal income tax is progressive, so it taxes higher income persons at a higher rate than lower income persons. The benefit principle is served by the personal income tax because wealthy families probably derive greater benefit from public goods than do poor families. Wealthy families probably enjoy the protection that government

provides more than the poor because the wealthy have more to protect. The wealthy probably benefit from roads and public airports more than the poor because the wealthy travel more. And a cleaner environment is probably enjoyed by the wealthy more than the poor, at least according to Massachusetts Institute of Technology's Lester Thurow:

> If you look at countries that are interested in environmentalism . . . one is struck by the extent to which environmentalism is an interest of the upper middle class. Poor countries and poor individuals simply aren't interested. . . . If [the upper middle class achieve a clean environment], it will make all the other goods and services (boats, summer homes, and so forth) more enjoyable.[7]

The value-added tax is probably not equitable when judged by the benefit principle. The utility one receives from the consumption of public goods is more or less unrelated to his level of personal consumption, according to Joseph Pechman and Benjamin Okner of the Brookings Institution: "[R]elative tax burdens depend not only on the amount of income a family receives, but also on the sources of income and the way it is spent. . . . All of these factors work to produce very different relative tax burdens--even among families with the

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7. Lester C. Thurow, The Zero-Sum Society, (New York: Penguin Books, 1980), pp. 104-105.

same income. . ."[8] Since the value-added tax falls on private consumption, it probably does not fall proportionately on those who enjoy government provided public goods. Therefore, the personal income tax is more equitable than the value-added tax when equity is based on the benefit principle.

The Principle of Horizontal Equity

The principle of horizontal equity requires that those in similar economic circumstances should be treated the same. Once again, one's notion of horizontal equity depends on his idea of the appropriate measure of equity: income or consumption. Persons of the same income level can have different consumption levels, and vice versa.

If income is thought to be the standard by which horizontal equity should be judged, the personal income tax is more or less an equitable tax, even though some differentiation exists as a consequence of tax breaks and different classifications of income, such as earned and unearned. If consumption is thought to be the measure of horizontal equity, the personal income tax is not equitable; large differences in consumption can exist among those with the same income.

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8. Joseph A. Pechman and Benjamin A. Okner, How Fair is the American Tax System?: Who Bears the Tax Burdens?, Brookings Research Report, no. 138 (Washington: The Brookings Institution, 1974), p. 6-7.

The value-added tax is not an equitable tax, using income to judge horizontal tax equity. The value-added tax falls on consumption, but those with the same consumption level do not necessarily have the same income. The value-added tax is an equitable tax when consumption is the basis for comparing horizontal equity; those whose consumption patterns are the same pay the same amount in taxes.

The Ability-To-Pay Principle

The ability-to-pay principle of tax distribution requires that those who have a greater ability to pay taxes should be required to shoulder a greater proportion of the tax burden. When the ability to pay is measured by the concept of equal marginal sacrifice, social utilitarians promote the idea of minimum social sacrifice in taxation.

The ability-to-pay principle can be measured in terms of income or consumption. Some feel the ability to pay is more accurately measured by income. Others feel the ability to pay is more accurately measured by consumption because consumption reflects one's standard of living.

Using income to judge ability to pay, the goal of minimum social sacrifice from taxation can be achieved if the marginal utility of income for all persons is equalized. Owing to the diminishing marginal utility of income, the goals of minimum

social sacrifice and equal marginal sacrifice suggest the usefulness of progressive income taxation; income that is valued less is taxed at a higher rate.

Since a European-style value-added tax is regressive with respect to income, it tends to increase social sacrifice; those with the greatest ability to pay are taxed at a lower rate. The value-added tax, therefore, is not equitable using the ability-to-pay principle of equity applicable to income.

If consumption is the better measure of ability to pay, minimum social sacrifice can be achieved by equalizing the marginal utility of consumption for all persons. Consumption is also subject to diminishing marginal utility. So progressive rates of taxation applicable to consumption are appropriate in pursuing equality of marginal utility of consumption because the least valued consumption is taxed.

Since the personal income tax falls on income progressively, it has potential to be inequitable by taxing those with high incomes and low consumption levels at high rates. The existing value-added taxes fall progressively on consumption because those goods and services with high income elasticities of demand are taxed at higher rates. So, the value-added tax tends to reduce social sacrifice. Therefore, the value-added tax is equitable with respect to the ability-to-pay principle applied to consumption.

European examples of (tends to be)

How successful are the existing taxes in this respect - need to explore the "equal sacrifice" arguments

The Social Contribution Principle

Another principle of equity in taxation is based on the totality of one's net contributions to society. Productive effort is viewed as a contribution to society and should be counted in one's favor when his share of taxes is calculated. Private consumption is thought to be done at the expense of society, so one should pay society for the privilege. In his public finance book, Professor Richard Musgrave said: "It may be argued that a person should be taxed in accordance with what he takes out of the common pool and not in accordance with what he puts into it."[9] The Economist explained how saving was a contribution to society with the following: "[W]ealth that is invested . . . or loaned to the government or banks will be of service to the whole community (via the higher level of economic activity made possible)."[10]

The personal income tax bears on income which is a result of resources committed to productive activity. Under the social contribution principle of taxation, the personal income tax is not equitable because as one's contribution to society grows with productivity, so will his tax bill.

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9. Richard A. Musgrave, The Theory of Public Finance, (New York: McGraw-Hill Book Company, Inc., 1959),p. 163.

10. "Britain: Tax Reform Round-Up," The Economist, 3 December 1983, p. 83.

The value-added tax falls on consumption, which is the privilege for which taxes should be paid. According to the social contribution principle of taxation, the value-added tax can be judged equitable.

The Principle of Social Mobility

Probably the most widely held principle of equity, especially in the United States, requires that social conditions permit, indeed stimulate, social mobility. In fact, the promise of conditions allowing upward social mobility has become synonymous with the "American Dream." So a tax's effect on upward social mobility, or for that matter, social mobility in general, is a standard by which its equity can be judged. An equitable tax should promote upward social mobility, but it should not prevent downward social mobility. A static society, in which a person and his descendant's social status cannot change, is a mark of feudalism, and is dysfunctional to economic growth. The dynamics inherent in capitalism that produce social mobility make capitalism, as a system, an equitable social arrangement when judged by the social mobility criterion.

Upward social mobility is, in general, a function of one's income. So increasing one's production and productivity lead to upward social mobility.

A result of and an incentive for, pursuing upward social

mobility is an increasing income. But the marginal utility of income is thought to decline as income increases.

Since the personal income tax is progressive, it increasingly diminishes the marginal utility of pre-tax income. The existing value-added taxes, on the other hand are regressive with respect to income, and above a low level of income, OE in Figure 13, offer higher levels of marginal utility of pre-tax income than the personal income tax.

The marginal cost (disutility) of earning income increases as work effort increases, shown by function MC_0 (person of low productivity) and MC_1 (person of high productivity) in Figure 13; leisure becomes dearer as work effort increases. But to maximize the total utility of income, the marginal cost of earning income must equal the marginal utility of income.

Since the personal income tax raises the marginal utility of pre-tax income relative to the value-added tax, for incomes in region OE, the satisfaction maximizing level of pre-tax income for those of low productivity, MC_0, is higher under the personal income tax, shown by A_0, than it is under the value-added tax, shown by B_0. Also, since the personal income tax lowers the marginal utility of pre-tax income relative to the value-added tax, for incomes above OE, the optimal level of income is higher under the value-added tax, illustrated by Point B_1, than it is under the personal income tax, depicted by Point

A_1, for those of high productivity, MC_1. By progressively taxing increases in income and reducing the incentive to form capital relative to the value-added tax, the personal income tax reduces social mobility, and especially upward mobility. According to Professor Friedman:

> "A . . . factor that has reduced the impact of the graduated tax structure on inequality of income and wealth is that these taxes are much less taxes on being wealthy than on becoming wealthy. While they limit the use of income from existing wealth, they impede even more strikingly--so far as they are effective--the accumulation of wealth. The taxation of income from the wealth does nothing to reduce the wealth itself, it simply reduces the level of consumption and additions to wealth that the owners can support. The tax measures give an incentive to avoid risk and to embody existing wealth in relatively stable forms, which reduces the likelihood that existing accumulations of wealth will be dissipated."[11]

According to supply-side author George Gilder, in referring to those poor persons who undergo upward social mobility: "Poor people tend to rise up rapidly and will be damaged by a policy of redistribution that will always hit new and unsheltered income and wealth much harder than the elaborately concealed and fortified winnings of the established rich."[12] Since existing value-added tax's are regressive, they make additions to wealth easier to support, and are more conducive to upward social

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11. Friedman, Capitalism and Freedom, p. 173.

12. George Gilder, Wealth and Poverty, (New York: Bantam Books, 1981), p. 87.

mobility.

The value-added tax, by raising the marginal utility of income relative to the personal income tax, above income OE in Figure 13, seems to raise work effort for those whose incomes are in that region. Also, by incorporating a declining marginal tax rate over all income levels, and not taxing saving, the value-added tax seems to promote capital accumulation. Both increased work effort and wealth accumulation mark upward social mobility. So, the value-added tax appears to be a more equitable tax than the personal income tax when they are both judged by their effects on social mobility.

The Populist Principle

The populist principle of equity is also important to American society; it requires that economic power should be diffuse. The desire for diffuse economic power does not call for equality of economic power among all men; it simply reflects the populist ethic of being suspicious of elites and ominous concentrations of power. Men can be unequal, but the inequality should not be so great that the rights of the rich threaten the rights of the common man. Also, a highly unequal distribution of economic power, even if those who hold it are constantly changing, is unacceptable when diffuse economic power is valued. So if distribution is unfavorably skewed, high social

mobility does not mitigate the inequity.

Professor Nicholas Kaldor questions the traditional associations of personal fortunes and concentrations of economic power:

> There is . . . [an] argument against the accumulation of fortunes and it is important to see quite clearly whether its usual application to the field of taxation does not rest on an intellectual confusion. This is that quite apart from any powers exercised in consumption, great inequality of wealth is undesirable because it confers corresponding inequality of economic power--meaning by the latter power of control over large segments of industry; the power to decide how industrial operations should be carried on, which particular activities should be expanded, which methods should be tried out, and who should be put in charge of various functions. Power in this sense is undoubtedly a very important phenomenon in a modern industrial community. But it is inevitably associated with large-scale organization, not with large personal fortunes--or with the latter only to the extent that it is a by-product of the former. The millionaire-rentier, owning land or Government bonds or a scattering of industrial shares, possesses hardly any of it. The Managing Director of the large combine is pregnant with it even though his own personal fortune may be small. The growth of inequality in economic power through the growth of large-scale or super-large scale enterprise undoubtedly presents a very serious problem in a modern capitalist community (and it might be suggested, in a Socialist community as well, if it uses the same techniques of production).[13]

The personal income tax, with its special treatment of capital gains, favors the direction of resources and power in large organizations, and their management teams. So the

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13. Nicholas Kaldor, Expenditure Tax,(London: Unwin University Books, 1965), p. 100.

personal income tax tends to be unjust to those desiring diffuse power.

The value-added tax encourages entrepreneurship over conglomeration; so while it may lead to large personal fortunes, it will broadcast economic power more than the personal income tax by leading to more enterprises on the order of the family firm. Therefore, the populist would find the value-added tax more equitable than the personal income tax.

The Principle of Freedom of Charity

A final principle of equity in taxation refers to one's right to be free to be charitable. The right to be charitable calls for one to be free to support, to the extent he is willing and able, causes he feels are worthy. if a tax violates one's freedom to be charitable, or uses coercion to favor one cause over another, it is inequitable by this standard.

The personal income tax, by allowing exemptions from taxable income for charitable contributions, has been used coercively against charitable institutions. Tax authorities can make judgments about religious and educational institutions' practices and teachings, deciding if the institutions are indeed charitable. If the values of the tax authorities are different from those of the institutions, the institutions may be declared "uncharitable" and their tax-exempt status may be repealed.

Bob Jones University, a fundamentalist Protestant university, considered a charitable institution by many, was denied tax-exempt status because a university policy was deemed racially discriminatory: the university administration does not allow inter-racial dating. The powers conferred on the tax authorities by the personal income tax, to coerce charitable institutions and favor some causes over others, makes the personal income tax inequitable with respect to one's freedom to be charitable.

In some European countries, charitable contributions can be deducted from one's value-added tax base. Also, purchases made by charitable institutions are not subject to the value-added tax. However, as with the personal income tax, tax authorities determine what organizations are charitable. So, the value-added tax can favor some charities over others by not allowing contributions, to some, to be deducted. Or the tax can be used coercively, by tax authorities, who can levy the tax on organizations' purchases, if their practices are seen as uncharitable. Therefore, the value-added tax is not equitable, either, to those who value freedom to be charitable.

Summary

This chapter has reviewed tax incidence; taxes and asset value; economic equality and freedom; income and consumption as

measures of equity; the benefit principle; horizontal equity; the ability-to-pay principle; the social contribution principle; social mobility; the populist principle; and freedom of charity. The following conclusions were derived from the analysis of the equity principles.

Income earners bear the personal income tax, and the value-added tax falls on consumers. Other considerations associated with incidence may account for the ways in which taxes change asset values.

Income and consumption can both be used as standards against which equity is judged. Egalitarians who use income to measure equity favor the personal income tax; those who use consumption prefer the value-added tax. Classical liberals, whether they use income or consumption as equity benchmarks find the personal income tax and the value-added tax inequitable because they have differentiated rates.

The value-added tax is inequitable when compared to the personal income tax, with respect to the benefit principle; as one becomes wealthier he enjoys more public goods, but pays less taxes proportionately.

The personal income tax is more equitable than the value-added tax with respect to horizontal equity, if income is the equity measure; the value-added tax is superior if consumption is the measure.

The ability-to-pay principle and the concepts of equal

marginal sacrifice and minimum social sacrifice suggest the need for progressive taxation. If income measures equity, the personal income tax is superior to the value-added tax. If consumption is the standard, the converse is true.

The value-added tax is favored over the personal income tax by the social contribution principle. The value-added tax does not tax production, which is a social contribution; the personal income tax does.

The value-added tax's regressiveness promotes capital formation relative to the personal income tax. Increases in capital formation encourage upward social mobility.

The value-added tax encourages entrepreneurship over corporate conglomeration relative to the personal income tax. So, the value-added tax is superior to the personal income tax when judged by the populist principle, because corporate conglomerations are tantamount to large concentrations of power.

The discretion given tax authorities relating to charitable organizations has allowed them to use the personal income tax and the value-added tax to be coercive, and therefore inequitable, with respect to charitable contributions.

CHAPTER FIVE

CONCLUSIONS

The four previous chapters have tried to systematically compare the United States' personal income tax and a European-style consumption type value-added tax. The superiority of one tax over the other, in some cases is clear-cut, and in others is contingent on assumptions, degrees, values, or presently unknown facts.

Administratively, both the personal income tax and the value-added tax have positive and negative effects. Both taxes, while complex, are not so complex that they are not functional; the costs of administering the tax are reasonable when the amount of revenue the taxes raise is considered.

The personal income tax is superior to the value-added tax administratively with respect to creating smaller excess burdens and not involving border adjustments to international transactions. The value-added tax is superior to the personal income tax in checking evasion and shrinking the size of the underground economy.

Thus, the taxes' superiority depends on the size of the excess burden created by the value-added tax over that of the personal income tax, and the cost of administering border adjustments; if their sum is greater than the portion or revenue generated from "uncovered" economic activities, the personal income tax is better than the value-added tax; if their sum is

less, the value-added tax is better.

Allocationally, the personal income tax is more efficient than the value-added tax with respect to neutrality, and encouraging work effort at low incomes in the static marginal-utility-of-income model. The value-added tax is more efficient in allocating resources among the varying forms of business organization; in encouraging saving; in encouraging work effort in the dynamic marginal-utility-of-income model; and in allocating resources among the most productive investments.

Since I prefer to view the economy dynamically, the only point on which I see the personal income tax as more efficient than the value-added tax is with regard to neutrality. Therefore, if the inefficiencies of the non-neutrality of the value-added tax are greater than its relative efficiencies with respect to the personal income tax, the personal income tax is allocationally more efficient. If the converse is true, the value-added tax is allocationally superior.

As automatic stabilizers, both the personal income tax and the value-added tax work well when macroeconomic instability is caused by aggregate demand problems. The value-added tax is the superior automatic stabilizer with respect to insufficient aggregate supply. Also, the value-added tax does not seem to be inflationary.

Keynesians and monetarists, on stabilization grounds, would probably be indifferent among the personal income tax and the

value-added tax. Supply-siders, on the other hand, think the value-added tax is a superior stabilizer relative to the personal income tax.

Neither the personal income tax nor the value-added tax is relatively better than the other in promoting the maturation of the economy. Both taxes retard development by interfering with resource mobility.

The value-added tax encourages more capital formation, and thus a higher rate of growth, than the personal income tax. Therefore, the value-added tax promotes the general welfare better than the personal income tax.

On the points of aggregate demand instability, Keynesian and monetarist models, and development, the effects of the personal income tax and the value-added tax are similar. However, with respect to aggregate supply problems, the supply-side model, and promoting a higher standard of living, the value-added tax is better than the personal income tax. So, as an instrument of stabilization, the value-added tax seems to be superior to the personal income tax.

A policy prescription favoring progressive taxation need not be a plan designed to soak the rich; it may simply be a desire to see those who enjoy the services government provides pay for them (the benefit principle), or it may be a desire to see taxes cause the smallest possible aggregate sacrifice (the-ability-to-pay principle and the concept of minimum social

or equal sacrifice

sacrifice). Similarly, suggestions promoting regressive taxation are not necessarily calls by those in power to see the rich get richer and the poor get poorer; they may believe that those who work hard, or take risks deserve most of what they make, especially at the margin (the social contribution principle), or they may desire a high degree of social mobility and see capital formation (physical and human) as the catalyst.

Those who desire to see taxes with particular distributional effects need not be open to the charge of unenlightened self-interest--crude jealousy or avarice. Equity can be measured by many standards. What is fair to one person may not be fair to another. So, enumerating the various principles of equity can serve to keep students of taxation mindful, and tolerant, of the values of others.

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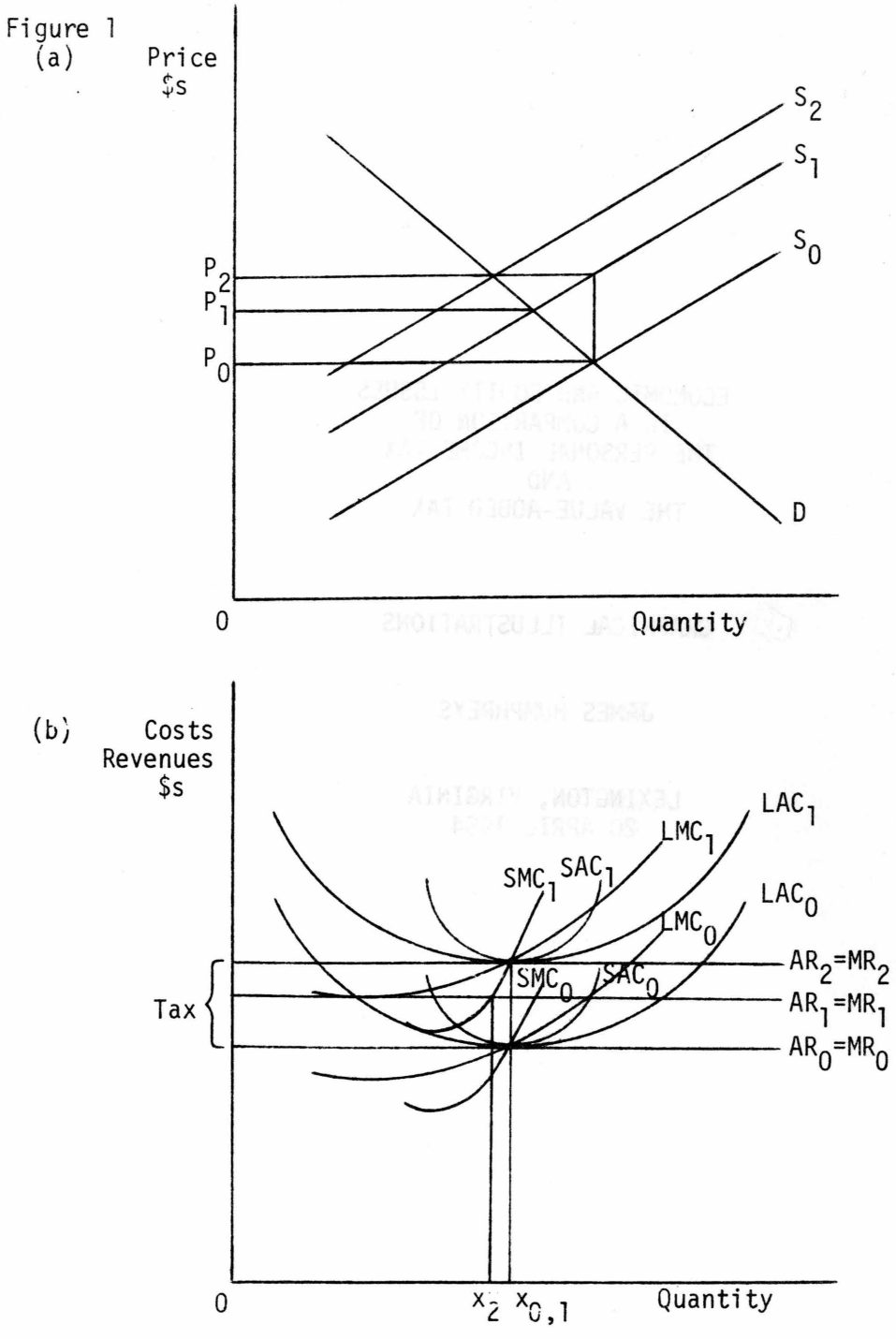
ECONOMIC AND EQUITY ISSUES IN A COMPARISON OF THE PERSONAL INCOME TAX AND THE VALUE-ADDED TAX

GRAPHICAL ILLUSTRATIONS

JAMES HUMPHREYS

LEXINGTON, VIRGINIA
20 APRIL 1984

Figure 1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Price
$s
S_2
S_1
S_0
P_2
P_1
P_0
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0
Quantity
(b)
Costs
Revenues
$s
LAC_1
LMC_1
SMC_1
SAC_1
LAC_0
LMC_0
SMC_0
SAC_0
$AR_2=MR_2$
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Tax
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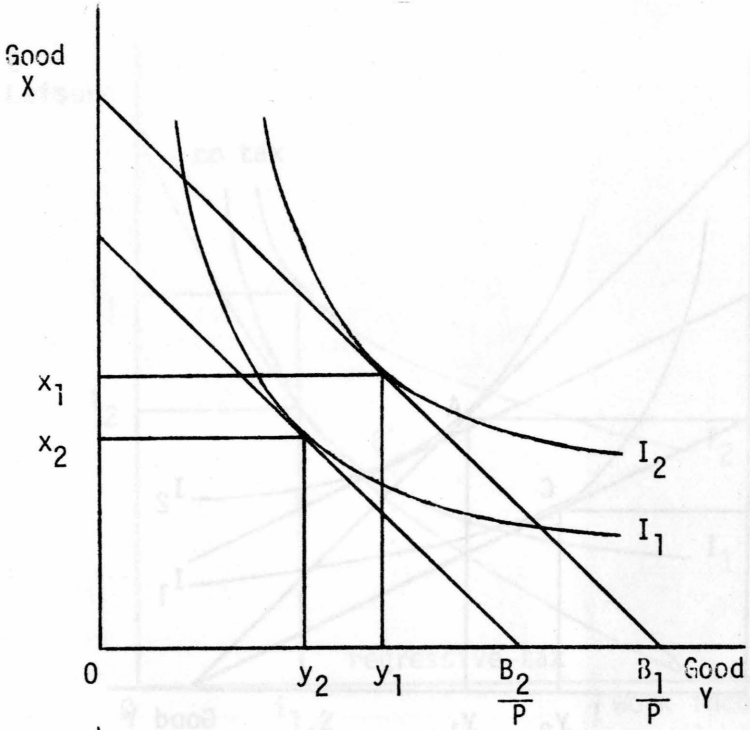
Quantity

Figure 2



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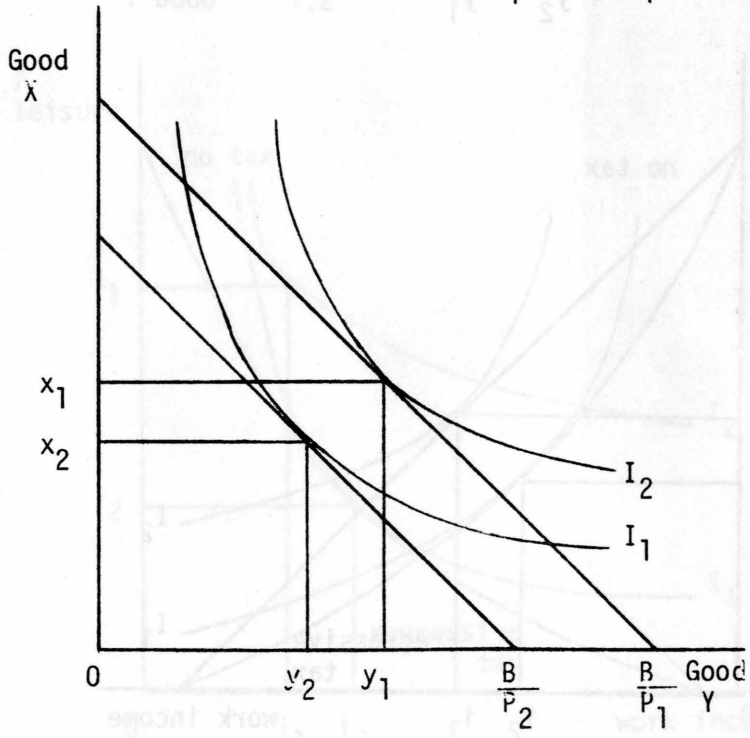

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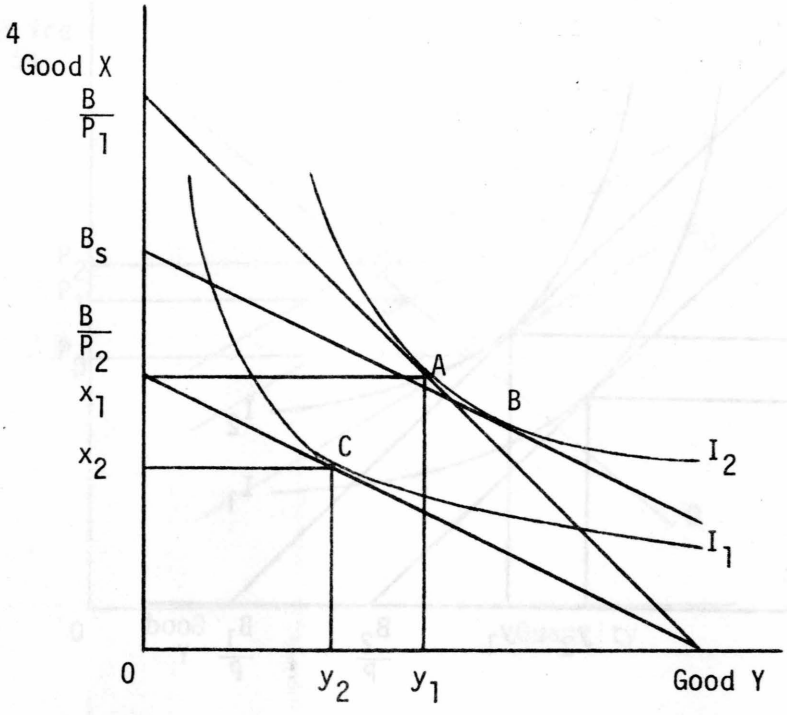

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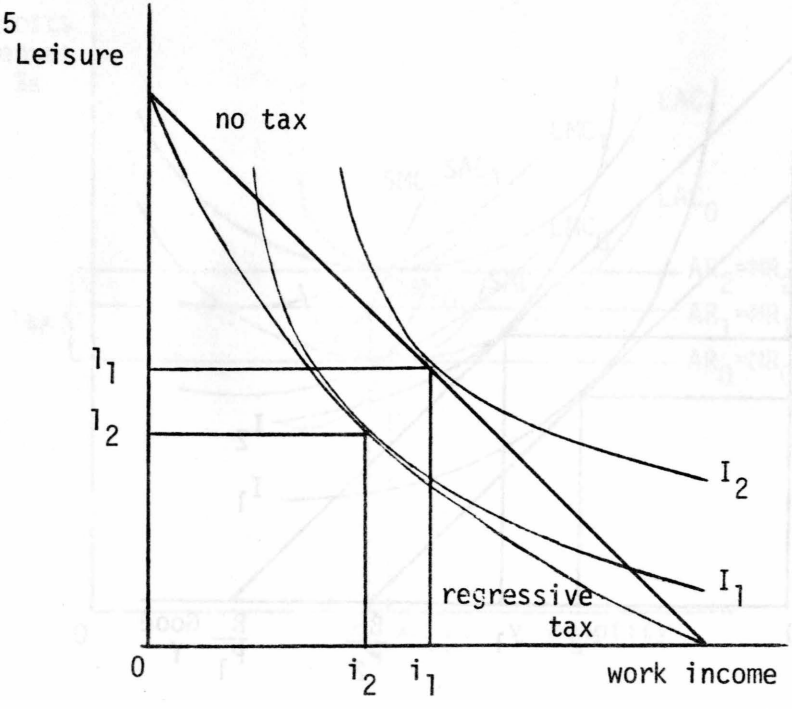

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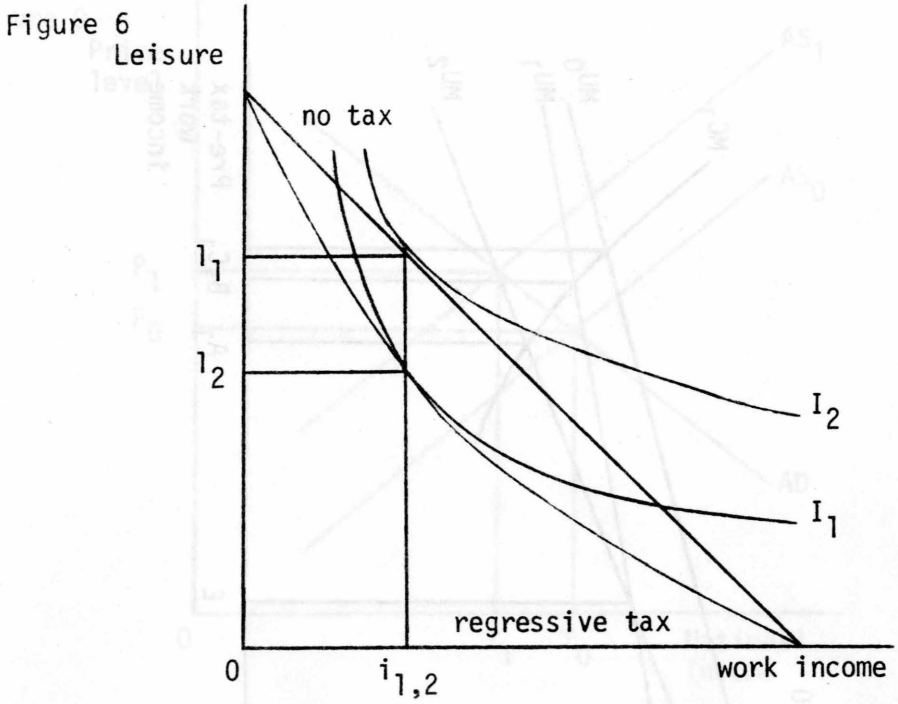

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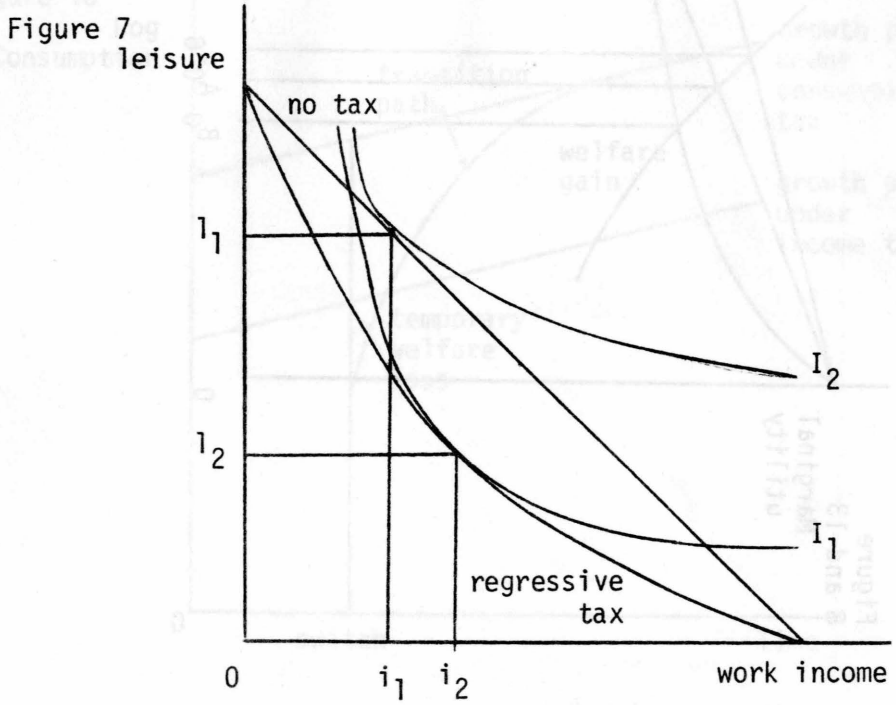


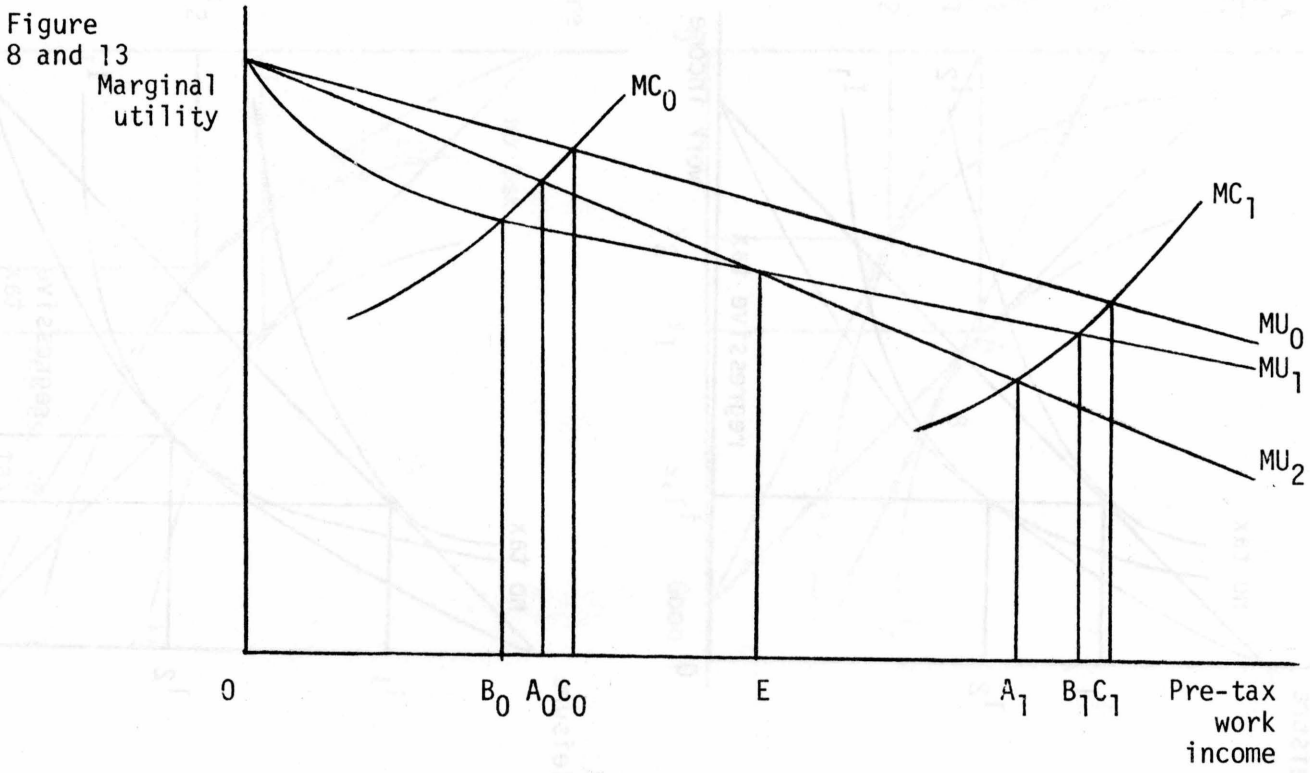
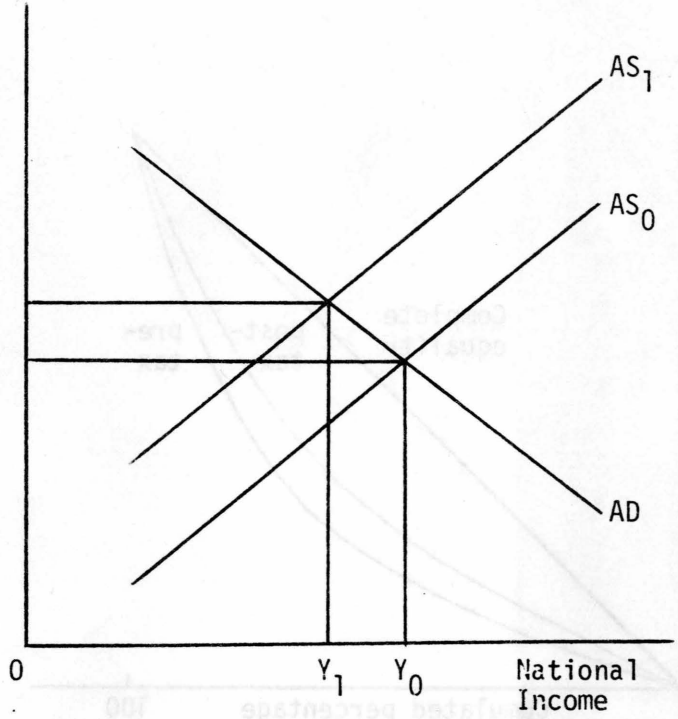


Figure
8 and 13
Marginal
utility
MC0
MC1
MU0
MU1
MU2
0
B0 A0C0
E
A1 B1C1
Pre-tax
work
income

Figure 9



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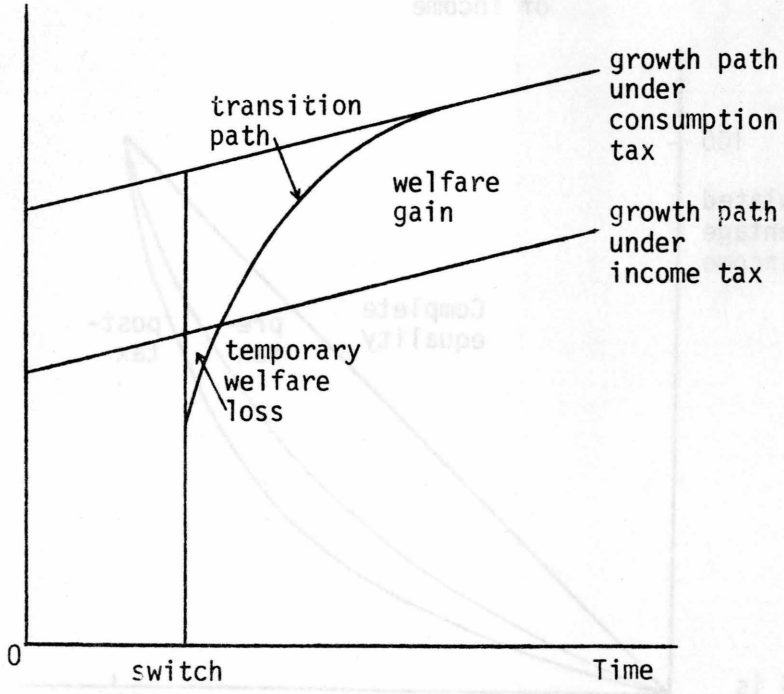

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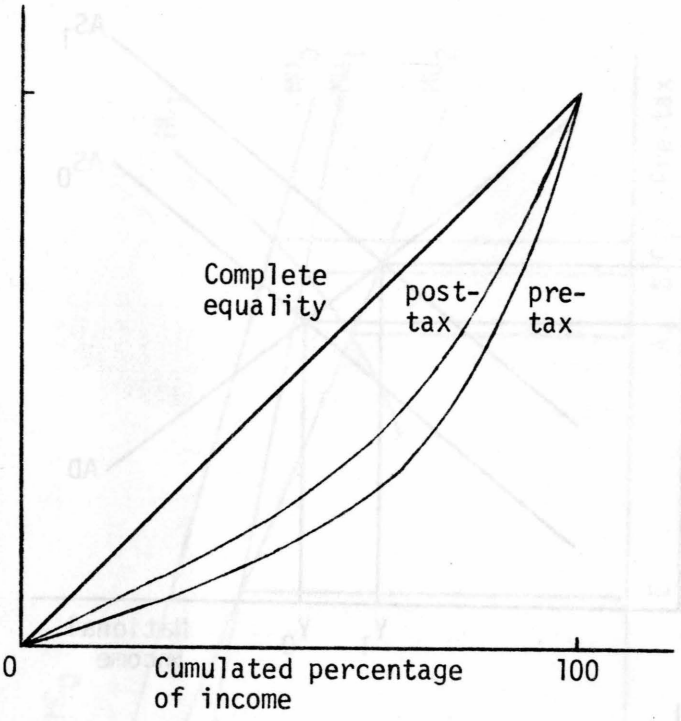

Figure 12

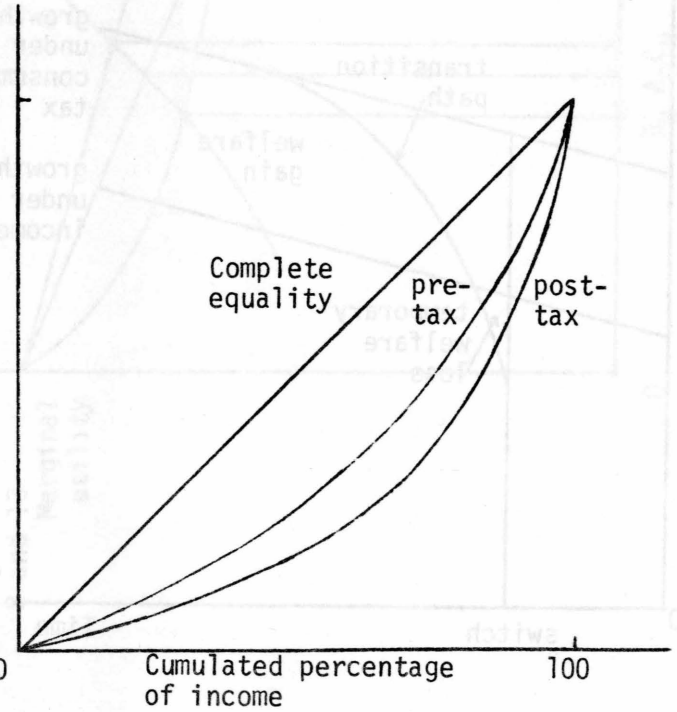

Figure 13 is Figure 8