The Concept and Theory of Value-Added Taxation

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THE CONCEPT AND THEORY
OF
VALUE-ADDED TAXATION

A Thesis
Presented to
the Faculty of the Department of Economics
Old Dominion University

In Partial Fulfillment
of the Requirement for the Degree
Master of Arts

by
Stacy R. Barnes
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THE CONCEPT AND THEORY
OF
VALUE-ADDED TAXATION

A THESIS
APPROVED BY THE
DEPARTMENT OF ECONOMICS

BY

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CHAPTER 1

INTRODUCTION

THE TAXATION ISSUE

The subject of taxation has always been a difficult and controversial issue. Few subjects have attracted more widespread attention. Taxation has been and still is, a very complicated area of study involving the difficult questions of law, accounting, economics and politics. The topic has often been obscured by a lack of information, by misunderstanding, and even by misrepresentation. Yet, taxation has important implications for the welfare of our people and for the growth and stability of our economy.

History illustrates the importance of taxation in the development of human affairs, particularly in Great Britain, France and the United States. In England, for example, the failure of King Charles I to allow Parliament representation on tax matters in the early seventeenth century eventually led to internal strife and civil war for his people. The outbreak of the French Revolution in 1789 is another example. This, to a great extent, was an indication of the desperation to which the poor were driven by the taxation of the ruling class.¹

In the United States, opposition to the tariff duty imposed (by the British Parliament) on tea imports by American Colonists, eventually brought about the famous "Boston Tea Party" which contributed greatly toward bringing on the American Revolution. While framing the American constitution (which allowed for government taxing powers), heated debates and controversies appeared among the states. And when the federal government made use of its taxing powers through tariff laws (1789), western farmers and southern planters were very displeased (since they thought that they stood to lose more than they could possibly gain). Businessmen and owners of new industries were very pleased, particularly since it protected their interests. As a result, there was a lot of dissension among these groups. In fact, as more tariff laws were enacted (1824, 1828, and 1832), the discontent among these groups heightened nearly to a point of civil war.\(^2\)

Of course, currently in the United States, these types of dissension among people do not exist. Today the federal government makes an attempt to tax its people more equitably than it did formerly, and uses its revenues to help provide (through social goods—national defense, law and order, and housing and merit goods—education and health services) for the needs of its people. Such taxes

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play an active role in the area of income redistribution and in the areas of economic growth and stabilization.

Even though violent dissension is not a factor with the American taxpayer, the expression "a taxpayer's revolt" began to appear in late 1968 and early 1969. Since that time taxes have become a very lively issue. In fact, there is currently a strong movement in the United States for tax reform. This movement has so much momentum that a massive overhaul of our tax system is a likelihood in the near future. Reform is likely because of the controversy surrounding our present income tax system, because of improvements needed in our balance of payments, and because of the additional revenues needed to help with the financing of government programs.

It is estimated that by the mid-1970's the federal government will need extra revenues of at least $50 to $100 billion. These revenues will help states and localities meet their pressing needs in the fields of education and other public services carried on at the local level. They will also help in the areas of health, poverty, and discrimination. Some of the new revenues can come from improvements in, or elimination of, present federal spending programs. But most will have to come from added federal taxes.  

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The Nixon Administration has strongly hinted that new initiatives needed to achieve the needs of our economy depend on the development of a new source of federal revenues; namely, the value-added tax (VAT).

A proposal, outlined by President Nixon in early 1972, now under study by the Advisory Commission of Intergovernmental Relations, considers VAT as a method to finance property tax relief. And other proposals, like federal educational assistance to relieve property taxes via a value-added tax, are most certain to appear.5

Some United States officials have urged that adoption of a VAT would greatly help the United States balance of payments. They contend that the lack of value added taxation appears to put United States commodities at some competitive disadvantage in international trade. Also, several European countries have VAT, which, according to some, has an effect on our already troubled balance of payments. According to the argument, the rules of the General Agreement on tariffs and trade (GATT) says that indirect taxes, such as VAT, may be rebated on exports and equivalent taxes imposed on imports. Direct taxes, such as the corporate income tax, are not subject to similar adjustment at international borders. Thus, the United States, which relies primarily on direct taxation, is at a disadvantage.

The Nixon Administration, in light of this, is considering the VAT as a possible substitute for all or part of the corporate income tax.

Others propose introduction of the VAT on the grounds that the corporate income tax is basically a tax on the equity capital of corporations, and thus reduces the rate of return on investment. Proponents of the tax say that, if the VAT were substituted for the corporate tax, the after tax rate of return on investment would increase, thereby stimulating investment.

Some economists oppose introduction of VAT as a substitute for revenue from the property tax and the corporate income tax. They would prefer the alternative of raising existing taxes and/or reform. They argue that the federal government has several other means of raising additional revenues. Some advocate a surcharge on personal and corporate income taxes; while others feel that raising additional revenues can be accomplished through the elimination of exemptions, and exclusions available to certain taxpayers.

As demonstrated here, recent interest in value-added taxation has aroused several opinions among economists, politicians, and government officials; and, as the tax reform date nears, intensive debates are expected to appear between opponents and supporters.
DEVELOPMENT OF THE VALUE-ADDED TAX

Although most interest in VAT has occurred since 1960, the actual concept of the value-added tax originated with Carl F. Von Siemens (a German businessman and tax advisor to the German government) over half a century ago, in the year 1918. Von Siemens made his proposal for VAT in a vain attempt to replace the newly created German business-turnover tax. Three years later T. S. Adams suggested the use of the tax in this country, and in 1921 it was made a part of an amendment to the Revenue Act of 1921.

For the next three decades the only significant consideration given to VAT of any significance was that of Gerhard Colm and Paul Studenski, who conceived of the tax as a means of taxing business so that it would pay for government services on the benefit thesis (those taxes which are considered as a charge for the benefits derived from governmental services). Other proposals of this nature were made at the state level (Alabama and Iowa in 1932), but it was not until the year 1953 that the state of Michigan imposed a very low rate modified version of the value-added tax instead of a corporate income tax. The tax in Michigan was mainly the result of a political compromise and ended in the repeal of the tax in 1967 when an income tax was adopted.

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Three years prior to the Michigan tax Japan was considering the adoption of VAT, but by the year 1954, it had completely abrogated the proposal because of the controversy over the incidence of the tax (whether the tax could be shifted forward to consumers). The same year that the Japanese government rejected the VAT idea, the French government introduced it in an effort to replace its unsatisfactory turnover tax (a sales tax imposed at every level of production and distribution). In this case, the tax was imposed on a gradual basis that restricted its use to manufacturers with a separate tax on services.7

The European Economic community (Common Market) became interested in VAT in the early 1960's and has since adopted it as the common form of tax for its members. This was done to avoid a cascading effect in the final price, in order to provide a determinable base for export credits, and to overcome the tendency to vertical integration as a tax saving device. All common market countries now have VAT, and other countries having VAT include Sweden and Norway, and a limited VAT is in effect in Greece, Turkey, and Finland.8


SEQUENCE OF CHAPTER DEVELOPMENT

With the controversies surrounding the tax reform issue, one can see that value-added taxation is an excellent subject for discussion. The approach of this paper includes the following: In order to fully develop the concept and theoretical aspects of the VAT, basic tools and vocabulary used in taxation theory are briefly examined. Next, an introduction to the concept and the theoretical aspects of VAT is carefully explained. In addition, there is an in-depth explanation of the incidence and effects of VAT. There is also an examination of the European Experience with VAT and a look at the tax for the United States as a possible substitute for the corporate income tax and the property tax. The final discussion concentrates on some observations, conclusions, and recommendations concerning VAT.
CHAPTER 2

THEORETICAL CONCEPTS ASSOCIATED WITH TAX THEORY

VOCABULARY AND BASIC TOOLS USED IN TAXATION THEORY

The word tax has been defined as "a pecuniary charge imposed by authority upon persons or property for public use."\(^9\) The idea of a tax, however, encompasses more than the preceding definition. Governments levy taxes not only to raise funds, but also to control and/or reduce private expenditures. Therefore, a more meaningful and comprehensive definition would be one stated in terms of income flows:

A tax is any leakage from the circular flow of income into the public sector, not counting loan transactions and direct payments for publicly produced goods and services up to the cost of producing these goods and services.\(^10\)

Taxes can be classified as either direct or indirect depending upon the method of collection. For example,


the income tax is paid directly by the taxpayer to the appropriate governmental authority. On the other hand, sales taxes are paid by consumers of goods and services to the government, but the tax proceeds reach the government indirectly through the retailers who act as a collecting agency.

Each tax has a base upon which it is levied. The base of the individual income tax is income and the base of the value-added tax is the value-added by each business. In the simplest terms, the firm's base for value-added is equal to its net sales less all of its purchases from other business firms.

Taxes also have a rate or series of rates that can be either progressive, proportional, or regressive. The rate is the amount of the tax expressed as a percentage of the tax base. The total amount of the tax is equal to the base times the rate \((B \times R = T)\) or \(R = \frac{T}{B}\). In the formula, if the base increases \((B)\) and the rate \((R)\) decreases, then the tax is said to be of the regressive type. If the base \((B)\) increases as the rate \((R)\) remains constant, then the tax is said to be of the proportional type. Lastly, if the base \((B)\) increases and at the same time the rate \((R)\) increases, the tax is called progressive.

An important factor in progressive rates is that they may fluctuate as the base increases. That is, they may advance irregularly, regularly, at a slow or rapid rate
of increase, or with a constant or changing acceleration. A progressive rate that becomes constantly less in acceleration as the base increases is said to be degressive.

Frequently, tax structures are designed by comparing the tax paid by individuals with their net income. In this case, if the rate is higher for higher income individuals, and lower for low income individuals, then the rate is said to be progressive. Using this method, one could define a progressive tax rate as one that reduces inequalities. Therefore, one could define a regressive rate as one that increases inequalities.

Many taxes (most excise, sales, payroll, and business taxes, for example), are frequently collected from one group of persons (manufacturers, retailers, employers and businesses), while in fact, it is someone else who pays (consumers, employers, landlords, stockholders) through higher prices, lower wages, lower rent and dividend payments, etc. When the tax is passed on to someone else through one of these avenues, then the tax incidence is said to be shifted forward. The incidence (or the final resting place of the tax burden) lies with someone other than the one upon whom the tax was levied. The tax could also conceivably be shifted backward placing the incidence, for example, on one of the manufacturer's suppliers.¹¹

Sales taxes are all alike in that they are imposed on the sale of commodities or services. Where they differ is in the generality of the tax, the manner in which the tax burden is computed, and the stage in the production and distribution process at which they are imposed. The sales tax with the greatest possible scope is one levied on all sales of goods and services at all stages of production.

Concerning the manner of computing the tax, rates may be based either on the physical unit of sale or on the dollar volume of the transaction. Rates based on the physical unit of sale are known as specific sales taxes, and rates based on dollar volume are known as ad valorem taxes. The former are illustrated by federal levies on gasoline and the latter are illustrated by the federal excise tax on automobiles and by state general retail taxes. Ad valorem taxes impose a money burden that is a fixed percentage of the sales price, and they place the same proportionate burden on all products. Specific taxes make the relative tax liability vary inversely with the price of the commodity.

Sales taxes may be classed into two groups. This is done according to the stage in production and distribution. The two major groups are multiple-stage and single-stage. The value-added tax has some characteristics of each and can be considered a third form. Multiple-stage taxes apply to all stages in production and distribution; or, stated differently, to all transactions through which
commodities pass on their way from their initial step in production to their final sale to consumers. The turnover tax (where taxable stages vary with the number of market transfers or turnovers in the production and distribution process) is one example.

Single-stage taxes, as the name implies, apply to commodities only once in production and distribution. There are three possible levels at which the tax can be applied. One is at the point of sale by the manufacturer. The manufacturer's sales tax, as it is called, applies to the sale of finished goods. The second level, called the last wholesale transaction, is a wholesale sales tax that applies to the sale to the retailer on the last wholesale transaction (whether made by the manufacturer or the wholesaler). The third level is the retail sale, the sale to the final consumer.

The value-added tax is considered a hybrid of the multiple-stage and single-stage taxes. The reason is that the VAT involves multiple application of the tax rate, but it produces the same overall distribution by commodity as a single-stage tax. It also applies at all production and distribution stages, but only to the value-added by each firm through its production and distribution activity. There are three types of value-added taxes that can be distinguished. One is called the gross product type,
another the income type, and a third the consumption type, all of which are discussed below.\textsuperscript{12}

HOW THE VALUE-ADDED TAX WORKS

As its name implies, a VAT is a levy on the value added to a material, service, or commodity as it moves through each stage of production and distribution. Stated another way, it is the tax imposed on a business firm on the value that the firm adds to the goods and services it purchases from other business firms. As the firm purchases these goods and services, it adds value by processing or handling them (using its own machinery, labor, buildings and other capital equipment). It then sells its final commodity to consumers or to other business firms. To illustrate, assume that a farmer harvests his wheat in order to sell it in the market place. Now suppose it is sold to the miller who processes the wheat into flour. At this point, value has been added. Suppose the miller sells the flour to the baker who makes bread. Again value has been added. Finally, suppose the baker sells the bread to the grocer, who in turn sells it to his customers. Here again value has been added. Using this illustration in numerical form will help clarify the explanation of value-added taxation. Assume that Congress enacts a value-added tax of five per cent.

Now if the farmer harvests his wheat and sells enough to make a loaf of bread to the miller for 20 cents, the farmer pays a value-added tax of 1 cent based on value added (20 cents \times 5 \text{ per cent rate} = 1 \text{ cent tax}). If the miller processes the wheat into flour adding 10 cents value, he then sells the flour to the baker for 30 cents (20 cents cost + 10 cents value added = 30 cents). Since the miller added 10 cents of value during the process, he pays \frac{1}{2} cent VAT (10 cents value added \times 5 \text{ per cent rate} = \frac{1}{2} \text{ cent}). As the baker makes the bread, he adds 20 cents of value. When he sells the bread to the grocer for 50 cents (30 cents cost + 20 cents value added = 50 cents), he pays VAT of 1 cent (20 cents value added \times 5 \text{ per cent rate} = 1 \text{ cent tax}). Finally, the consumer buys the bread from the grocer for 60 cents (50 cents cost + 10 cents value added = 60 cents) and the grocer ends up paying VAT of \frac{1}{2} cent based on value added (10 cents value added \times 5 \text{ per cent rate} = \frac{1}{2} \text{ cent tax}). The final selling price totals 60 cents and the total 5 per cent VAT that is levied totals 3 cents.\(^{13}\)

Since each business firm knows that the tax is to be levied, the following illustration seems more likely:

Although the farmer really adds only 20 cents value, he ups his price to 22 cents to the miller. In this way, he shifts the incidence of the VAT forward. The miller

pays 22 cents, adds 10 cents in value, but sells to the baker for 33 cents (not 32 cents). He, too, has shifted the incidence. The baker pays 33 cents, adds 20 cents in value, but sells at 55 cents (not 53 cents). Thus, he shifts the incidence. The grocer buys at 55 cents, adds 10 cents value, and sells at 66 cents (not 65 cents), thus shifting his incidence. The result: the total revenue is still 3 cents from VAT, but the price of bread is 6 cents higher than it would have been in the absence of VAT. The ultimate consumer pays all of the VAT (3 cents) and also pays 3 cents more because of a higher price.
CHAPTER 3

INTRODUCTION TO THE CONCEPT OF VALUE-ADDED TAXATION

VALUE-ADDED TAXATION AS IT RELATES TO THE ABILITY-TO-PAY AND BENEFIT PRINCIPLES OF TAXATION

The concept of value-added taxation has been developed through two principles of taxation: the ability-to-pay principle and the benefit principle. The ability-to-pay principle has two separate ideas. It states not only that the rich should pay more in taxes, but also that those who have the same income should pay the same taxes. The second idea, that "equals be treated equally," is called horizontal equity, while the proper division of the tax burden among people of different ability to pay is called vertical equity.

Though many economists agree that taxes should be levied according to ability to pay, they don't agree on the measure of this ability. Some economists argue that all taxes (whatever their nominal base) should fall on individual incomes. They say that when all the shifting is done every tax is paid by somebody (reducing the individual's income). Other economists argue that wealth should be the appropriate measure of ability to pay. They contend that
it would double taxation to tax both income and wealth, since wealth produces income (which is taxed). But nevertheless, they say, the mere possession of wealth may yield satisfaction on its own. More recently some economists have argued that consumption rather than income or wealth should be the proper base of taxation. Also, they say, that it is consumption which measures the resources which an individual actually withdraws from the economy for his personal use. Accordingly, that part of his income not consumed (savings) adds to the country's capital stock and serves to raise total productive capacity.\(^{14}\)

The benefit principle demands in principle that the amount of taxes paid by each individual be equal to the value of the goods and services provided by the government. The main attraction of the principle is that it is equitable; that is, each individual receives benefits from the government in accordance with the amount of tax contributed. Since persons pay for the output of the private sector on the basis of the amount of the product which they receive, many economists argue that they should do likewise in the governmental sector. Most publicly produced goods (social and merit goods), they argue, cannot be broken up in such a way that each individual can be charged a price for his share. But more significantly, they say, is the fact that

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with many public goods the pattern of distribution of the tax burden (incidence of the tax) that would result is contrary to the equity concept of taxation.

These economists contend that, if the burden of the tax levied to finance public goods falls on the same income class for which public goods are intended, then the benefit principle would be applicable (certain types of public goods can be financed on the benefit basis without objectionable results—for example, highway construction). For the overwhelming majority of public goods produced, however, these economists argue that the burden of the tax levied to finance public goods does not fall on the same income class for which public goods are intended. There is a lot of controversy over the validity of this argument, since the incidence of many taxes is in dispute. Thus, different versions of the benefit principle are advocated on the basis of the intended incidence of the tax under consideration. This is discussed more fully below (in conjunction with VAT as a business tax).\(^1\)

With these principles, the VAT has been considered as a method of complementing indirect personal taxation and business taxation. Most sales taxes of any importance have been advocated on the basis of an indirect method of personal taxation. That is, they are used as a substitute for

\(^{15}\text{Kenyon E. Poole, Public Finance and Economic Welfare (New York: Rinehart and Co., Inc., 1956), pp. 59-60.}\)
taxes on the incomes of individuals in conjunction with the ability-to-pay principle of taxation, or with some assumption regarding the benefit principle of taxation.

Sales taxes, in most cases, have been intended as a substitute for the direct expenditure tax, which implies sales taxes as a method of taxing individuals in accordance with their consumption expenditures. Assuming first that some income inequality characterizes most economic systems, and second that the proportion of consumption expenditures to income varies inversely with income levels, sales taxes must be regressive. Sales taxes, however, can be altered so as to approximate income taxation rather than expenditure taxation, as would be the case, for example, when they avoid regressiveness by reaching individual savings as well as consumption. If the tax structure can accomplish this, it is considered capable of implementing either the ability-to-pay principle or the benefit principle of taxation.

When VAT is considered as a business-benefit tax, the benefit principle of taxation is implied; however, as mentioned above, there are different versions of the benefit principle, and they may be grouped into three main categories. These versions are based upon the expected distribution of benefits from the governmental services financed by the tax and the expected incidence of the tax.

The first category includes taxes that represent the same benefits-to-individuals principle applicable to
the personal indirect taxes discussed above. Thus, the tax is supposed to raise the prices of commodities purchased by consumers by the amount of the tax, thereby approximating a direct spending.

The second category includes those taxes which are considered as a charge for the benefits derived from governmental services. These services can be regarded as providing a direct benefit to business enterprises with the result that business costs are lowered. Advocates of this concept realize that VAT is a type of sales tax and can, therefore, be shifted forward in commodity prices, but they place less emphasis on forward shifting than the advocates of the first category. Their absence of concern with the allocation of the tax burden among individual taxpayers is apparently based upon the assumption that the tax is merely merged with other business costs. Other advocates indicate that, when benefits from government services do not result in lower costs to individual buyers of final commodities, the owners of the productive factors benefit.

The last category consists of taxes that are not expected to be shifted forward, their being the least conventional of sales taxation. In this case it is expected that the tax will rest on profits and, thus, on the owners of the business. If the tax rests on profits, then it is assumed that the owners of the business receive the
benefits from government expenditures. 16

VALUE-ADDED TAXATION AS A METHOD OF IMPLEMENTING INDIRECT PERSONAL TAXATION

As previously stated, sales taxes of any significance have been intended as indirect methods of personal taxation. Therefore, in the following discussion, the VAT concept is examined as a method of implementing indirect personal taxation rather than as a method of business taxation.

Gross product value-added taxation and the income type of value-added tax are both indirect taxes that come under the income principle of taxation. Under the income principle of taxation, the government may use a direct approach and tax individual incomes by having taxpayers report their incomes and apply the appropriate tax rate. Or the government may use an indirect approach and impose a sales tax, which is expected to result in a commensurate increase in prices of commodities purchased by the individual, thereby lowering real income.

The income principle requires that the tax reach both the savings of individuals and their consumption. If direct assessment is used by the government, the tax is imposed on an individual's total income receipts (thus

reducing his income), whether the income is headed for savings or for consumption. If the indirect approach is used by the government, then it is imperative that the sales tax apply to sales of investment goods headed for final business use, as well as to sales of commodities headed for consumption use. To explain in other terms, the tax applies to business purchases of goods usually capitalized and depreciated rather than expensed. In this way, the savings of individuals are reached in a round-about way through their use by business firms in purchasing capital goods.

Concerning depreciation on a capital item; if it is allowed and the indirect approach is used, then the tax paid at the time of acquirement is no longer part of the depreciation charges. This is true because the tax otherwise due on the final commodity is reduced by the amount of tax represented in the depreciation granted on the capital item. The treatment of a capital item in this fashion, using the indirect approach of the income principle, is termed the income-type of sales tax. If depreciation is not allowed, then the term is called the gross product-type of tax.

Under the direct income tax, allowing depreciation reduces the taxable receipts of individual incomes or the income of corporations under the corporate income tax. Under the indirect approach, the taxable sales of business
firms are reduced by the same deductions for depreciation which would have been used under the direct approach.

As already stated, the income principle may be applied to the ability-to-pay or to the benefit principle. If the benefit principle is assumed, it is concerned with the distribution of governmental benefits to individuals. These individuals are expected to pay the tax either directly or through price increases in the commodities they purchase. The principle can also be assumed in terms of benefits to savers and consumers (in relation to income levels) attempting to decide whether they are distributed proportionately or progressively.

If the indirect method is used, these taxes cannot be patterned to the requirement of individual situations with the accuracy available with the direct method (neither personal allowances nor planned progression is feasible). If the income type of VAT is implemented, it is assumed to constitute proportional taxation, and the gross product type of VAT is assumed to be progressive.

One last point should be made on the subject of the income principle. Income taxes (both direct and indirect) may be considered as reaching the economy's aggregate income. If depreciation is disallowed, the tax base is said to be equivalent to national income. This last point, of course, is the distinguishing feature between the gross
product-type of VAT and the income-type of VAT.\textsuperscript{17}

The consumption-type of VAT is an indirect tax that comes under the consumption principle of taxation. Under the consumption principle of taxation, the government can impose a tax on individuals (consumers) by requiring that each report the amount of expenditure during a given period of time and apply a given tax rate to this amount, or the government can impose a sales tax so as to reduce the real value of the individual's (consumer's) income through an increase in the price of the commodities purchased by the individual.

If the second approach (indirect) is chosen by the government and if the tax is to reach every consumer in the economy (and thus aggregate consumption), it is necessary that the sales tax be imposed on all commodities (both goods and services) purchased by the ultimate consumer. Logically, then, under the sales tax all producers of goods and services should be defined as business firms from whom the sales tax is collected, and who are expected to raise prices by the amount of the tax.

The indirect approach (sales tax) under the consumption principle does not allow for the flexibility possible under the direct approach (expenditure tax), which may allow provisioning in the form of personal exemptions.

\textsuperscript{17}\textit{Ibid.}, pp. 37-46.
and planned rate progression. Although such provisioning could be available under the indirect approach, it is usually effected through credits under income taxes imposed simultaneously with the sales tax. Like the income principle, the consumption principle may be applied in conformity with the ability-to-pay or benefit principles.

If a sales tax is imposed in order to reach aggregate consumption (and thus reach only purchases of consumers), it must, in effect, exempt from the tax not only commodities bought by taxable business firms but also their purchases of items headed for investment within the business. Thus, savings from an individual's income (the actual taxpayer) are indirectly exempted.

If interjurisdictional trade is assumed (that is, commodities traded across the boundaries of independent taxing jurisdictions), then one of the jurisdictional principles (the destination or origin principle) must be used. The destination principle is the appropriate rule for applying indirect personal taxes to interjurisdictional trade, since the sales tax is not intended to reach the consumer spending or income of individuals who do not belong to the taxing economy. Thus, the tax is limited to consumers who use their purchases in the taxing economy (in other words, consumers may purchase and use commodities abroad without incurring a tax). Whereas, under the direct personal income tax imposed on the origin principle, the
incomes of consumers are reached whether they use their purchase at home or abroad.

Under both principles of indirect personal taxation, the origin rule may be regarded as equivalent to the destination principle if the independent jurisdictions concerned agree to accept the same tax rates. In this case, the only difference between the origin and destination principles is that the allocation of the tax receipts would differ from those under the destination principle to the extent that imports and exports were not equal.\(^\text{18}\)

AN UNDERSTANDING OF THE TAX BASE FOR VALUE-ADDED

In the illustration above, the value-added by the business firm was, in the final analysis, the difference between its total sales and the total cost of goods and services purchased from other firms, which is the tax base for VAT. It is the purpose of this section to seek further understanding of the tax base for value-added. This is accomplished by discussing the nature of the base and by determining the base for both the economy and individual business firms.

The value-added tax has usually been conceived as a tax on income originating from factors employed within a given geographical area. Income produced in this area

\(^{18}\text{Ibid.}, \text{pp. 22-36.}\)
accordingly should remain in the tax base, even though received by nonresidents, while income received by residents from factors located abroad would be excluded. It is also generally assumed that the scope of the value-added tax should be limited to business enterprise. National income accounting, in defining business enterprise, states that it contributes about four-fifths of the total national income and product.

One of the most difficult problems in this area is the question of what to include in the definition of business. The United States Department of Commerce defines businesses as "all organizations which produce goods and services for sale, at a price intended at least to approximate costs of production."\(^{19}\) It includes all private, profit-making enterprises, mutual financial institutions, cooperatives, and nonprofit organizations servicing business. All of these may be included in the tax base, but exclusions and exemptions of certain activities may occur because of varying concepts of business activity or due to the difficulty of defining the tax base for a particular industry. There may also be other exemptions to reduce the base because of constitutional restrictions (such as interstate commerce).

There are also several controversial problems in

defining the tax base for value-added, the most important of which are depreciation, indirect taxes and subsidies, and imputations. These are discussed very briefly below.

Two difficulties with depreciation seem to be the problem of defining of net capital and the lack of statistical data, both of which prevent the computation of capital consumption allowances in terms of current prices. Another difficulty involves the question of whether or not to apply the term capital to human resources. Indirect business taxes and subsidies involve computing total national income. The difficulty here is with the problem of correcting fictitious changes in national income caused by the use of shifted taxes to finance services to consumers, or nonshifted taxes to finance services or subsidies to business. Correcting this problem involves adjustments by price indexes, which is an impracticable procedure for value-added taxation.

The problem of imputations arises as follows: The official measure of national income and product include items which do not take the form of monetary transactions and thus require imputation. These items include wages and salaries in kind, fuel and food produced and consumed on the farm, the rental value of owner-occupied homes, and interest imputed to financial intermediaries. In principle, the VAT base should include these, but such imputations can
be avoided in the interest of administrative convenience and certainty. It is thought by some, however, that these should be included in the interest of equity. ²⁰

In this discussion, the concepts of national income and product are used as a guide to the tax base for value-added. The reason for this is that most countries, including the United States, consider national income as the basic end of social product; that is, national income accounting techniques consider total product for the year to be equal to total income paid to the factors of production that turn out the product. Also, for the sake of simplicity, the discussion for the economy as a whole is presented under the assumption of a closed economy with two factors of production (labor and capital) and two distinctly produced goods (consumer and capital goods).

There are three types of value-added tax that should be further distinguished: gross product value-added tax, the income type of VAT, and the consumption type of VAT. National income accounting involves three ideas which are related to the tax bases for these. They are, respectively, gross national product, national income and personal consumption expenditures.

As far as the individual business firm is concerned, it operates on the one hand by producing and selling a flow of product values. On the other hand, it pays out (or

²⁰Sullivan, pp. 192-98.
retains) income that occurs in the process of producing and selling its product. Thus, it generates both output and income. Since the business firm's activities can be looked at two ways, the measurement of national output (GNP) can also be approached in a twofold manner.

One approach involves the summing of product values (adding all types of spending on finished or final goods and services). The other approach sums income flows (income derived or created from the production of national output). The first (summing product values) is called the product approach to determining national output (GNP). The second (summing income flows) is called the income approach to determining national output (GNP), and is a measure of national income if certain charges (depreciation and indirect business taxes) are excluded.21

The important points to make, in terms of the value-added base, are that the product approach is considered more suitable for computing GNP and the income approach is considered more suitable for arriving at national income. National income differs from gross national product mainly because it excludes certain charges which are not considered returns to the current factors of production. But rather, these are regarded as costs and are included in the value of final output. Another difference is the inclusion

21Ibid., pp. 199-212.
of subsidies as factor incomes and their deduction in computing GNP. The costs excluded from national income but not GNP are primarily depreciation and indirect business taxes.

Perhaps these concepts can be seen more readily by digressing somewhat for a moment. Professor Shoup utilizes the concept of national income accounting in explaining whether VAT is a tax on product, income, or sales. The total value added by all business firms, according to Shoup, is the value of the total product of the economy. A tax on value added is thus a tax on the total product or the total output of the economy. Shoup explains that forgetting the problems caused by depreciation of capital equipment, the value added by a business firm is equivalent to the sum of total payments of wages, interest, and rent paid to individuals by the firm, plus the profits that it earns. Thus, explains Shoup, for the economy as a whole, total value added is the sum of total wages paid, interest and rent paid to individuals, and profits earned by all firms. A VAT is, therefore, a tax on the total income of the economy. Shoup continues:

The value-added tax is, then, either a tax on product or a tax on income depending from which angle we choose to look at it. This is not surprising: under national-income accounting, total product for the year equals total income paid to the factors of production that turn out the product.
Shoup goes on to say that in a stabilized economy where capital equipment is wearing out as fast as it is being produced, and where there is no inventory accumulation or depletion, total value added is the same as total retail sales. Shoup contends that all goods and services produced and distributed are eventually sold "at retail." Accordingly, then, a retail sales tax strikes the same amount as does a tax on the total product of the economy.

In its generally understood meaning, therefore, total retail sales equals total value added, total product, and total income, in a stabilized economy. Shoup also explains the relationship of the income tax and the general sales tax to these concepts. If the income tax were levied on all income without exemptions and other nonbusiness deductions, it would also strike the same total base as the true retail sales tax or the VAT. A general sales tax is quite different. It strikes the total of sales, which depends not only on the amount of production but also on the degree of vertical integration. 22

Thus, in this analysis, the base for the value-added tax (whether of the gross product-type, the income-type, or the consumption-type) is computed either through the income or product approach. Under the income approach

items are added, and under the product approach items are subtracted. The subtraction method (starting with sales and deducting purchases) and the addition method (adding profits, wages, rent, and interest paid to individuals) are considered to be equivalent. This is true, however, only in the instance where no capital items are involved. Where capital accumulation or depletion is occurring, the subtraction method gives the consumption-type of VAT, and the addition method gives the income-type of VAT. (The addition method can be converted into the subtraction method by adding back depreciation charges and subtracting capital outlays and net additions to inventories.)\textsuperscript{23} It should also be noted that the subtraction method can be applied in two different ways, the "sales method" and the "tax credit method." These methods will be discussed more specifically later.

The gross product-type of VAT does not allow for the deduction of capital outlays or depreciation. In other words, purchases for capital outlays from other business firms are not deductible from total sales. Nor does it allow for the depreciation of such capital outlays in subsequent years. Under this type of VAT capital outlays include any asset that is not used up within the tax year

obtained; therefore, for an asset to be deducted by the business firm, it must be used up in a calendar-year tax year. But even if the asset is of the type that can be used up in a tax year, it is not deductible unless it is actually used up entirely within the tax year.24

The base for the gross product-type is usually computed through the product approach and thus the subtraction procedure is utilized. The formula for computing the gross product-type of base for the individual firm is gross receipts from sales (from the supply of services including rents, and from interest plus the value of capital investment, inventory accumulation, and the owner's personal consumption of the firm's products) minus purchases of goods and services from other firms.25

The aggregate tax base for all individual firms in a closed economy with two factors of production is gross national product, which equals consumption plus investment, and also equals wages plus net profits and depreciation (\(\text{GNP} = C + I = W + P + D\)). As is apparent from the identity, the base suggests the concept of gross national product rather than national income or consumption. It is also clear from the identity that the base includes depreciation.

Like the gross product-type, the income-type of VAT

24Sullivan, pp. 211-12.

25Shoup, Public Finance, pp. 251-52.
does not allow for the deduction of capital outlays purchased from other business firms. It does, however, allow the business firm to deduct an allowance for depreciation over the useful life of the capital item; that is, the income-type allows the VAT base to be reduced by the amount of depreciation occurring within the tax year. This particular type of VAT requires that an excess of year-end inventory over year-beginning inventory be included in the tax base, and it allows for the excess of year-beginning inventory over year-ending inventory to be deducted. An increment in inventory represents value added for the business firms that must be taken into account.26

Concerning the base for the income-type of VAT, it may be computed in one of two ways: by the addition procedure or the subtraction procedure. Using the addition procedure, the base for the individual firm is the sum of wages, salaries, interest paid to individuals, and value-added profits (which should include estimated profits on the owners' consumption of the firm's products). It is vital that each component be defined so as to exclude value added by other business firms.

The subtraction procedure for computing the tax base applies the product approach under which certain outlays are deducted from certain receipts. The formula may

26 Ibid., p. 252.
be computed as follows: receipts from sales (net of returns, cancellations, cash discounts, and bad debts) and from the interests, rents, or the supply of other services minus current account purchases of goods and services from other firms, including all rental payments and interest payments to other business firms commodities, capital investment, and net additions to the inventory. 27

Using the assumption of a closed economy, the aggregate tax base of the income-type of VAT (all business firms) is \( NI = C + I - D = W + P \), or net national income equals consumption plus investment minus depreciation equals wages plus net profits (includes interest). 28

The consumption-type of value-added tax allows business firms to exempt the purchase of capital goods in computing its tax base. This type exempts capital by allowing the full value of the capital goods to be deducted from sales in the year of purchase. Unlike the income-type of VAT which allows a depreciation deduction year by year over the useful life of the item, the consumption-type of VAT allows a one-time full cost deduction in the year of purchase with no allowance for a depreciation deduction in the years to follow. (There is one exception which is discussed below.) (It should be noted here also that even though some of the capital goods purchased by the business

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27Sullivan, pp. 199-204.

28Shoup, Public Finance, p. 252.
firm go to increase inventory, it is ignored in computing value-added.) This, of course, is not true under the income-type of value-added.\textsuperscript{29}

The subtraction procedure for computing the tax base for the individual firm is as follows: receipts from net sales, from the supply of services including rentals, and from interest, minus purchases of all goods and services from other business firms (including interest paid and rental payments, inventory accumulation and investment or capital outlays) plus the owner's personal consumption of the firm's commodities.

Although the subtraction procedure is generally used on computing this tax base, the addition procedure can be used. To convert the subtraction method to the addition method, simply add depreciation to the addition formula for the income-type base and subtract capital outlays and net additions to inventories. Thus, the formula is wages and salaries plus the interest paid to individuals plus income-type of value-added profits plus depreciation and sales of capital assets minus capital outlays and net additions to inventories.\textsuperscript{30}

Although the consumption-type of value-added tax has been explained by allowing deductions of cost of capital outlays in the year of purchase and disallowing

\textsuperscript{29}Ibid., p. 253.
\textsuperscript{30}Sullivan, pp. 209-10.
depreciation in other years, it can be formulated in an alternative way. The formula could read: disallow deduction of cost of equipment in year of purchase and allow depreciation in other years, but exclude from the value-added in other years the interest earned by the investment. This formula may be termed the interest-exclusion variant. In the above analysis, the formula used is called the deduction variant and is used most often.\(^{31}\) The formula for the interest-exclusion variant of the consumption-type base is computed by subtracting interest on investment from the income-type base. Either the addition or subtraction method may be used, interest being deducted from both the income and product sides of the account.

The aggregate tax base of the consumption-type of VAT, in a closed economy, is \(W + P + D - I = C\) (wages plus profits plus depreciation minus investment equals consumption), since \(\text{GNP} = C + I = W + P + D\). Because the cost of new capital goods is excluded from value added, the consumption-type has the same aggregate base as a retail sales tax on consumer goods and services. This becomes clearer when it is considered that in a closed economy inter-firm purchases and sales cancel each other, thereby leaving final retail sales as the tax base. Thus, the consumption-

type of VAT is also equivalent to total consumer expenditures.32

Thus far, the discussion of the various types of VAT has been in terms of a closed economy. It will now be assumed that an open economy exists. Since the consumption-type of VAT and the income-type of VAT are the most widely discussed types in this country, the discussion concentrates on these.

Since the value-added tax for an open economy involves at least a two-country world, each of which trades commodities across their boundaries of independent taxing jurisdictions, two-jurisdictional principles must be defined. The first, the distinction principle, says that all commodities having the same destination should be taxed equally regardless of their place of production. That is, its explicit imports and compensatory duties and export tax rebates are intended to guarantee that all commodities consumed within the taxing jurisdiction are equally taxed regardless of where they are produced. The second principle, called the origin principle, says that all commodities having the same origin (place of production) should be taxed equally regardless of where they are used. That is, its implicit export taxes and import subsidies are meant to insure that all commodities produced within the taxing jurisdiction are equally burdened regardless of where they

are consumed. Under the destination principle, therefore, imported commodities should be taxed in the same way as commodities produced at home while exports should be completely exempt from tax. And under the origin principle the tax should be applied to exports rather than imports.

Now suppose country I manufacturers a machine using only labor and then sells it to country II for $200. The government of country I collects a tax on sales by firm A in country I including sales for exports less purchases from other business firms. In country II, firm B receives a tax credit on its negative value added (sales of firm B less purchases from other firms including imports) from the government. For firm A, sales less purchases from other firms is $200; therefore, the total tax collected by both countries together is $0.

The example above illustrates a value-added tax using the origin principle (including a tax rebate for negative value added). As stated previously, the destination principle exempts exports and taxes imports. Thus, firm A's export sale would be exempted, and firm B's import purchase would be taxed. In this way, country I receives no tax revenue and country II would receive no tax revenue because of the tax rebate for negative value added. The important point is that as long as the tax rates are the same in both countries, then the world tax would be the same for either principle (in this case, $0). Under the
origin principle, country I would collect tax on $200 and country II would give a tax rebate on $200. Under the destination principle, neither country would collect or rebate any tax, which makes it much simpler. If the tax rates of the two countries are different, then the world tax under the destination principle remains at $0; while under the origin principle, the world tax would be positive if country I's tax is greater than that of country II (and negative if the reverse).

It seems that, if the world aim is not to tax value added in the form of net investment in the year of net investment, but only later as consumption occurs, the destination principle is better suited for this goal in a world of differing tax rates than is the origin principle.

An important point concerning financial flows (interest payments on debt) of different countries is that they need not invalidate the formula for the consumption-type of VAT, if these flows are treated consistently in the paying and receiving countries.33

Using the assumption of an open economy, the aggregate tax base for the consumption-type VAT is consumption plus investment equals wages plus profits plus depreciation minus exports and plus imports. In terms of national income accounting, X is exports, M imports, and I capital goods purchased or created for own use (C + I = W + P + D -

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33Ibid., pp. 255-56.
X + M). Notice in the formula the destination principle is used where X is excluded and M is included in the tax base.

The income-type of VAT in an open economy is just as simple to administer under the destination or the origin principle; that is, exports and imports are either completely exempt and completely taxable, respectively, or completely taxable and completely exempt.34

Concerning the tax base for the individual business firm, generally, if the origin principle is applied, the tax base must include the value of exports that have appeared in the taxing country while purchases of imports are deductible up to their import value. So that values are attributed to the proper country, it is necessary to apply either a system of source rules or allocation formulas. If the destination principle is used, imports of deductible purchases may be subtracted in computing the tax base for the business firm in the same way purchased from domestic firms. The export transaction, however, must be exempt from tax and the exporter reimbursed for any value-added tax incorporated in the prices of the commodities which he purchased.

**METHODS FOR COMPUTING THE TAX ON THE VALUE ADDED**

As previously mentioned, there are three general

34Ibid., pp. 256-57.
methods of computation of the value-added tax. These are discussed more specifically in the following.

Since the VAT is produced only by factors of production, it can be computed for any one firm by adding the factor payments made by that firm, including profits. This is the appropriate one for the income-type of VAT. The addition method consists of adding specifically the payments made by the firm to the factors of production employed in turning out the product such as wages, interest, rents, royalties, and profits. If the business firm builds its own capital good, this method captures the value that is added by the firm. Inventory accounting is the same as under the income tax.

The subtraction method is the appropriate one for the consumption-type of value-added tax. In this case, the business firm deducts from its sales its purchases from other firms, including purchases for capital equipment. The results of this deduction, the difference, is the value that it adds by its own activity (except that the business firm's net return on its capital equipment is freely exempted by the deduction allowed in the year of purchase). This method is really simplified as compared to the addition method, since no account needs to be taken of capital equipment produced within the firm, and no accounting inventory is required.

Using the subtraction method, one procedure, called
the sales or cost-subtraction, was discussed above. There is also another variant of the subtraction method called the tax credit method. It is becoming the most popular method. Using this method, the business firm (without any deduction) applies the VAT rate. From the results obtained, the business firm subtracts the similar taxes shown on the invoices of firms from which it has bought materials. Thus, tax on purchases are subtracted from sales and the tax rate then applied. Under the tax credit method the matching tax on purchases and tax on sales is usually done on a monthly basis.35

The tax credit method has one big advantage over the sales subtraction method and the addition method. This advantage stated simply is that it can be useful in reducing the rate of the VAT at some stage in the production process without reducing the total tax paid on the total value added. A reduced tax at some earlier stage will give rise to an equally increased tax at a later stage. Thus, the rate on the entire value of any commodity will be the rate applicable at the last stage (usually the retail stage). One disadvantage of this method is the fact that, if one or more of the earlier stages of value added are completely exempt, the tax credit method fails to record the correct amount of cumulative tax paid. The omission can be eliminated, however, by (1) the stage exempted is

the very first stage, or (2) either at the exempt stage, there is a refund of prior tax paid or a shadow tentative tax is computed (shown on the invoice issued by the exempt seller and claimed as a credit by the purchaser). If no tax credit is taken by the exempt seller, all record of earlier tax paid is lost, and no account can be taken of it at later stages where taxation resumes.

Small firms may be exempt at one of the stages, thus reducing their administration costs. If the stage in question is an intermediate one, the tax-credit method concentrates its over-taxation on commodities processed by those small firms. In this situation, large business firms gain a competitive advantage.

Under the subtraction or addition method, the exemption of the small firm at an intermediate stage does not give rise to over-taxation, but revenue is lost by the exemption. This is true because no catching up is possible at a later stage. Considering all, loss of the revenue seems less serious than the injustices that can occur under the tax-credit method.

Although (in the absence of a uniform rate) the tax credit method seems to be the more efficient method of computing the VAT (if the tax is expected to be shifted forward through an increase in product prices by the amount of the tax), it has not been universally applied either in
theory or practice. When the VAT is recommended as a business tax (assumes backward shifting to factor incomes), it is frequently assumed that the sales methods be employed. This is not to say that the use of the tax-credit method or the sale method in this manner reflect varying views on the incidence of the tax.

In considering differential taxation of certain consumer goods (if they are to be taxed lightly and others heavily, some being necessities and others luxuries), the VAT is not as appropriate as a retail sales tax, but better than other general sales taxes. Because of uncertainty in the category of which intermediate products appear at retail, it is not likely that exemption can be granted to early-stage sales of raw materials or cloth.

The tax discriminates if the tax credit method is employed (provided no gap in the credit chain exists). This method is virtuous in this respect because of its power to make the overall rate depend on the rate imposed at the last stage of production or distribution, no matter what the higher or lower rates are at various earlier stages.

The tax credit method can be restricted with respect to the exemption of the final product, not as a complete exemption, but only as an exemption of value added to that particular product at that final stage.
As far as discrimination is concerned among various types of consumer goods, the subtraction and addition methods are not appropriate. (The tax collected at the last stage cannot so easily be adjusted for early-stage taxation.)


AN APPRAISAL OF THE ADMINISTRATIVE EFFICIENCY OF THE VALUE-ADDED TAX AS COMPARED WITH OTHER TAXES

It is generally believed by many proponents of the VAT that it offers the advantage of administrative simplicity as compared with other general taxes for which it is likely to substitute. Many believe that the tax is easier to administer than the single-stage manufacturers' or retailers' sales tax, but they also believe that these single-stage taxes are administratively superior to the VAT. Others emphasize its administrative simplicity as compared with the corporate income tax and personal income tax.

An appraisal of the administrative efficiency of the value-added tax as compared with the taxes that it may replace is very important. In this study, it is compared with the individual income tax, sales taxes, and the corporate income tax. In view of this, these comparisons are in conjunction with the following: the number of taxpayers, the frequency of returns, the rate of tax, the
difficulty of identifying taxable persons, the problem encountered in computing the tax base, and lastly the attitude of the taxpayer. (It should be noted here that the tax will also be compared administratively to an existing system to which it may enter.)

The U.S. Treasury Department has noted that the number of taxpayers is a factor responsible for a considerable portion of administrative and compliance costs. In this sense, the VAT has a great advantage over the income tax or the spendings tax. One reason for this is that the VAT would involve a much smaller number of taxpayers than the personal income tax. The VAT also has some advantages over the retail sales tax, the manufacturers' sales tax, and the wholesalers' sales tax. The advantage here relates to its technique in facilitating the exemption of small businesses. The last point in relation to the number of taxpayers concerns VAT and its advantage over the turnover tax and the corporate income tax. It is recognized that the VAT has no advantage over the former, and it is considered less advantageous than the corporate income tax. The corporate tax would cover a smaller number of taxpayers than the VAT.37

In comparing the number of returns, the VAT and other sales taxes usually require a monthly or quarterly

37Sullivan, pp. 224-27.
return, whereas the personal and corporate income taxes are collected directly from individuals on an annual basis.

The tax base which makes possible a relatively low effective tax rate has an administrative advantage over one requiring a higher effective tax rate. The U.S. Treasury Department has indicated that higher rates create an incentive to evasion and intensify competitive inequalities, particularly when the tax is new. Generally, then, for a given revenue yield a tax that is of wide scope and thus permitting a lower effective rate, is preferable to one imposed on a limited basis. To continue with respect to the rate required to raise an equal amount of revenue, the income type of VAT is on an equal par with the personal income tax of equal scope. The consumption-type (deduction variant) would be considered on an equal par with a spending tax of equal scope. Because the turnover tax encompasses more products and more stages of distribution than the retailers', wholesalers', and manufacturers' sales taxes for a given amount of revenue, a smaller rate is required. A value-added tax imposed through the retail stage and the retail sales tax would make possible lower effective rates than the wholesalers' and manufacturers' sales taxes. Again, this is true because of the inclusion of more activities. The VAT in any of its forms would require a much lower rate than the corporate income tax. The corporate tax has a much smaller base (net profits) than the
VAT which has a much broader scope.

Identifying taxpayers involves two problems. One is that of defining taxable activity, and the second is the problem of taxing services. The identification of taxpayers under any tax on current receipts requires a definition of taxable economic activity. This involves such issues as the casual sale and the status of nonprofit organizations. Sales taxes have usually been characterized by numerous exclusions and special exemptions which complicate the problem of identifying taxpayers; whereas, with the income tax, this is not a problem. In that the identification of taxpayers involves defining taxable activity, it is significant that identification under sales taxes usually rests on the definition of a business (defined either broadly or specifically).

The second problem is that of taxing services. Identifying taxpayers, in some respects, is simpler under sales taxes which apply to services than under taxes usually restricted to sales or products. It is generally agreed that the general turnover tax and the VAT should be imposed on services. And most economists would agree that the retail sales tax should include services. The Treasury Department states that the theoretical reason for exempting services of the retail sales tax is the fact that there is substantial difference in the nature of most transactions involving the rendering of services as compared with the
nature of most of those involving the sale of goods. According to Professor Due, the reason for the failure to extend the retail sales tax to services is that it is considered a tax on labor. Due argues, however, that this is not defendable, since the burden of the tax must be considered in terms of the persons who bear it, not in terms of the goods and services the sale of which serves as the base of the tax.\textsuperscript{38} Another reason for the exemption of services for a retail sales tax is the administrative difficulty in taxing the services. In this light, the U.S. Treasury Department concludes that most services should be exempt. In considering VAT, it would encounter the same difficulties as the retail sales tax, but the fact that VAT facilitates an administrative exemption (that excludes small enterprises) is an important advantage.

The determination of the tax base presents a lot of problems for the administration and compliance of the tax regardless of the form used. The most difficult problems are concerned with depreciation and inventory, fringe benefits, the establishment of a uniform price basis, multiple taxation, and lastly exclusion and exemptions. Only the deduction variant of the consumption-type of VAT avoids the problem of depreciation and inventory accounting. The income type and the interest-exclusion variant consumption-

type of VAT present the same problems as net income taxation. The general turnover tax does not require depreciation and inventory accounting, and neither does the spendings tax unless an attempt is made to spread outlays on consumer durables over a number of years.

Fringe benefits are difficult to handle under value-added taxation mainly because they provide opportunities for evasion and avoidance as under corporate income taxation. The big problem presented by fringe benefits under any national income tax is whether or not they are considered business purchases from outside suppliers or supplements to wages and salaries.

There are two groups of pricing problems which are inherent in all forms of the VAT (other than the deduction variant of the consumption-type) and single-stage tax on sales to ultimate consumers. The first group relates to the price adjustments required for sales made at varying stages of distribution. This problem is particularly acute in the case of the manufacturers' sales tax. As Professor Due emphasizes, "the manufacturing level gives rise to one fundamental problem: that of determining taxable price in such a manner as to avoid inequity among firms in various distribution channels."\textsuperscript{39} In the case of the French VAT, the attempt to equalize the tax burden among varying channels of distribution has made it necessary to identify

\textsuperscript{39}Due, \textit{Sales Taxation}, p. 162.
retail sales; and this has seriously complicated the administration of the tax. The second group involves the establishment of a price basis when transactions are between dependent enterprises. That is, transactions that are not conducted at arm's length may bring about prices which are probably below those established by independent firms in order to avoid the tax (concerns final sales of products to other taxable related firms and all sales to nontaxable related firms). This problem is more difficult for a manufacturers' sales tax and a wholesalers' sales tax than for a retailers' sales tax mainly because of alliliation among buying and selling business firms. However, the problem is avoided in the case of a single-stage retail sales tax which exempts sales to business firms and by the deduction variant of the consumption-type of VAT through the retail stage (provided there are no tax refunds on sales to exempt firms and sales are made to nontaxable related concerns). Where the value-added tax has been instituted or implemented, it provides that when selling and buying firms are related, the tax is applicable to the selling price of the purchasing firm.

Another problem for the administration and compliance of the tax in determining its base, is the avoidance of multiple taxation (goods used in production are taxed as well as the final products). It creates some of the most complicated administrative and compliance problems in taxes
based on current receipts; for instance, depreciation allowance, which is a technique used to avoid multiple taxation, which is considered the major difficulty in administering the income tax. The spendings tax avoids depreciation accounting, but runs into equal difficulty in its application to purchases of consumer durables. While depreciation allowances are necessary under the income-type of VAT and the interest-exclusion variant of the consumption-type, depreciation accounting is unnecessary under the gross product-type and the deduction variant of the consumption-type of VAT. Even though there are methods used to modify multiple taxation of the same commodity, these methods involve questions that are just as troublesome.

One method consists of the exemption of "sales for resale" defined in terms of the "physical-ingredient rule," is employed in single-stage taxes. It states that the commodity must either be resold in the same form or enter physically into the commodity which is resold. For example, the manufacturers' sales tax avoids multiple taxation in the manufacturing sphere, but it is limited to materials which become physical components of consumers' goods. Business supplies and capital facilities which are financially integrated in the price of consumers' goods are taxed at least twice (once when sold to the manufacturer for business use, and again when the cost of supplies and depreciation costs are embodied in the final sale of the finished
products). In almost all state sales taxes the physical-ingredient rule is exclusively used; for example, Professor Due states:

In practice, sales taxes have been established in such a way as to exclude—in all cases and usually by definition of taxable sales—sales for direct resale, and sales of materials that become physical ingredients of goods produced for sale by the purchasers.40

Although the rule has been the predominant method used for limiting multiple taxation, it has been largely unsuccessful. Why then, has the rule been predominantly used? The answer is probably because of its simplicity in conception and its administrative practicalability.

Finally, a problem for the administration and compliance of the tax in determining its base, is exclusions and exemptions. Certain exclusions and exemptions facilitate the administration of a tax, but excessive exclusions and exemptions complicate administrative and compliance problems. Why? There are two reasons. The first involves the difficulty of distinguishing taxable from nontaxable transactions and the opportunities provided for evasion and avoidance. The second complication is that excessive exclusions and exemptions reduce the tax base and thus raise the necessary tax rate which intensifies administrative problems and any inequities among the remaining taxpayers. Excessive

exclusions and exemptions have been more prevalent in sales taxation than in income taxation mainly because sales taxation makes it possible to exempt specified commodities. A second reason is that sales taxation is usually recognized as business costs so that taxpaying firms are very conscious of inequalities arising from concessions made to either competing commodities or vendors and soon demand similar favors.  

There are two areas pertinent to the problems created by exclusions and exemptions. One is the exemption of products and the other is the exemption of certain groups of persons. The first, exemption of products or commodities, in sales taxation, has usually been favored by most economists if the exemption relates to certain basic necessities. Professor Due makes this clear. He states that exemptions for food and medicine meet with his approval. He also states that if services are taxed, exemptions for doctors, dental fees, and rental payments should be approved. Others oppose this view on the grounds that food and medicine are sold to upper as well as to lower-income groups and that many are luxury items.

The second area relates to problems created by exemptions of certain groups of persons in sales taxation. Political considerations are usually responsible for these exemptions. The important areas for discussion concern the

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41 Sullivan, pp. 228-52.
groups of government enterprises and nonprofit organizations. The problem of taxing sales by and to government enterprises is one of constitutional restrictions which prevent the uniform application of sales taxes to government enterprises. If, in fact, government purchases are taxed, the government is in a position to shift the tax to taxpayers which may justify the exemption of these transactions. An important consideration in favor of taxing government purchases, however, is that of administrative convenience, for the problem of distinguishing exemption from taxable sales is eliminated.\textsuperscript{42} Another way to view this problem is expressed in the following:

To tax both the purchases and the value added of the government may appear proper if one is able to view the VAT as a benefit principle tax or if one believes that taxation of the entire public sector simplifies assessment by precluding the necessity of distinguishing what is government from what is not.\textsuperscript{43}

The issues just presented for government enterprises can be raised for the exemption of nonprofit organizations. Nonprofit organizations, in principle, provide socially important services just as government agencies do. Just as in the case of direct taxes, however, the exemption of nonprofit organizations in sales taxation creates opportunities

\textsuperscript{42}Sullivan, pp. 253-56.

for avoidance and evasion. This exemption helps build up tax-free economic and political power as well as providing an indirect subsidy (in which the general taxpayer is supporting many enterprises over which his government exercises no direct supervision). An alternative approach to the problem is the use of direct subsidies rather than tax exemptions. In any event this is a very controversial issue. The U.S. Treasury Department emphasizes the administrative problem of administering exemptions. They contend that distinguishing bona fide nonprofit organizations is difficult. They also point out that competitive inequities may arise from the exemption.44

Thus far administration of VAT has been discussed in terms of its relation to the taxes that it is likely to replace. But what about its administrative effect on the existing tax system? In an article by James W. Martin, its likely effects are expressed as follows:

When a new tax system is initiated or even when administration of a single new tax is set up, there is inevitable extraordinary initial expenditure. The amount of the added cost will of course depend on the form of administrative organization, the extent to which the handling of the new tax is different from that of those which preceded it, and other variables. For example, if an administrative agency is highly integrated, ... directly providing for administering a new tax is less extraordinarily expensive than in a state which lacks such integration. The initial expense in such a case is

44Sullivan, pp. 257-60.
reduced too if the new measure fits into already existing operating mechanisms.\textsuperscript{45}

\textbf{THE INCIDENCE AND EFFECTS OF THE TAX ON VALUE ADDED}

The value-added tax, like a general ad valorem tax on sales, is conventionally assumed to be shifted forward to final consumers. In the form of a retail tax, it is the equivalent of a proportional spendings tax collected directly from individuals on the basis of their consumption outlays. In other words, the tax is assumed to be distributed in relation to consumption expenditures.

The orthodox shifting process of the tax is as follows:

Under a purely competitive economic system, the tax will raise the marginal costs of private concerns, making some production unprofitable at current prices. To restore profits, the entrepreneur reduces output, thus freeing resources for government use. Given the employment of these resources by the government and, therefore, probably the same aggregate demand for consumers' goods despite a smaller output, the average price level of consumers' goods will rise by the amount of the tax.\textsuperscript{46}

This assumes full employment, appropriate adjustments in the velocity of money or its supply, and the assumption of collection of the tax by the government before spending the money.


\textsuperscript{46}Sullivan, pp. 263-64.
According to some economists, the orthodox shifting process is not realistic. They contend that lack of additional demand forces production enterprises to reduce factor incomes rather than raise prices of goods. Although a good case can be made regarding any burden on factor incomes as a part of incidence, tax theory has thus far been unable to identify them. There have been a few studies into the effects of sales taxes on relative factor prices using the approach of partial equilibrium analysis and static macroeconomic models. These studies reach similar conclusions, the tax being expected to raise the relative if not absolute prices of commodities. The result of one study described in the following attest to this:

Given pure competition and the condition that the consumers' goods industry is neither labor intensive nor capital intensive (Ralph, Stockfisch, and Musgrave) largely substantiate the conventional position that the incidence is on the ultimate consumer.47

If the classical premises are changed, then the above results must be modified. Many economists maintain that the VAT of the consumption-type will increase commodity prices more or less in the same way as a retail sales tax. Using the assumptions: (1) monetary policy permits the upward adjustment in the price level; (2) fiscal-monetary

policy insures that aggregate real factor demand remains unchanged, and (3) competitive conditions and pricing policies are such as to permit direct adjustment in prices, Due's simple numerical example will explain these results.

A retailer buys an item for $70 and sells it for $100, before tax. A five per cent value-added tax is separately invoiced. The retailer applies the five per cent tax rate to his $100 selling price and charges his customer $105. The retailer himself pays the government the $1.50 tax on the basis of this transaction, and has already had the $3.05 transmitted forward to him.48

The shiftability of the tax becomes more difficult when competing firms have differing rates of purchases of capital equipment to taxable sales in a specific period. That is, under the consumption-type of VAT, firms may treat the tax rebate on capital equipment purchases as a reduction from tax liability on consumption goods sales instead of regarding it as an offset against the tax paid on purchases of capital goods. The purchases, including the tax element, will be deducted from the figure of taxable sales to ascertain value added, on which tax is to be paid. Relatively large capital equipment purchases will, of course, reduce the tax due (if they are large enough, the firm may pay no tax at all), and the rates of tax paid to taxable sales. If the business firm considers the net tax rate, thus determined, as the figure to add to the selling

price, the tax increases will be less for the rapidly expanding firms than for others, and shifting will be restricted.

Among economists who concern themselves with VAT, Due suggests, and indeed many other economists, that both the consumption and income-types of the tax should be regarded as sales taxes, since they produce the same general pure effects as retail taxes, raising the prices of consumption goods relative to income received by factors. Due points out that the total base of the consumption-type is equal to that of a retail sales tax confined to consumption goods, and that the total base of the income-type is equal to the sum of factor incomes. He goes on to say that in an all-consumption economy it makes no difference whether the value-added tax is the sales or income-type. A proportional tax on factor income and a retail sales tax on all final products, according to Due, are equivalent (if institutional rigidities are ignored). Other economists suggest that the income-type of VAT conceptually has results similar to a general flat rate income tax and the consumption-type effects similar to a general tax on all consumption items.

Take for example the statement by Eldridge:

Under the income form of value-added tax, a firm's investment costs are not deductible as incurred. They are written off in determining the annual tax base, as the investment is consumed in the process of production. The difference between receipts and payments to other
firms (except for net investment) reflects all the costs of factor payments, including implicit costs of firm-owned factors and profits. The tax burden will tend to be spread evenly over all incomes derived from private production, in a manner similar to a flat-rate income tax on individuals. Since the tax has to be covered by firm receipts, prices of factors will be lowered relative to the prices of products. With uniform tax shifting, the relative reduction will be proportional for all income sources. All product prices, including capital goods, are affected proportionately, and there will be no change in alternatives available on the income uses side for individuals or households. For the whole private economy, the accounting for value added equals current value of total net product or total factor payments, or a tax base equivalent to total income after capital consumption allowances.49

Due contends that Eldridge's conclusions are valid only on the basis of three assumptions: (1) if the monetary policy employed prevents an increase in the general price level; (2) if there are no rigidities concerning factor and commodity prices, and (3) if additional interest due to "investment" in the tax is reflected in reduced return to savers, rather than in higher prices of the final commodities.

According to Due, the first assumption is most unrealistic. Even if it was used for the income-type, it would have to be used for the consumption-type (thus making the reactions of both very similar). The second assumption neglects the fact that there are serious rigidities which restrict downward movements in factor prices, particularly

49Ibid., pp. 170-71.
wages. And finally, Due says that the third assumption is not altogether realistic given the pricing policies of typical oligopolistic markets and the nature of capital markets. In other words, he says, the fact that more money capital is required for "investment" in the tax on capital goods purchased does not necessarily reduce the return on money capital, given usual monetary policy; the higher total interest cost may simply be reflected in higher prices for final consumption goods. Due concludes that more realistic assumptions (1) monetary policy which allows upward adjustment in the general price level, (2) rigidities in factor prices, and (3) pricing practices and interest rate policy such that the interest on the additional capital required will be reflected in higher consumption goods prices rather than lower return to suppliers of money capital) will produce basically the same results or reactions for both types of VAT and/or a retail sales tax.

Another economist, H. Aaron of the Brookings Institution, makes an interesting observation:

A rational consumer shouldn't care whether the purchasing power of his income is eroded by a ten per cent rise in the price of the consumer goods he buys (forward shifting) or by a ten per cent cut in the difference between income and saving (backward shifting). In either case his real capacity to consume is reduced ten per cent. As an asset holder the person may care deeply whether prices are stable or rise, just as he may be concerned at other
times how inflation will affect the value of his assets, but this concern is over the incidence of inflation, not over the incidence of taxes.50

Thus far, this discussion has assumed a full employment economy, but if full employment is not attained, additional complications appear. If full employment is not attained and the tax is absorbed out of consumption spending, the burden will be the same (resources will be diverted from the private sector to the government sector). However, if a portion of the sales tax is absorbed out of funds which would otherwise have been saved (and investment is not reduced by the same), then total spending will rise and output will expand. In this case, the burden to the economy from governmental programs is much less than in a full employment situation. The burden is being offset in part by increased employment and money income, but the burden can still be regarded as resting with the consumer.

The rise in the price level, because of the tax, may create rises in factor prices, particularly in the case of wages (which are influenced by escalator clauses in labor contracts). If these wage increases occur, then a part of the burden is shifted off the particular factor owners. Thus, those groups who are unable to effect an equal increase in the prices received for their services will feel a part of the burden. The individuals in the

50Joint Economic Committee, Hearings, The Value-Added Tax, 1972, p. 60.
factor groups who feel the burden, when the factor income increase exceeds the tax burden, can vary the tax burden by altering the amount of consumer expenditures. Thus, the tax still takes the form of a consumer levy.

Assuming for a moment that all factor groups could succeed in obtaining factor income increases sufficient to compensate for the higher prices, the government would experience no real gain in its own revenue. A higher level of government expenditures could be maintained, but in that event serious inflation could result. If monetary authorities attempt to prevent wage increases following as a result of the tax, unemployment may result. Because it has been recognized that there is a tendency for higher living costs due to the tax to bring wage increases, many countries have been reluctant to introduce sales taxes in inflationary periods.51

Concerning interjurisdictional trade, if the conventional shifting theory is accepted, the arguments of the destination principle are as follows: a country with a high degree of indirect taxes would be at a competitive disadvantage in world markets. That is, its high indirect taxes boost its prices. If backward shifting of the tax is assumed, the arguments of the destination principle become weak. Thus, the origin principle is the appropriate

51Due, Sales Taxation, pp. 18-19.
one. As is obvious, the validity of both principles depends mainly on the tax incidence.52

If, in fact, the incidence of a general proportional sales tax rests with the ultimate consumer in proportion to his consumption outlays, the tax burden is regressive. That is, it bears more on low-income groups than on high ones. The regressiveness of the tax is alleviated but not eliminated by exemptions of commodities which are a substantial part of the budgets of lower-income groups (food and clothing). It is intensified, however, by the exemption of commodities consumed mainly by the wealthy (services, including net rents from owned-occupied homes). Exemptions, too, seem to favor certain groups of consumers over others with equal incomes. One economist, Davies, made a study of burdens for the several sales tax states that exempt food. He concluded that about half of the consumer units were subject to some progression when the estimated burdens were compared with income, but he regarded the overall burden distribution as basically regressive.

Many economists conclude that a consumption-type of VAT would be regressive, while an income-type would be less regressive (because it would cover net investment, that part of income that households save themselves or through businesses they own). These economists also argue that the

regressivity of the tax can be removed for most of the income distribution making the VAT at least proportional over most of the income distribution. They also argue, however, that if this is done the revenue generated by the tax would be sharply cut. Although some economists argue that the regressivity of the tax can be removed, one British economist, C. V. Brown, who has studied the implications of the value-added tax for the British economy, concludes that any form of VAT would, by itself, likely make the tax system more regressive; that in this sense, the apparent difference between the two forms of the tax (consumption and income) are small.53

Whether the tax is imposed indirectly through increases in commodity prices or directly on factor incomes, it will have further economic effects. These effects also involve the tax and its deviations from the neutrality aspect of taxation.

A tax can modify an economy's allocation of resources through its influence on the taxpayer's choice between work and leisure. This influence operates through the income effect and the substitution effect. The reduction of an individual's disposable money income through a tax is called the income effect which increases his

incentive to work by lowering his marginal utility of leisure (a good complementary to products purchased out of money income). The substitution effect (sometimes called the price effect) makes work less attractive relative to leisure and induces individuals to work less (a reduction in the reward for each marginal unit of his work). Many economists consider the substitution effect of less importance because the extent of the individual's control over his working conditions is limited (most have all-or-nothing commitments to their jobs), because individuals are not motivated by money income alone (desire to do a good job), and because the methods of payment by employers have been adopted to reduce the tax burden (pension plans, for example).54

Nowhere in the available data thus far does personal income taxation appear to have a great effect on the amount of effort that individuals put into their jobs, and when these effects do occur, they appear to be about equally divided between the incentive and disincentive influences. There is, also, no evidence that sales taxation will either favor or impair the work effort as compared with income taxation. If the sales tax is shifted forward, some economists feel that the tax may be more favorable to the work effort than the income tax. Thus, the incidence of the

54Eckstein, pp. 70-71.
sales tax is an important factor in determining the effects of the tax on the work effort.\textsuperscript{55}

To the extent that these concepts are important, the regressive consumption and income-types of sales tax (assuming the incidence of the tax rests on the consumer) must by definition have a regressive income effect. With these type of taxes, the stimulus to work will be greater, the lower the income level. But if the income recipient sees that necessary expenditures have to be cut, and there is resentment on his part because of an inequitable tax burden, then this result could be of short duration. The substitution effect, on the other hand, will depress work to a lesser extent at all income levels than in the case of a proportional income tax and particularly a progressive income tax.

With the income-type of VAT, the effect on incentives to work will approximate that of a proportional income tax. The substitution effect, in this case, will discourage work more than in the case of a regressive tax but less than in the case of a progressive tax. The gross product-type of VAT is thought to be a progressive levy (the degree being uncertain) if the concentration of property ownership is in upper-income groups. Thus, the income effect would increase

the incentive to work, as compared to a proportional levy, only at the higher income levels.\textsuperscript{56}

In considering the effects on the choice between work and leisure, many economists say that whether the tax results in a significant increase in effort depends upon the elasticity of the supply curve of labor which is affected by institutional and psychological factors as well as by monetary incentives. Economists differ as to its elasticity. Henry Aaron of the Brookings Institution says that:

The supply function I would posit is a highly inelastic supply function. A number of efforts have been made over the last 20 or 30 years to discover the impact of tax rates on work efforts. By and large, they have turned up negative results. There seem to be some people who increase their work effort, and some people who decrease work efforts when their tax liability rises. So the conventional assumption, one which I have no reason to assume away, is that the supply of work effort is relatively inelastic. It responds very little to changes in tax rates. In that kind of world, there is no way by which a worker can shift a tax imposed on his factor income forward in the form of higher wages to his employer.\textsuperscript{57}

One severe problem to any meaningful conclusion concerning the effects on the choice between work and leisure is the defining of the word leisure (which involves the issue of distinguishing intermediate from final product). Another problem is statistical information which must supplement the theoretical analyses before the analyses can

\textsuperscript{56}Sullivan, pp. 271-72.

\textsuperscript{57}Joint Economic Committee, \textit{Value-Added Tax Hearings}, 1972, p. 108.
provide any basis for macroeconomic generalizations.

John F. Due considers the questions - What are the relative effects of the two forms of tax (sales and income tax) upon the incentives to work, to gain greater education and skill, to take more responsible positions, and to undertake the development of business enterprise? To him much less attention has been given to the effects of taxes. The usual argument, according to Due, is that their unprogressive nature (sales tax) and the ability to escape them by saving additional income received result in less effect than income taxation. The answer to the question, however, depends upon the relative reactions of consumers to the two forms of taxation.58

Musgrave and Richman say that the comparative effects of sales taxes and income taxes on work effort depend on two considerations: (1) To the extent that work effort is related to the real rate, then only if consumers operate under a money illusion will the income tax have a more restraining effect on work effort than will taxes reflected in higher prices. (2) An individual will work less, the more progressive the tax schedule under which a given tax is paid. This, according to Musgrave and Richman, does not prove (as assumed by some economists) that taxpayers as a group will work less under a progressive tax schedule.

These results will be true only if the use in the marginal relative to the average tax rate at higher levels of income does more to deter effort than the inverse movement at lower income does.59

Another very important area with respect to the effects of a general sales tax concerns its influence on consumption, savings, and investment. If the small nonconsumed portion of the incomes of lower and higher-income groups is saved for a particular purpose, a general sales tax which is shifted forward will reduce consumption. The consumption pattern will also shift, and it will do so at the expense of those commodities whose demand is income or price elastic. This, in addition, holds true for the consumption savings ratio; that is, a taxpayer in the middle-income group who does not want to reduce his material standard of living in the short run will reduce his savings (which is more sensitive to income). Or he will borrow, particularly if he expects prices to rise. Higher-income groups generally maintain their consumption regardless of the incidence. There exist only a few studies about the tax effects on consumption by income groups and social classes. The influence of a shifted general sales tax on consumption cannot be satisfactorily answered without considering its expenditure effects. This in part depends upon the type of

59R. A. Musgrave, Peggy B. Richman, and Others, The Role of Direct and Indirect Taxes in the Federal Revenue System, p. 84.
tax the sales tax is replacing, if any, and the effect upon the marginal propensities to consume at various income levels. Professor Musgrave expresses his opinion of this in the following: He says that there are various reasons why indirect taxes tend to depress consumption more than do direct taxes. With the personal income tax, for one thing, the burden of these is distributed progressively, and taxes paid by lower-income groups tend to be reflected more largely in reduced consumption than do taxes paid by higher-income groups. For another, taxes on consumption are more favorable to saving relative to consumption, than the personal income tax. Musgrave goes on to point out that, because of these reasons the consumption impact of sales taxes tends to be higher, but that the impact is smaller than one may think. More important in this respect, he says, is the distinction between consumption as personal income taxes and the corporate income tax. Assuming the corporate income tax is not shifted to consumers or wage earners, then reduced consumption will result only through reduced dividend distribution (but not to the extent that the tax reduces retained earnings). In this sense, consumption is greatly reduced. If the tax is shifted, according to Musgrave, there is little difference in consumption effects.60

Concluding that sales taxes tend to fall more heavily on consumption, what is the significance concerning employment? If you think of high consumption as a condition needed to provide for an adequate level of aggregate demand, then the implication concerning employment is not good. In considering a tax and its effect on employment, many economists believe that the employment depressing effects are strongest for a value-added tax of the consumption and income-types and least for a progressive income tax.

Indirect taxes are generally assumed to be more favorable to saving than direct taxes; that is, they fall on spending rather than on income, thereby influencing private decision taking away from spending and toward saving. A switch from direct to indirect taxes will normally produce an increase in propensity to save of the private sector. A general sales tax will increase the percentage of national income saved at full employment by shifting a greater portion of the burden from those income groups which save higher percentages of their incomes to those which save lower percentages (thus absorbing a larger amount of the tax from the portion of income which would otherwise be spent on consumption). This result can be achieved provided (1) the use of the sales tax shifts a greater portion of the total tax burden to the lower-income levels and (2) that the overall marginal propensity to save
is lower in the lower-income groups than in the high ones (this poses an empirical question).

According to some economists, the income tax is discriminatory in favor of consumption spending and against saving (in a form that yields an interest return). That is, the additional consuming power that the consumer gets by receiving interest from savings becomes a smaller percentage of the consumption he can enjoy if he spends all of his disposable income immediately. Unless savings are exempted from income tax, therefore, the contributors are taxed twice on what they save, and only once on what they spend. (To tax the sum invested, and afterwards tax also the proceeds of the investment, is to tax the same portion of the contributor's income twice.) This is not regarded as a serious practical problem.

One final point on the effect of indirect taxes on savings: One economist, Otto Eckstein, explains that whether an increase in the savings rate (as a result of an indirect tax) produces an increase in investment and real growth depends very much on the general economic environment. He further explains:

Under conditions of full employment with the economy moving along its full potential growth path, one would normally expect an increase in the ex ante saving rate to lead to a successful result, with the economy experiencing a higher rate of capital accumulation. Then if full employment does not prevail, however, an attempt to increase the saving rate may be
self-defeating. As total spending is reduced, total incomes are reduced, and even if the propensity to save out of a given income has been increased, the decline in income itself may more than offset this shift. Economists are generally agreed, in a vague sort of way, that income taxation discriminates against risk-taking though they are not wholly in agreement as to why (whether it is the result of the taxation of income or the progressive nature of taxation). Thus, unless income taxation is confined entirely to the very lowest income groups, it would be expected to reduce both consumption and investment directly (investment indirectly as a result of the reduced sales of consumer goods and services). On the other hand, if investment is to be affected at all because of sales taxation, it would have to be through the indirect route of lowered consumption demand.

Musgrave and Richman are of the opinion that (assuming the required capital formation is mainly private) tax effects on investment present a more serious problem for taxation than do the effects on savings. Whereas, savings may be corrected by adjustments in the overall rate of taxation, investment cannot. They emphasize that the conditions that investment equals ex-ante saving (and thus all that matters are the effects on the propensity to consume

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or save) is too simple a picture. The determinants of investment are complex (depending on whether it is a function of acceleration, profitability, or internal funds different results will be obtained). Musgrave and Richman do conclude that by and large, there is the presumption that direct taxes on income especially if progressive, are less favorable to investment than are indirect taxes. Musgrave in another paper directs attention to the controversy that direct taxes are detrimental to investment.

Regarding the individual income tax, the argument is that high marginal rates on investment income retard capital formation and growth. Whether or not this is the case, the issue of high marginal rates is not the same as that of indirect against direct taxes. The fact of the matter is that high marginal rates provide for only a small part, even if they were paid in full. 62

Musgrave goes on to say that the vital distinction between direct and indirect taxes relate to the distribution of the tax burden between the lower and middle-income ranges. The income tax, with exemptions adjusted to family size, provides for a fair distribution of the tax over this range, while sales taxes do not. This, he says, has little if anything to do with investment incentives. 63

In comparing sales taxes with the corporate income tax, Musgrave explains that it is more complex because the conclusion greatly depends on whether or not the corporate

62Musgrave, Richman, and Others, p. 84.
63Ibid.
tax is shifted in the short run.

If not, it is clear that substitution of ex­
cise or sales taxes from profits taxes would raise
the net relative to gross profit margin, and would
increase the internal flow of funds. As far as
aggregate demand effects are concerned, this would
improve matters to the extent that the gain in in­
vestment exceeds the loss in consumption—a result
which is possible but by no means certain. As far
as growth effects are concerned, substitution of
capital formation for consumption would be a gain,
but could hardly be sustained in the longer run
without a supporting rise in consumer demand.

If the corporate income tax is shifted, Musgrave concludes
that the situation differs.

In this case, the tax does not reduce net
rates of return in the first place, and is more
or less equivalent to a prodirect tax (imposed at
differentive rates, depending on profit-margins)
on the corporate sector. Substitution of product
taxes under these conditions, would have little
effect on investment, and reduction of the corpo­
rational tax would be more or less equivalent to
the reduction of indirect taxes.64

The countercyclical effects of VAT and other sales
taxes is an important consideration. Where built-in stabi­
lizers are characteristic of the personal income tax and
other direct taxes, they are lacking in the case of VAT
and other indirect taxes. Even though indirect taxes can
provide for personal exemptions and allowances the same as
direct taxes, the rate structure seems to be the more
important consideration. The problem in trying to vary
the rates of indirect taxes to effect anticyclical policy
is that it invokes perverse reaction on the part of

64Musgrave, "A General Overall View of Excise and
purchasers. One economist, Professor Eckstein, expresses the view that indirect taxes generally tend to be weaker automatic stabilizers than the personal income tax or the corporate income tax, but that they do make a contribution. He goes on to say that sales tax revenues do not decline as rapidly as income taxes in inflation.\textsuperscript{65}

Another important consideration with respect to VAT and its effects, is the effect of VAT upon relative efficiency in production. The argument concerning the corporate income tax is that it penalizes efficient producers since it is paid only by profitable firms. The result is that the tax shifts claims on resources from efficient to inefficient firms. Some argue that the corporate tax exerts a bias in favor of the use of labor inputs and against the use of capital (thus impeding optimum input combinations). On the other hand, they argue that the VAT would shift more of any given business tax burden to inefficient firms. Still others argue that VAT is neutral with respect to the choice of factor combinations in production. The validity of this argument depends partly on two factors. One, the extent to which low profits are the result of considerations other than inefficiencies and two, the extent to which high profits are result of efficiency or of monopolistic restrictions. Whether the VAT as opposed to

a corporate tax would result in better combinations of factors in production depends on the elasticity of substitution of capital for labor. Another problem with the validity of this argument is that sales taxes in themselves sometimes produce changes in the methods of doing business which may have serious effects on efficiency. For example, application of a sales tax to goods used in certain techniques of production and not in others may alter production processes. This happens quite often.\textsuperscript{66}

The last point in this section that relates to the effect of a general sales tax is its effectiveness as a device for the restraint of inflationary pressures. In considering its anti-inflationary effects, it is normally considered in relative terms, the tax being regarded as an alternative to other revenue sources (such as borrowing or the use of income taxation) given the level of government expenditures and the amount of inflation.

Assuming that the tax increases the price level, then how can it check inflation? The answer is that an increase in the price level which results from a sales tax is different from the increase in prices which constitutes true inflation. An inflationary spiral involves increases in both commodity prices and factor prices, while a sales tax merely increases the level of commodity prices relative

\textsuperscript{66}Musgrave, Richman, and Others, p. 14.
to factor prices. The sales tax must not generate equivalent factor price increases. If it does, its effects become essentially the same as those of inflationary price increases, and it may even stimulate the inflationary spiral. Wage increases are the primary area of danger in this respect. If labor obtains money wages increases to offset the higher cost of living resulting from the tax, the effectiveness of the sales will be nil. One economist, Heilbroner, touches on this same possibility concerning VAT. He says:

"Workers will not want to accept the cut in the buying power of the paychecks that a VAT-induced increase in prices would bring. Thus, VAT might add one more item that labor could bring to the bargaining table. If unions succeed in getting wage adjustments to cover VAT, business in turn would try to raise its prices to avoid a cut in profits. And, meanwhile, the increase in wages would itself raise the value-added base on which VAT is figured. Thus, VAT might inadvertently serve as another source of inflationary pressure."

The tax can also fail in its effectiveness if inflationary pressures are so great that prices rise by the amount of the tax and the same quantities are sold as before while supply has not increased. This usually occurs because of excessively liberal credit policies which have the effect of raising the tax through inflationary borrowing. Finally, the sales tax can fail in its effectiveness

if it seriously reduces the supply of labor by decreasing the ability or willingness of workers to produce. If it does reduce the supply of labor, the tax may be inflationary because the drop in production is likely to be immediate, while (the marginal propensity to spend being less than one) demand will fall off less than supply. To further explain, the decline in spending will be less than the reduction in disposable incomes resulting from the reduced labor supply (to the extent that purchases are made out of past savings).

To the extent that a sales tax is an instrument of inflation control, suggests that it may have a disadvantage in any period in which there is a tendency toward unemployment. Not only does the tax fall more heavily on the lower-income groups, who spend higher percentages of their incomes, but it likewise gives at least a limited incentive to spend less and save more. This could conceivable result in a decline in consumption and a destructive effect upon investment (since investment depends to a large extent upon the volume of consumption sales). 68

68 Due, Sales Taxation, pp. 42-46.
CHAPTER 4

PROPOSALS FOR VALUE-ADDED TAXATION

IN THE UNITED STATES

BACKGROUND OF THE EUROPEAN EXPERIENCE WITH THE TAX

In the United States, VAT has been advocated as a partial or full replacement for two taxes, namely the corporate income tax and the local property tax. These are examined following a discussion of the tax systems in the European countries who now levy a VAT. A brief discussion of their experience with the tax is necessary in order to adequately explain the tax as a possible replacement for the corporate income tax and/or the local property tax.

The value-added tax has clearly been the most widely discussed tax form in the present world economy. The European Economic Community has now built its own VAT. The goal was ambitious: the creation of a virtually uniform system of taxation. Other European countries who have big exports to the community want the same harmonization. The European acceptability of the tax was prompted by many reasons. Some of these are listed below. First, the tax provides a universality and general conformity; second, it has great revenue raising potential for financing increased.
governmental services and benefits; third, it can be efficiently imposed on imports and removed from exports; fourth, it has the capacity to combat tax evasion; fifth, it provides effective tax exemptions for purchases of capital equipment; and finally, and most important, it has fewer administrative problems than the previously unsatisfactory taxes which it replaced.

Perhaps a brief background and a current appraisal of the European experience will help support some of the reasons just described. Before the VAT, the business turnover tax, or cascade tax, was used by nearly all of the European countries who now employ the VAT. It proved to be unsatisfactory for a number of reasons. The turnover tax was levied on sales at each stage of production with no deduction allowed for taxes paid earlier. One result of this was that taxes on a given item produced in different countries differed because of the variation in the definition of "stage of production," and because of the differences in the tax rate. In some instances, the turnover tax passed over more cascades in one country than in another, thereby making the finished item more expensive. Several stages of production (if performed by a single firm) could count as one stage. This favored vertical integration and added to the tax discrepancies among the countries (in the case of the VAT, its allocative effects are different. The tax base is value added in production
and not value of sales. Since the value added is unaffected by the tax, it does not matter in determining the tax liability whether or not production is vertically integrated.

The turnover tax also created other problems for these countries; for example, when the Common Market countries levied the turnover tax on imports, if the exporter was not to be at a price disadvantage, the exporting country would have had to give him a tax rebate. In that case the total amount of the turnover tax was usually unascertainable, and the amount of the rebate was set arbitrarily. This created a type of situation where the exporter could often get a rebate larger than the turnover tax levied on his commodities by the importing country.69

These inefficiency problems were complicated by the fact that importing countries were at the same time using the turnover tax in order to keep foreign goods out. In this case, one government could levy a tax on imported commodities from another on the grounds that no turnover tax was applied to exports by the country of origin or because the tax rate of the exporting country was lower than that of the importing country.

Another unsatisfactory aspect of the turnover tax (and it became particularly significant as the tax rates increased) was the nonuniformity it imposed on the consumer

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burden; that is, the cumulated burden on various commodities constituted widely varying percentages of the retail selling prices of goods. This resulted because of the different numbers of transactions through which commodities passed from initial production to their sale to the final consumer.70

The consumption-type of VAT, under the destination principle, has been given more attention than any of the others. This is because it includes export and import adjustments and allows for the deduction of capital equipment or outlays. Because of these features, balance of payments and economic growth benefits are expected to appear. For these reasons and the fact that the French VAT was of the consumption-type, the European Economic Community conforms to this type.

In this form, the EEC required nearly all sellers of goods and services, including producers, manufacturers, wholesalers and retailers, to collect tax at the specified rate or rates on all sales to their customers. Each seller is required periodically to pay to the government the value-added tax he has collected from his customers, but he is allowed to credit against his liability to the government the amount of VAT he has paid on his own purchases of goods and services.

70Due, Sales Taxation, p. 354.
The Common Market countries and other European countries feel that there are several advantages for having implemented the VAT, particularly the consumption type. These are enumerated below.

Under the turnover system of taxation, many manufacturers carried out as many stages as possible under one roof. Under the VAT (where the tax is levied simply on the ultimate value of the commodity), there are no qualms about subcontracting with specialized producers. Thus, manufacturers are not under pressure to spread their productive capacity over a greater number of operations than full efficiency demands. The major advantage, therefore, is that VAT permits greater specialization of production.

Another advantage for the ECC using VAT is that businessmen now have to cope with only one tax regulation rather than with many as in the past. This means that administrative costs are lower in this respect. 71

The European countries (particularly the Common Market countries) have an advantage with the operation of the VAT with respect to exports and imports. Since all VAT's paid by an exporter are credited to him, and since there is a zero rate applicable to the exports of commodities, there is no part of a VAT levied upon exported commodities. The VAT structure as applied to international

trade relieves exported commodities from the tax in the exporting countries but does not relieve them of the tax prevailing in the importing country (where they compete on the same basis with commodities produced at home).

In that the consumption-type VAT imposed no tax burden on purchases of machinery and equipment and the like, these European countries enjoy another advantage. By allowing the businessman a deduction on his purchases, the purchases are in effect readily relieved of tax.

The Scandinavian countries also believe that they have an advantage in the acceptability of the tax; for example, in instances where the rates of the VAT have been increased, the increases were either instituted or supported by labor unions. And on the question of the regressivity of the tax, the governments feel that with their expenditure programs (for social insurance, medical care, and family benefits) any element of regressivity is offset by these expenditures.

The European nations also believe that the VAT has an advantage over other systems of taxation in its protection against tax evasion. Since the business firm takes a credit against his own tax liability for the tax paid by him on his purchases, he will keep his invoices to establish his right to the credit. These can be checked against the tax report of the person selling to him.
There has been quite a lot of controversy over the effect of the tax on prices. The European countries, even after substitution of VAT for other taxes, cannot resolve the controversy. The difficulty they have found seems to be in the substitution. Thus, the revenue effect and the price effect of the change, according to these countries, depends on the effective differences between the old tax and the new tax and not the effect of VAT alone. Also, in other countries wage increases were negotiated several months before the VAT went into effect, thus creating difficulty in distinguishing between the price increases caused by the introduction of the tax and the wage increases.

It should also be pointed out that the European nations have some difficulties with the tax. Even though their tax has been applied to a broad base, they have found some problems with the transactions in particular industries (financial institutions such as banks and insurance companies, and in real estate and agriculture). There are other areas in which the European countries are not particularly pleased; for example, some feel that provision should be made in the case of the businessman who takes items of his business inventory or supplies for his personal use.72

Although in general the European countries are

pleased with the VAT, the French VAT is probably a somewhat better indicator of the performance of the tax. This is because the French experience with VAT has been over a longer period of time. The studies of the tax and its performance should be somewhat more significant. Some of the observations of the tax in France are presented below.

The French government has assumed that their consumption-type levy is neutral as between different commodities and methods of production. Questions have been raised, however, concerning the relative position of capital-intensive and labor-intensive industries and business firms under the tax. It should be noted that a study (German Ministry of France) was done in this regard, and the conclusion reached was that exemption of investment goods severely discriminates in favor of capital-intensive enterprise as against those which are labor-intensive.

Because of the deduction for capital outlays, the consumption-type of VAT was also supported in France as a method of encouraging investment (a tax incentive). Although the effect of this has not been substantiated, it should be noted that there have been periods following its adoption where expansion in investment outlays has produced severe inflationary pressures. This suggests that, if the tax did encourage investment, it caused reduced savings rather than having caused reduced consumption (wage and monetary policies obviously had some effect).
The tax has also been extremely complicated and has required considerable effort on the part of administrators and taxpayers. It is thought, in spite of this, that the application of a direct tax would be much more difficult in France, particularly in light of the unpopularity of direct taxation in that country.\(^73\)

**VALUE-ADDED TAX AS A SUBSTITUTE FOR THE CORPORATE INCOME TAX**

As previously mentioned value-added taxation has been proposed along two lines in the United States: One, as a partial or full replacement for the corporate income tax, and two as a replacement for the local property tax. In discussing both of these proposals, the discussion focuses on the pros and cons of each. And in light of the fact that an overwhelming majority of literature written on VAT for the United States has been for the consumption-type tax, this discussion adheres to that fact.

In the United States, the tax on corporate income is higher than in some other industrial nations, indirect taxes are a smaller fraction of its budget receipts, and a balance of payments of deficit has persisted since World War II. Some corporate firms are concerned because there is no adjustment in their tax. Thus, some propose making border adjustments for the corporate income tax to lessen

\(^{73}\)Sullivan, pp. 120-24.
the balance of payments deficit. In the event that border adjustments cannot be made (under the rules of the General Agreement on Tariffs and Trade, GATT), some proponents of the VAT have suggested that the United States should replace the corporate income tax with a tax on the value added (thereby making border adjustments for that tax). Opponents of this proposal claim that the arguments for it are fallacious.

With this in mind, what are the implications for international trade? Under the GATT agreements (which were also agreed to by the United States), indirect taxes may be rebated on exports and equivalent taxes imposed on imports. Direct taxes, under the agreement, are not subject to similar adjustments at international borders. To further explain, a country which raises a substantial part of its revenue from indirect taxation can give rebates on exports and in turn tax imports to its own advantage. A country like the United States, however, who relies primarily on direct taxation is at a disadvantage.

The rationale for the GATT distinction between direct and indirect taxes was based on the classical economic assumption that the latter were shifted and reflected in prices while the former were not. To this extent, not making border tax adjustments for indirect taxation would place domestic firms at a tax disadvantage, while in making border adjustments for direct taxation would amount to
export subsidies and nontariff protection for home markets.  

Proponents of this proposal insist that the clear distinction between direct and indirect taxation is an oversimplification (that not all indirect taxes are fully reflected in prices), and many direct taxes may lead to price increases. Thus, they point out that the corporate income tax is, to a very large extent, shifted forward. For the necessary effect (VAT for the corporate income tax so border tax adjustments can be made), the corporate tax must be shifted forward so that its removal reduces prices. Then the levy of the VAT will raise prices to their presubstitution level. By making border tax adjustments at this time, the results will be a balance of payments advantage. To the proponents of the idea, this deshifting will occur. They insist that, because the corporate tax is shifted to reflect higher prices, it is critical in appraising the extent that disadvantages exist in international trade. They contend that United States labor and industry are at a competitive disadvantage in both foreign and domestic markets. They point out that the disadvantage is substantial, and that, in view of the problems with the United States balance of payments and with maintaining employment in competitive industries, the United States should change

its tax structure in order not to permit border tax adjustments.\textsuperscript{75}

There are, of course, arguments against this proposal. Opponents of this proposal argue against the substitution of the VAT for the corporate income tax for various reasons. In the first place, they argue that incidence of the corporate income tax is very involved, and that there are varying stages of disagreement on the theoretical arguments and statistical analysis. Opponents also argue in this respect that the deshifting that is supposed to occur in prices (when the corporate tax is removed and the VAT instituted) is not likely to occur. And if it did not occur, then prices would rise with the employment of the VAT. One economist, Professor Musgrave (who is an authority on shifting and who supports the view that the tax is largely shifted forward), says in regard to the corporate tax incidence that one would expect a very large part of the VAT to be passed on, while the odds would not be as high for the corporate income tax.\textsuperscript{76}

Second, opponents argue that for the trade advantage to be significant, the VAT rate must be quite high, at least as high as the European rates. At rates that high, however, our existing tax system would drown (a

\textsuperscript{75}Davie and Duncombe, pp. 512-13.

\textsuperscript{76}Joint Economic Committee, Value-Added Tax Hearings, 1972, p. 161.
revenue would result even greater than that of our total corporate tax).

Third, as expressed by Professor Musgrave, the argument that exporters (U.S.) are at a disadvantage is fallacious. The introduction of a VAT without an export credit puts exporters at a disadvantage. In granting the credit, the disadvantage is merely removed, leaving the net situation the same. Musgrave goes on to explain this contention in terms of commodity and capital flows. Concerning commodity flows, he says that substitution of the VAT would benefit the United States trader only on the assumption that it would depress factor costs. This is not likely, he says, since domestic prices would rise and the detrimental effects on the balance of payments position would be offset by the export credit and compensating import duty. Regarding capital flows, he says, indirect taxes have relatively little effect on the capital flow aspect. On the other hand, the corporate income tax, in the absence of short-run shifting, may be a significant factor. The high-rate country may experience capital outflow to low-rate countries and suffer reduced inflow. Musgrave concludes that the substitution of the VAT for the corporate tax may be helpful from this point of view (provided there is no short-run shifting), and an absolute disadvantage exists only to the limited extent of the rate differential
between European and United States taxes.  

Finally, the opponents contend that simply because one nation or nations make border tax adjustments does not mean that another should also make adjustments (even for the same tax). Even if the corporate income tax is shifted forward (over a period of many years), the United States international economic policies, as well as those of other nations, adjusted to a pattern of international trade that achieves balance. In essence, if the United States were to make adjustments for the corporate income tax, further adjustments would be required.  

A very interesting statement by Professor Shoup in conjunction with this proposal is expressed by him in the following:

The corporate income is often suggested as a candidate for repeal under this argument. Aside from the dubiousness of the assumption that corporate income taxes are shifted forward as much as general sales taxes . . . we have the historical fact that no major country and, so far as I am aware, no minor one, has ever substituted a sales tax for an income tax. The Committee on Turnover Taxation in Britain, in its recent report, advised against substituting a value-added tax for the corporation profits tax.
Another argument brought out by the opponents of this proposal, is the criticism of the question, should we follow Europe? They contend that the background for VAT in the United States is completely different from the European experience. As already discussed, the widespread move to value-added taxation in recent years was made as a replacement for prior reliance on turnover taxes. This is a move that nearly every economist will agree was an improvement. In addition, this was a move to harmonize the tax structure in the European Economic Community (again, an improvement). In the United States, however, neither of these considerations applies. In the first place, we fortunately do not have a turnover tax to replace and we do not intend to join the Common Market (some economists say that we have had one of our own for quite some time, anyway). In the second place, introduction of VAT in this country would involve a massive shift of the Federal tax structure toward sales taxation, and this is quite a different situation. We do not have an administrative apparatus in existence to collect a VAT.

The argument for the value-added tax as partial or full replacement for the corporate income tax has been recommended on other grounds. It has been recommended on the grounds that the corporate income tax is partial (as it applies to the corporate sector only) and because of this imposes an excess burden caused by the resulting
over-allocation of capital in the unincorporated sector. This, according to the argument, leads business firms to substitute other factors for equity capital; therefore, replacement of the corporate tax for the VAT would be more neutral since it bears equally on all factors of production. Thus, the corporate tax is basically a tax on the equity capital of corporations (that the tax is not shifted forward and it reduces the rate of return on investment). Proponents of the tax say that, if the recommended tax substitution were made, the after-tax rate of return on investment would increase (thereby stimulating investment).

Accordingly, proponents argue, consumption would be reduced by the price increases resulting from the shifted VAT. This results in a reallocation of resources which would stimulate growth (a stated national goal). Professor Dan Throop Smith, a strong advocate of VAT, emphasizes the proponents' view of VAT as a replacement for the corporate income tax.

To the extent an income tax is not shifted, the after-tax return is reduced by a corporation income tax and with any given cost of capital or required rate of return, investment is discouraged. A substitution of the value-added tax for an unshifted income tax would thus clearly increase the rate of return and encourage investment, so long as the value-added tax is treated as an element of cost and reflected in price. A substitution of a value-added tax for a shifted corporation income tax would reduce the before-tax rate of return necessary to provide any expected after-tax rate of return and would encourage investment to the extent that the before-tax rate of return was regarded as significant in investment decisions.
Professor Smith goes on to say:

One useful way to look at a value-added tax in comparison with a corporation income tax is to note that the value-added tax is neutral regarding costs and profits. A dollar saved in internal costs, that is all costs except purchases, would increase net income by a dollar, since the tax base and the tax wouldn't change, assuming no change in prices. An increase in internal costs would reduce net income by the same amount. By contrast, with a 50 per cent corporation income tax, a saving in costs is thought of as going in half to the company and half to the government, while an increase in costs is thought of as being half covered by a reduction in taxes.80

Other proponents advocate the proposal partially on the bases of the European experience; for example, Professor Eckstein explains:

In the continental countries, in their very high growth years of the 1950's, direct taxation was relatively light, and there was more reliance on indirect taxation. The growth process had a very high rate of capital formation at its center, and it is probably true that the high capital accumulation could not have occurred if the tax system had not been so favorable to it.81

Eckstein also states that indirect taxes are more likely to promote growth as compared to direct taxes once our economy has achieved full utilization of labor and capital (full employment).

Opponents of the proposal (substituting a VAT for

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the corporate income tax) oppose the substitution on equity grounds. They contend that the corporate income tax has capitalized, and its removal would lead to windfall capital gains (already taxed at low rates) to corporate shareowners. Economist McLure explains:

Elimination of the corporation income tax would create an enormous tax haven in retained earnings. Besides having obvious implications for tax equity, this tax haven would itself distort economic decisions in important new ways.82

(This argument assumes that the corporate tax is not shifted.)

Also, because the VAT is seen as a regressive tax by opponents, it is considered inequitable and thus an improper replacement for the corporate income tax (assuming it is not shifted). An economist, Henry Arron, expresses this argument in the following:

A consumption VAT is regressive when measured against current income. In plain words, low income families will pay a larger fraction of their income in value-added taxes than high income families. The proportion of income consumed declines steadily with income. A consumption VAT that takes one per cent of income from a typical household with income of $12,000 will take 1.5 per cent from a family whose income is under $3,000 but only .9 per cent from a family whose income is between $20,000 and $25,000 and only .44 per cent from families with incomes over $50,000. This sharply regressive pattern arises because the poor consume more than they earn and the rich save a lot.83

83Ibid., p. 61.
He goes on to say that, even though the regressivity of the VAT can be removed for most of the income distribution, why bother? If the goal is to raise revenues in a reasonably progressive manner, the income tax is an obvious candidate.

Another point that opponents of this proposal for VAT bring to front is the idea of the VAT being substituted for the corporate tax on the grounds of the latter's inefficiency (efficiency in the sense that its imposition either does not alter resource allocation or does eliminate a pre-existing misallocation). Opponents argue that the income taxes in use in this country cause inefficiencies because of loopholes and preferential treatment. Proponents say that, even if these inefficiencies were corrected, the income tax would discriminate against the corporate form of business and against personal savings in general because of "double taxation" of profits and of savings. Opponents argue that the proposed VAT produces its own inefficiencies. Professor Taubman considers this problem:

First, since investment costs are, but labor costs are not, allowed as a deduction, this particular value-added tax would increase the cost of labor relative to capital and induce firms to use a more capital intensive process. Second, for practical reasons the value-added tax will not be applied to the total amount of consumption, that is, the value of all goods and services that yield satisfaction to a consumer. While this criticism can also be levied against the income tax, additional problems occur with a value-added tax. The basic areas of consumption
which will not be subject to the value-added tax are: those for which there are no market transactions; those that are provided by government; and those both purchased and consumed abroad. 84

Professor Musgrave considers the same argument:

Chances are that the fraction of total consumption exempt from VAT would be no less (or more) than that of profits remaining outside the profits tax. Thus, VAT would not be free of excess burden. While the distortion would be in consumption rather than production, relative costs in terms of excess burden are not readily assessed. It is not obvious which tax would win out. 85

Other opponents, who would not agree that the VAT would be an incentive to capital improvement and capital investment, argue their point as follows: They contend that proponents of VAT ignore the fact that the rate of growth at full employment of the economy is insensitive to the rate of investment. The dominant forces, according to them, over the long haul are technological changes.

On the idea that the VAT is less detrimental to growth than the corporate tax, Musgrave explains:

This point has some validity, but I do not think that the difference is very great, and though I am not on the stop-growth band-wagon, I would not lightly substitute major losses in tax equity for minor gains in growth. Moreover, I believe there are other ways (including such devices as a flexible investment credit) which

84 Ibid., p. 145.

are better suited to secure growth with equity.\textsuperscript{86}

Aside from the equity standpoint, some economists oppose introduction of a VAT as a replacement for the corporate income tax on political and economic grounds. Henry Aaron considers this in the following:

Consider the following issues in tax policy that Congress would have to decide. Should a VAT apply to rents, and if so, what about owner-occupied housing? To expenditures on urban mass transit? To the sales of insurance companies (what is value added of insurance companies)? To tuition receipts of private schools, of private universities, of public universities? To receipts of publicly-owned water and gas utilities? To sales of medical supplies to the aged or the poor? On sales by farmers; on lawyers; accountants' and doctors' fees? On services of domestic employees? To sales of non-profit enterprises?\textsuperscript{87}

\textbf{VALUE-ADDED TAX AS A SUBSTITUTE FOR THE PROPERTY TAX}

Rather than a substitute for the corporate income tax, recently the revenue from a VAT has been discussed primarily as a replacement for local property taxes. While the details are still very incomplete, the Nixon Administration is considering proposing a Federal tax on value added, the revenue from which would be used to relieve the burden of existing local property taxes used to finance

\textsuperscript{86}\textit{Ibid.}

\textsuperscript{87}\textit{Joint Economic Committee, Value-Added Tax Hearings, 1972, p. 62.}
public education. The federal government is bound to assume some role in supporting public education, partly because it now bears some of the cost of elementary and secondary education and partly because a reform of educational finance will probably increase educational expenditures and create fiscal problems for state and local governments. It is the purpose of this section to consider some of the issues relevant to such a proposal.

Proponents of this proposal insist that the property tax is inferior in an industrial society, that its tax liabilities are related closely to neither benefits nor ability to pay taxes. They also contend that financing public education through this tax means that an individual's educational opportunities depend crucially upon where he lives. Finally, proponents say that the property tax is regressive in the low-income range, due to the heavy burden on housing. Over the low-income range, they say, the property tax is more regressive than the VAT. This argument is defended on the grounds of the treatment of housing under the two taxes; the property tax imposes a heavy burden on housing, whereas the VAT would probably exempt it. Because of this, the proposal might not have adverse effects on the equity of the tax system.

Opponents of this proposal contend that the local property tax is not regressive except at the very low and very high-income groups, and that the VAT provides no
improvement over the property tax in terms of the overall
distributional patterns. They concede that some adminis-
trative improvements are clearly necessary since assess-
ments are often arbitrary and of poor quality. They also
say that there needs to be more equalization throughout
each state, particularly in the education field (there are
some very, very poor communities and some very, very wealthy
ones relative to education needs). They point out, too,
that the tax excludes many types of property from its base,
including military bases, Federal offices, and nonprofit
organizations. Finally, opponents argue that any reduction
in taxes on land will result in increases in land values
and a bonus to large landowners.

Professor Thurow, an opponent of this proposal, con-
siders the impact of the property tax:

I think you want to make two distinctions
when you talk about the impact of taxes. Taxes
have vertical and horizontal equalizing effects.
Horizontal equity is when two people with the
same income pay exactly the same tax. Property
taxes are progressive taxes. They are vertically
equalizing. They are a good progressive tax.
The objection to property taxes is that they
create horizontal inequities. Two people with
exactly the same income will have a total tax
bill which differs. The question on property
taxes is whether there is some way we can remove
the horizontal inequities without scraping the
system? If you take the property tax out of
our system then the whole system will be more
regressive than it is now.88

Another proponent, Professor Musgrave, explains why he believes that there is no valid case for such a substitution:

While the property tax need be improved ... it is not a bad tax nor do I believe that, on the whole, it is excessively high. Homeowners, after all, not only pay property tax, but also derive favorable treatment under the individual income tax; and if the present situation imposes too heavy a burden on the little fellow, devices such as the Wisconsin circuit breaker might be applied and expended to relieve him ... Given the agenda of unmet public needs and the inadequacy of present revenue sources to provide for them, I find it unacceptable to introduce a major new tax such as the VAT only to serve as a substitute for the property tax.

He continues:

Moreover, federal assistance to state-local finance, whether drawn from the income tax or a value-added tax, should be given to help jurisdictions with low fiscal capacity and high need to enable them to meet minimum standards of public service; it should not be given as an invitation to tax reduction at the state-local level.89

ALTERNATIVES FOR THE VALUE-ADDED TAX IN THE UNITED STATES

As already noted in the introduction of this paper, the federal government will need, in order to meet the revenue needs of the 1970's, revenues of $50 to $100 billion, in addition to current revenues. The revenues will help states and localities meet their pressing needs in the

fields of education and other public services carried on at the local level. They will also help in the areas of health, poverty, and discrimination. The next question that probably comes to mind is, if opponents are opposed to the value-added tax as a substitute under any of the previously discussed proposals, what alternatives do they suggest? These suggestions are discussed in the following section.

I conclude that there is no good case for introducing a federal retail or value-added tax as a substitute for revenue from present taxes, be it the property, income or corporation tax. Rather I would support income tax and property tax reform.90

This is a statement by Richard A. Musgrave, and it typifies the general view of the opponents of the VAT.

According to opponents of the VAT, in recent and past years so many exclusions, exemptions, and deductions have crept into the tax system that the tax base has been seriously eroded. They point out, for example, that the individual income tax provides for too many special provisions. Some of these are enumerated in the following.

The system of deductions is said to be too generous to homeowners. Capital invested in a home earns a tax-free return, since we do not tax the income-in-kind stemming from the use of the home. The special treatment of capital gains is another issue. To explain, the gain from holding an asset for more than six months is not taxed at regular

90Ibid., p. 429.
personal income tax rates, but at a maximum rate of 25 percent, or half of the capital gain may be declared as regular income and taxed accordingly. A third important issue is tax shelters. This is a device which allows the taxpayer to plow back earnings on capital without then being subject to tax (at least until the earnings are paid out)(company pension plans are good examples of tax shelters). Lastly, the exemption from federal income taxes of interest on the bonds of state and local governments is an issue. Individuals in very high tax brackets can purchase these securities in order to earn tax-free income.91

These economists also point out that the corporate income tax base provides for many provisions that reduce the tax base. These include the following: a lower tax rate for long-term capital gains; the carrying back and offsetting against taxable income of three preceding years of net operation losses; provisions for the recovery of capital in the form of depreciation allowances (using accelerated methods); deduction for outlays for research and development; a lower tax rate for dividends paid by one corporation to another; a lower tax rate for domestic corporations doing 95 per cent of their business out of the United States, but in the Western Hemisphere; deferment of taxes on the income of foreign subsidiaries of U.S.

91Eckstein, p. 61.
corporations; corporations with no more than the stockholders to elect to be taxed as partnerships, exempting religious, educational, and charitable organizations, trade associations, labor unions, and fraternal organizations are exempt from the tax; and lastly allowing depletion and other allowances by the natural resource industries. Of these provisions, some have become the subject of heated debate (particularly the case of depreciation allowances, the treatment of natural resource industries, and the treatment of foreign income).

According to some opponents of VAT the individual and corporate income taxes are not the only taxes that have an eroded base. They contend that the estate and gift taxes are highly progressive taxes, but like the individual income tax have numerous channels of avoidance. They say that the legal provisions of these taxes are extremely complicated and the amount of tax paid is probably directly related to the effort and skill which goes into the planning of an individual's estate.92

Opponents of VAT contend that income tax reform can be accomplished by curtailing the special deductions, credits, exemptions, and exclusions available to certain groups of taxpayers. One economist, Henry Aaron, expresses this contention in the following:

There is something disgraceful in the prospect of imposing a value-added tax at the same time that the United States: Refuses to withhold income tax on dividends and interest, thereby allowing 18 per cent ($4.8 billion) of all interest and 6 per cent ($1.0 billion) of all dividends to escape taxation; excludes one half of long term capital gains from tax; forgives all tax on unrealized capital gain of decedents; exempts municipal bond interest from taxation; allows depletion allowance far in excess of original investment; excludes $200 in dividends of tax (4100 for single returns); allows depreciation far in excess of true depreciation; extends life insurance interest, transfers payments, imputed rent; and allows various deductions unrelated to any plausible definition of income.

At the same time, the United States retains a toothless estate and gift tax system whose bite any reasonably competent tax lawyer can help his clients largely avoid.93

Aaron goes on to say that this type of reform would easily provide sufficient revenues to pay for increased educational assistance to state and local governments, and other federal activities. Secondly, he says that it would at the same time improve the equity of the federal income tax and permit a drastic reduction of tax rates. (See Appendix, Table 1, for possible alternative revenue raising income tax reforms.)

To raise additional revenues other than by VAT, Professor Due corroborates Aaron's view:

More specifically, to raise the additional money, I would also rely primarily on the income tax through more effective progression, through

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raising the rate, if necessary, and reducing the exemption, if necessary. I feel we could raise 50 per cent more revenue from the income tax than we do without having noticeable effects.94

(See Appendix, Table 2, for proposals on raising income tax rates.)

Another economist, Paul Taubman, expresses his view as to how additional revenues can be raised without the enactment of the VAT.

Rather than imposing a value-added tax which will introduce new elements of inequity and inefficiency, Congress should correct the well-known but glaring deficiencies in the income tax system. Much of the needed funds could be obtained by treating capital gains as ordinary income and by having constructive realization of gains at death.

The ADR and Investment Tax Credit provisions of the 1971 Tax Act were major steps backward in our tax system. Both of these subsidies should be eliminated as soon as possible.

Finally, Congress should give serious thought to improving and raising more revenues from the gift and estate tax. Total private wealth in this country is in excess of $5 trillion. Since about 1 per cent of the people die each year, about $50 billion of wealth annually enters estates. Since wealth is highly concentrated among few families, about $30 billion of wealth is subject to estate taxes. But gift and estate tax revenues only amount to about $4 billion at all levels of government. Substantially more revenues should be raised from this source.95

(See Appendix, Table 3, for a comparison of the various alternatives for raising additional revenues.)

94 Ibid., p. 36.
95 Ibid., pp. 147-48.
SUMMARY, CONCLUSIONS, RECOMMENDATIONS

In this paper, a thorough discussion of value-added taxation has been attempted. Before this discussion, however, introductory material pertinent to the subject was presented. It seems altogether appropriate at this point to summarize the important points of VAT and then make recommendations concerning its acceptability as an alternative method for raising added funds to meet the social needs and basic income distribution requirements of this country.

Value-added taxation has been introduced through two general measures. One is a measure which encompasses an economy's total output or an aggregate of all business firms. Two, because output or product are two different ways of looking at an economy's aggregate income, value added may also be regarded as the economy's aggregate income. Because of these measures, VAT can be computed through two alternative methods, the product approach (subtraction procedure) and the income approach (addition procedure).

Also, there are various types of measures recommended for value-added taxation that reflect the different
concepts of aggregate income or product. The types include gross product, net national income, and the consumption concept. The essential difference between any of the three is in the treatment given business capital expenditures. That is, under the gross product concept depreciation is completely disallowed; under the net income concept capital allowance is limited to depreciation; under the consumption type concept capital outlays are exempt. Under each of these fall the various types of VAT, namely the gross product-type of value-added base, the income-type of value-added base, and the consumption-type of value-added base (defined by two formulas--the deduction variant and the interest exclusion variant).

The important advantages and disadvantages of value-added taxation as compared to other taxes are as follows: the advantages of the tax over the income tax are that it is collected from a smaller number of taxpayers, the concentration of the base in fewer hands enables a more thorough check of the accuracy of returns, and the taxation of income before its distribution to recipients makes it possible to reach undistributed profits without a levy. The disadvantages concern its requirements for depreciation and inventory and also the difficulty of determining allowable deductions. Compared to a retail sales tax, it is easier to administer, and for the same reason it is
superior to a manufacturers' or wholesalers' sales tax.

The three general methods of computation for VAT are the addition method, the subtraction method, and the tax-credit method. The addition method is the appropriate one for the income-type levy, the subtraction method for the consumption-type. And the tax-credit method seems to be the more efficient method for computing VAT if the tax is expected to be shifted forward, even though it has not been universally applied either in theory or practice.

Many believe that the consumption-type of VAT is shifted forward in higher prices equal to the amount of the tax. There is controversy over the incidence of the income-type of VAT. One side argues that it is shifted forward and the other side argues that it is shifted backward to factors incomes derived from production. If it is assumed that the tax is shifted forward, then it is regressive, the consumption-type being more regressive than the income-type.

The economic effects of VAT entails various controversial issues. These effects can be summarized, generally, in the following: Assuming the tax is shifted forward (income and consumption-types), it probably has a regressive income effect, and the substitution effect may depress work less than a proportional tax and particularly a progressive income tax; again, assuming it is shifted forward, it reduces consumption; it may increase the
percentage of national income saved as compared to an income tax; it is probably more favorable to investment than income taxes thereby increasing economic growth; it tends to be a weaker automatic stabilizer than the income tax; it is thought to increase the efficiency in production; and it may or may not check inflation. Concerning each of these, there are varied opinions on the effects of the tax depending upon the various circumstances and conditions under which the tax is implemented. Most of these also pose unanswered empirical questions.

The European countries implemented the VAT (consumption-type) for a variety of reasons, the most important being their unsatisfactory experience with the business turnover tax (it was replaced because of its inefficiencies). The Europeans are reasonably satisfied with the performance of VAT, particularly in light of the unpopularity of direct taxation. Even so, they have experienced some difficulty with the tax (such as transactions in particular industries).

In the United States, the tax has been advocated along three lines. One, on the basis of substituting it for the corporate income tax because of balance of payments considerations. Two, on the basis of substituting it for the corporate income tax because the latter is partial (as it applies to the corporate sector only) and imposes an excess burden caused by the resulting over-
allocation of capital in the unincorporated sector and also on the basis that the corporate tax is detrimental to economic growth. Third, on the basis that the property tax can be substituted for a VAT in order to support grants to states to be passed on to local governments. All of these proposals are highly controversial. Some opponents of these advocate reforming our existing income taxes in lieu of implementing VAT.

In the United States, most economists agree that the goals of tax policy should be to distribute the cost of government fairly by income classes and among people in approximately the same economic circumstances. They also agree that tax policy should help to promote economic growth, stability and efficiency. If we in this country are going to maintain our stated goals of tax policy, it seems difficult to accept value-added taxation as a part of our federal tax system.

There is little doubt that the burden of the VAT would end up on the consumer, and it would be hard to prevent the VAT from shifting still further onto the poor. Indeed, it would further the trend toward reducing the relative importance of our progressive federal income tax and increase the role of regressive taxes. A shift from the corporate income tax to a VAT would mean substituting a regressive tax for a progressive tax. The VAT is levied
on consumer expenditure, whereas the corporate income tax, in effect, reaches dividends. Although the local property tax is regressive in the very very low-income groups and in the very high-income groups, it is certainly more progressive overall than the VAT.96

The economic growth of our economy, it is said, depends on the amount of capital formation, and it in turn depends on the level of investment. The point to make in this regard is that the evidence to support substitution of a VAT for a corporate income tax on the grounds that the former is less detrimental to economic growth is not nearly conclusive. This is particularly true in light of the controversy over the incidence of the corporate tax, and the fact that there is no evidence in the available data that corporate tax rates have impaired the growth of the economy.

96 The incidence of the corporate income tax is in dispute. Recent studies have yielded an improved theoretical view of the incidence of the tax in a competitive model (allowing for interactions in a general equilibrium system). If one accepts this view, then the short-run incidence of the tax is said to rest with the owners of capital invested. However, others have continued to point to market imperfections which may alter the results. Econometric studies of the problem have not provided a satisfactory answer as yet. (See Richard A. Musgrave and Peggy B. Musgrave, Public Finance in Theory and Practice (New York: McGraw-Hill Book Co., 1973), p. 396.) Studies on the regressivity of the property tax have been done by the Advisory Commission on Intergovernmental Relations. These studies show that the property tax is not regressive except at the very low and very high-income groups. (See Joint Economic Committee, Value-Added Tax Hearings, 1972, p. 16.)
corporate sector. There are also indications that the rate of economic growth is quite insensitive to the rate of investment, that technological changes seem to be the more dominant force over the long run. Moreover, in the past decade we have not done so terribly bad in the growth department.

The VAT, also, imposes a difficulty with respect to its impact on inflation. It cannot be worthwhile to implement a VAT that would undoubtedly be reflected in price increases by the amount of the tax. This, in itself, is not so burdensome at least no more so than an increase in income taxes at a comparable rate. Knowing the behavior of wages and prices in our economy, however, the employment of a VAT would surely result in further wage and price increases, thus presenting a more complicated problem for price stabilization.

The VAT is said to be economically efficient with respect to distortions in the free and efficient flow of resources (that it is neutral in this respect). There is no such thing as a completely neutral tax. Some transactions or people must, in the end, be taxed and not others. With the VAT, the distortions are found in consumption rather than in production.

What about the administrative costs of VAT? In this country we do not have the apparatus to collect a VAT,
but we do have the apparatus to collect income taxes.
Phillip Lifschultz (Vice President of Montgomery Ward and Co. and Chairman of the Tax Committee of the American Retail Federation) has indicated, for example, that the initial collection cost on a low-rate VAT may run high; that the total cost to collect a VAT may run around 5 per cent of the total revenue collected (based on a $360 million collection cost estimate). The cost may simply not be worth it.

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97Joint Economic Committee, Value-Added Tax, Hearings, 1972, p. 77.
Table 1
Revenue Effect of Various Structural Reforms of the Individual Income Tax under Alternative Packages, 1972 Income Levels

<table>
<thead>
<tr>
<th>Reform Provision</th>
<th>Package 1</th>
<th>Package 2</th>
<th>Package 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Remove maximum tax on earned income</td>
<td>0.1</td>
<td>0.1</td>
<td>0.1</td>
</tr>
<tr>
<td>Include 60 percent of realized capital gains in adjusted gross income and remove alternative capital gains tax provision</td>
<td>1.5</td>
<td>1.5</td>
<td>1.5</td>
</tr>
<tr>
<td>Eliminate deduction of gasoline taxes</td>
<td>0.5</td>
<td>0.5</td>
<td>0.5</td>
</tr>
<tr>
<td>Eliminate deduction of real estate property taxes</td>
<td>...</td>
<td>...</td>
<td>...</td>
</tr>
<tr>
<td>Remove dividend exclusion</td>
<td>0.4</td>
<td>0.4</td>
<td>0.4</td>
</tr>
<tr>
<td>Eliminate 50 percent of excess depletion advantages</td>
<td>0.2</td>
<td>0.2</td>
<td>0.2</td>
</tr>
<tr>
<td>Place 3 percent floor on charitable contribution deductions</td>
<td>...</td>
<td>1.9</td>
<td>1.9</td>
</tr>
<tr>
<td>Tax unrealized capital gains in excess of $5,000 transferred by gift or bequest at capital gains rates</td>
<td>...</td>
<td>...</td>
<td>0.6</td>
</tr>
<tr>
<td>Remove $25,000 exemption allowed for excess investment interest deduction</td>
<td>...</td>
<td>...</td>
<td>1.2</td>
</tr>
<tr>
<td>Revise preference income base&lt;sup&gt;a&lt;/sup&gt;</td>
<td>0.5</td>
<td>...</td>
<td>...</td>
</tr>
<tr>
<td>Revise preference income base&lt;sup&gt;a&lt;/sup&gt; and raise tax rate on revised base from 10 to 20 percent</td>
<td>...</td>
<td>1.1</td>
<td>...</td>
</tr>
<tr>
<td>Revise preference income base&lt;sup&gt;a&lt;/sup&gt; and tax at one-half the regular income tax rates&lt;sup&gt;b&lt;/sup&gt;</td>
<td>...</td>
<td>...</td>
<td>2.4</td>
</tr>
<tr>
<td>Total Revenue Effect</td>
<td>3.1</td>
<td>5.6</td>
<td>10.2</td>
</tr>
</tbody>
</table>

<sup>a</sup>Revision of preference income base involves inclusion of state-local bond interest as a preference item and removal of deduction for current-year taxes paid.

<sup>b</sup>That is, tax the revised base at 7 percent to 35 percent—one-half the regular rates, which range from 14 to 70 percent.

<sup>c</sup>The total revenue effect of each package is not equal to the sum of the components because various provisions interact with one another.
Table 1 (continued)


Notes: Table 1 shows three different packages of possible revenue-raising reforms. These include various reform provisions which are listed in the table. Package 3, which contains the largest number of reforms, would raise $10.2 billion a year. Most of these reforms would not affect corporations, but those that did would probably increase 1972 revenues by $3.2 billion. Together these reforms (package 3) would raise $13.4 billion. Most of the changes would not significantly affect average low and middle-income taxpayers. (The exception is personal deduction for gasoline and property taxes.)
Table 2

Current Effective Individual and Corporation Income Tax Rates and Rate Increases under Surcharge and Percentage Point Methods of Raising Additional Revenue, by Income Classes, 1972 Income Levels

(Income classes in thousands of dollars; other numbers in percent)

<table>
<thead>
<tr>
<th>Source of Effective revenue, and income class for individuals</th>
<th>Increase in effective rate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$12 billion tax increase</td>
</tr>
<tr>
<td></td>
<td>(1) (2) (3) (4) (5)</td>
</tr>
<tr>
<td>Individuals, total</td>
<td>11.0 0.9 0.9 1.8 1.8</td>
</tr>
<tr>
<td>Income Class</td>
<td></td>
</tr>
<tr>
<td>0-3</td>
<td>0.5 c c 0.1 0.1</td>
</tr>
<tr>
<td>3-5</td>
<td>1.7 0.1 0.2 0.3 0.4</td>
</tr>
<tr>
<td>5-10</td>
<td>5.1 0.4 0.6 0.9 1.1</td>
</tr>
<tr>
<td>10-15</td>
<td>8.6 0.7 0.8 1.4 1.7</td>
</tr>
<tr>
<td>15-20</td>
<td>10.5 0.9 1.1 1.8 2.1</td>
</tr>
<tr>
<td>20-25</td>
<td>11.8 1.0 1.1 2.0 2.2</td>
</tr>
<tr>
<td>25-50</td>
<td>13.9 1.2 1.2 2.4 2.3</td>
</tr>
<tr>
<td>50-100</td>
<td>22.2 1.9 1.3 3.8 2.5</td>
</tr>
<tr>
<td>100-500</td>
<td>31.0 2.6 1.2 5.2 2.3</td>
</tr>
<tr>
<td>500-1,000</td>
<td>32.8 2.8 0.9 5.6 1.9</td>
</tr>
<tr>
<td>1,000 and over</td>
<td>34.2 2.9 0.9 5.8 1.8</td>
</tr>
<tr>
<td>Corporations</td>
<td>40.0 3.9 3.9 7.8 7.8</td>
</tr>
</tbody>
</table>

aUnder the surcharge method, a percentage surcharge is applied on all tax liabilities; under the percentage point method, each bracket rate is increased by the same number of percentage points.

bIncome for individuals is equal to the sum of adjusted gross income, transfer payments, state and local government bond interest, and excluded realized long-term capital gains. The total includes negative income class not shown separately.

cLess than 0.05 percent.
Table 2 (continued)


Notes: Table 2 shows the impact on effective tax rates of raising $12 billion and $24 billion by two methods. (The first is to increase each bracket rate by the same number of percentage points; the second is to apply a percentage surcharge to all tax liabilities. The biggest difference between the two is that the surcharge is far more progressive.)

The approximate rate increases needed to increase individual and corporate income tax revenues by $12 billion would be 1.8 percentage points in all individual income tax brackets under the first method and 8.5 percent under the surcharge method. To increase revenues by $24 billion would indicate increases of 3.6 percentage points and 16.9 percent, respectively. (The increase in effective rates indicate average impacts in each income class.)
<table>
<thead>
<tr>
<th>Income class</th>
<th>Effective rate, current law</th>
<th>$10 billion tax increase</th>
<th>$12 billion tax increase</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Income tax reform&lt;sup&gt;c&lt;/sup&gt;</td>
<td>Income tax surcharge&lt;sup&gt;d&lt;/sup&gt;</td>
<td>Percentage point increase</td>
</tr>
<tr>
<td>0-3</td>
<td>0.5</td>
<td>0.3</td>
<td>0.1</td>
</tr>
<tr>
<td>3-5</td>
<td>1.7</td>
<td>0.1</td>
<td>0.2</td>
</tr>
<tr>
<td>5-10</td>
<td>5.1</td>
<td>0.2</td>
<td>0.6</td>
</tr>
<tr>
<td>10-15</td>
<td>8.6</td>
<td>0.4</td>
<td>1.0</td>
</tr>
<tr>
<td>15-20</td>
<td>10.5</td>
<td>0.6</td>
<td>1.3</td>
</tr>
<tr>
<td>20-25</td>
<td>11.8</td>
<td>0.7</td>
<td>1.4</td>
</tr>
<tr>
<td>25-50</td>
<td>13.9</td>
<td>1.2</td>
<td>1.7</td>
</tr>
<tr>
<td>50-100</td>
<td>22.2</td>
<td>3.0</td>
<td>2.6</td>
</tr>
<tr>
<td>100-500</td>
<td>31.0</td>
<td>8.4</td>
<td>3.5</td>
</tr>
<tr>
<td>500-1,000</td>
<td>32.8</td>
<td>16.3</td>
<td>3.9</td>
</tr>
<tr>
<td>1,000 and over</td>
<td>34.2</td>
<td>19.0</td>
<td>4.1</td>
</tr>
<tr>
<td>All classes</td>
<td>11.0</td>
<td>1.1</td>
<td>1.3</td>
</tr>
</tbody>
</table>
Table 3 (continued)

\( ^a \) Tax as percent of income.
\( ^b \) Income is equal to the sum of adjusted gross income, transfer payments, state and local government bond interest, and excluded realized long-term capital gains.
\( ^c \) Tax reform package 3 outlined in Table 1.
\( ^d \) Surcharge of 11.8 percent on 1972 income tax liabilities.
\( ^e \) 2.5 percentage point increase applied to each bracket rate.
\( ^f \) Broad-base value-added tax at 3.25 percent with full credit up to $5,000 for a four-person family; credit is phased out completely at $20,000.
\( ^g \) Narrow-base value-added tax at 3.0 percent.
\( ^h \) Includes negative income class not shown separately.


Note: Table 3 shows five methods for raising additional revenues. They are (1) structural reforms of the income taxes; (2) increases in income tax rates by imposing a surcharge; (3) increases in income tax rates by a certain number of percentage points; (4) enactment of a VAT (broad-base) with exemptions for rent, food, and medical care; and (5) enactment of a VAT (narrow-base) with a low-income credit but with no exemptions.

Table 3 shows how effective tax rates would be increased for families at various income levels if approximately $12 billion were raised by increases in individual taxes under each method. It is clear from the table that when the alternatives are compared the tax reform package is by far the most progressive at the high end of the income scale. The income tax surcharge would be next in order of progressivity. The narrow-base VAT would be regressive along the entire income scale. The broad-base VAT would have a progressive incidence not much different from that achieved by a constant percentage point increase in all income tax rates on incomes up to about $17,000. For incomes between $17,000 and $40,000, the broad-base VAT would increase tax liabilities by somewhat more than a percentage point income tax increase. With incomes above $40,000, the reverse would be true.
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