

**Using the Experience in the U.S. States to Evaluate Issues
in Implementing Formula Apportionment
at the International Level**

by

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A B S T R A C T

Using the Experience in the U.S. States to Evaluate Issues in Implementing Formula Apportionment at the International Level

Enterprises that do business in the United States and other countries and in several states of the United States have experience with two approaches for measuring their taxable income. For federal tax purposes, multinational enterprises follow a transaction-based approach that requires them to price their internal transactions so they can calculate the taxable income according to the separate accounts they maintain for their affiliates located in each country. The prices established for the internal transactions with affiliated foreign entities should be set as if the transactions had occurred with unrelated third parties. By contrast, for state tax purposes, multistate enterprises do not price each separate transaction but, instead, apportion the enterprise's total income to each affiliate according to the share of total business activity located in each state. In computing total taxable income, the parent company treats its out-of-state affiliates as part of a single entity, netting out internal transactions. The approach used by the federal government is known as separate accounting, and the approach used by the states is known as formula apportionment.

As background, the paper summarizes the states' experience with the formula apportionment tax method. It discusses how the states adopted a generally uniform system, and provides basic information on the components of the system. The heart of the paper addresses issues relating to implementing formula apportionment at the international level. It identifies some problems the states have encountered in applying formula apportionment and discusses some of the ways they have solved these problems. It also notes cases where the states have not been able to come up with satisfactory solutions. This analysis highlights the fact that adopting formula apportionment would introduce a host of new problems that must be resolved before seriously considering moving to formula apportionment at the international level.

The paper shows that formula apportionment has many advantages and that national governments can learn a great deal from the experiences of the U.S. states. Yet, it finds that despite the growing integration of the world economy, global economic conditions and the structure of international business have not yet undergone the transformations necessary to make the formula system workable at the Federal level. For example, nations still maintain numerous tax barriers to cross-border expansion, apply disparate accounting conventions, and follow different corporate tax systems. Thus, it would be premature to abandon the current international arm's length standard in favor of global formula apportionment.

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Bibliography

I. Introduction

Multinational enterprises have long struggled with the problem of allocating income and tax liability among the various countries in which they do business. For federal income tax purposes, international businesses must trace every transaction among affiliates to attribute income properly to its source. This method is based on the general principle that transactions between related parties should be priced as if they had taken place between unrelated parties. In doing so, this method helps prevent a shifting of income or deductions to tax-favored jurisdictions, and thus allows jurisdictions to protect their revenue bases. The arm's length method, which is also known as separate accounting, achieves this result by requiring that multijurisdictional companies treat transactions with their affiliated firms as if they were undertaken with separate, independent entities.

Domestic corporations that do business in several states face a similar problem in computing state income tax liability, but they use a different approach. A multistate enterprise does not price each transaction separately but, instead, apportions the enterprise's total income to each affiliate according to the share of total business activity in each state. This approach is known as formula apportionment.

Several analysts have suggested that formula apportionment might be a good model for multinationals, because of its comparative simplicity. For example, rather than requiring a multinational to price every transaction taking place within an integrated, multijurisdictional firm, apportionment allows the firm to apportion a single income figure using a formula. The increasing economic integration around the world has stimulated interest in such alternative models. For example, as part of a broad discussion of tax policy issues for the twenty-first century, Summers (1988) explained that "it is time to begin thinking of ways to address the technical problems created by world economic integration." Without endorsing the method, Summers referred to the method used by the states as an area for further exploration. Avi-Yonah (1994), Hellerstein (1993), and Kauder (1993) have gone a step further and suggested that the United States adopt formula apportionment as its primary method for taxing multinational enterprises.

This paper examines issues related to the possibility of implementing the state approach at the federal level.¹ The paper attempts to benefit from the more than half century of state experience with formula apportionment by taking a close look at some of the problems the states have faced in implementing the formula method and identifying their solutions to these problems. The paper begins in section I with a summary of the federal and state approaches. It also examines the forces that shaped their approaches for taxing multijurisdictional company income. Section II summarizes state practices. Section III examines some issues national

¹ This paper draws heavily from my dissertation. See Weiner (1994). The empirical results are summarized in Weiner (1996).

governments might face in designing and implementing a global formula apportionment tax system. Section IV concludes.

A. Separate accounting and the arm's length standard

Separate accounting and formula apportionment are two different approaches for dealing with the intercompany transactions of a multijurisdictional enterprise. For federal tax purposes, multinational companies generally use separate accounting to price their internal transactions to come up with the amount of income earned by their affiliates located in different countries. For state tax purposes, multistate enterprises generally use formula apportionment to assign their total income to their affiliates located in different states.

1) The Federal approach

Since adopting the corporate income tax following the 16th Amendment in 1913, the Federal government has taxed U.S. companies on their worldwide income.² The tax law, however, draws a distinction between profits earned domestically and profits earned abroad. Thus, for tax purposes, a multinational corporate group generally isolates the income earned in its foreign operations from the income earned in its domestic operations. To determine the amount of income earned by different entities, a multinational group uses the separate accounting approach, and applies the arm's length standard to price internal transactions.³

Under this system, a multinational enterprise finds the income earned in each country from the receipts and expenses generated by, or attributable to, the operations located in each country. Under federal law, a multinational corporate group is required to treat a transaction that takes place with an affiliated party in the same manner as if that transaction had occurred with an unrelated third party. Therefore, for tax purposes, affiliated businesses should set transfer prices at the level that would have prevailed had the transactions occurred between unrelated parties. To do so, firms attempt to determine market-based (or "arm's length") prices for goods and services they transfer internally. These prices approximate the prices those independent entities would use when selling goods and services to each other in a market relationship. The goal of this approach is to find a result that approximates the outcome that independent entities operating at arm's length would achieve.

The economic principles underlying the arm's length approach are that unrelated

² The Federal government had effectively been precluded from applying an income tax until this Amendment. See *Pollock v. Farmers' Loan and Trust Company*, 157 U.S. 429 (1895).

³ The same approach must be followed for transactions between domestic companies under common control.

companies, when evaluating the terms of a potential transaction, would consider the available alternatives to that transaction. They would enter into a transaction if, considering all factors, no available alternative is more profitable than that transaction. This notion leads companies to compare the controlled transaction to the parties' alternatives for evidence on the price that sellers would be willing to accept and that buyers would be willing to pay in an arm's length transaction.

The Internal Revenue Service's experiences with this approach dates from 1935 when the first regulations were issued establishing the arm's length standard as the fundamental principle for measuring the income of related foreign operations.⁴ In 1968, the IRS issued detailed regulations under section 482 of the Internal Revenue Code (IRC) setting forth acceptable methods for applying the arm's length standard. These regulations require that: "In determining the true taxable income of a controlled taxpayer, the standard to be applied in every case is that of a taxpayer dealing at arm's length with an uncontrolled taxpayer."⁵ These regulations are updated frequently to reflect changes in international business practices and accumulated experience in the application of the arm's length standard.

2) *The international approach*

Even though the volume of multinational business was low in the 1930's, the international community recognized that jurisdictional conflicts were likely to multiply and potentially lead to double taxation if countries continued to apply different methods for taxing multinational income. Thus, the Fiscal Committee of the League of Nations, in collaboration with the International Chamber of Commerce, set out to find a common method for taxing international business. If nations could agree on a common approach, they could then eliminate the double taxation that arose from the inconsistencies in the principles and methods of allocating the income of multinational enterprises.⁶

At the time the Committee conducted its study, the nations used three general methods to allocate the income of international enterprises: Separate accounting, an empirical approach, and "fractional" apportionment.⁷ Most of the thirty-five countries studied used separate accounting as their primary approach. In implementing separate accounting, most

⁴ See U.S. Treasury/Internal Revenue Service *White Paper* (1988) for details.

⁵ Treas. Reg. section 1.482-1(b)(1).

⁶ See Carroll (1933). Mitchell Carroll was the financial expert of the Fiscal Committee of the League of Nations. The report covered the legislation, jurisprudence, and taxation of foreign and national enterprises in thirty-five nations.

⁷ The report used the term "fractional" apportionment to refer to the "formula" apportionment method.

countries required that every enterprise, whether domestic or foreign, doing business in the country keep accounts that reflected its exact financial position.

Some countries also used the empirical approach. These countries included the United Kingdom and the British Commonwealth countries, the United States, and most European countries. Under this approach, the tax authorities estimated an enterprise's income by comparing that enterprise with similar enterprises, taking into account turnover, assets, and other readily measured factors. The most common method involved estimating the enterprise's local profits in relation to the percentage of net profit to gross receipts of similar enterprises. As with fractional apportionment, many tax authorities resorted to this approach only when they suspected a company of misreporting its accounts or when they could not obtain the necessary information concerning the total net income of a foreign enterprise.

The broadest application of fractional apportionment occurred in Spain, which applied the fractional apportionment system on an unlimited basis for branch operations. Under fractional apportionment, a multinational company would apportion its income according to a formula, as done in the U.S. states under formula apportionment. For subsidiary companies, if the Spanish company formed an economic unit with a foreign enterprise, the Spanish company was subject to tax as if it were a branch of the parent company.⁸ The income of a foreign enterprise with a branch in Spain was measured by the proportion of local property to total property or of local turnover to total turnover. There was no set formula for apportioning the profits of a subsidiary. Instead, the tax authorities based the formula on the particular circumstances of each case.

The apportionment method was also used in certain bilateral tax treaties. For example, tax treaties between Austria and Hungary and between Austria and Czechoslovakia contained specific apportionment formulae. The Swiss cantons and the U.S. states studied by the Committee also used an apportionment method.

The Committee considered whether formula apportionment would be an appropriate method for the countries to adopt as a common system, and it looked to the experiences in several U.S. states for advice. Although formulary taxation had substantial advantages for the states, the Committee rejected that approach for the nations, arguing that a "fundamental difference" existed between doing business in the U.S. states and in the various European countries. The Committee explained that the tariff walls that surround each country, but not the states, tend to force companies to segregate their business profits by country. When differences in language, currency, and accounting systems were considered along with the tariff barriers, the separate accounting method was viewed as the best system for taxing

⁸ According to the report, Spain had completely abandoned separate accounting because foreign enterprises generally failed to keep fair accounts and the tax authorities could not verify the accounts.

multinational companies. Economic factors also argued for use of the separate accounting method. Per capita purchasing power, costs of doing business, and other economic factors varied from country to country. Only separate accounting could accurately reflect these differences. Because these legal, financial, and economic conditions forced multinational companies to make a geographical distinction of the source of their income by drawing up separate accounts, it seemed logical for tax authorities to use the separate accounting system for tax purposes.

The Committee rejected formula, or fractional, apportionment for practical reasons, explaining that it appeared that countries would encounter almost "insurmountable" difficulties in attempting to apply apportionment on a general basis. Countries would find it difficult to agree on even the basic elements of the apportionment system, such as total net income and the apportionment formula. The Committee believed that countries could avoid these difficulties if they were allowed to tax only the portion of a multinational enterprise's business income directly attributable to a permanent establishment within its territory. It concluded that subsidiaries and, so far as possible, branches should be treated as independent entities.

This analysis led the member countries of the League of Nations to conclude that the arm's length approach was the best method available to avoid double taxation of multinational companies. The draft report of 1933 mandated that "[f]or tax purposes, permanent establishments should be treated in the same manner as independent enterprises operating under the same or similar conditions . . . The taxable income of such establishments is on the basis of their separate accounts."⁹

B. Formula apportionment and unitary taxation

1) The sub-national approach

The Territory of Hawaii had introduced a corporate income tax in 1901, but Wisconsin became the first state to tax corporate income, when it introduced a graduated corporate income tax in 1911. Once the Federal government adopted the income tax, the states adopted the federal income tax as the model for their tax base. This action was logical, as noted by the National Tax Association in 1919: "Prior to the coming of the federal income tax, it would probably have been unwise and impracticable to adopt net income as the basis of business taxation. But today every business concern of any considerable size is obliged to make a return of its net income to the federal government; and it is, therefore, both practicable and convenient to impose a business tax upon net income."¹⁰

⁹ *Procs. of Nat'l Tax Assoc.*, 1933, p. 270.

¹⁰ *Procs. of the Nat'l Tax Assoc.*, 1919, p. 454. Three-quarters of a century later, proposals to replace the federal income tax with a consumption tax have led one state policy

The states, however, did not follow the federal government's separate accounting approach for measuring the taxable income of a multistate enterprise. Since 1911, when Wisconsin adopted a formula based on property, cost of manufacture, and sales, the states have used a formula for taxing multistate enterprises. Wisconsin justified using the apportionment method because it viewed calculating separate accounts on a state-by-state basis as infeasible since most manufacturing corporations conducted only part of their business in the state. Since profit may be earned at every stage of production, regardless of where that production takes place, net profit cannot be attributed to a single element of the multistate business structure.

Thus, for state tax purposes, the apportionment method was more practical, since it does not require making these separate calculations. Instead, the formula method divides the total income of a multijurisdictional enterprise according to where the enterprise conducts its business activity. This activity is generally measured by its physical property, payroll, and gross sales. Thus, if a multistate company has 10 percent of its property, payroll, and sales activity in a state, then the formula attributes one-tenth of its income to that state.¹¹

The states first used formula-based taxation in the late 1800's for purposes of levying the property tax on the transcontinental railroad system.¹² They began to use a formula for the corporate income tax at the turn of the century, and the U.S. Supreme Court soon approved of the 'unit rule' for taxing income earned through a series of operations located in multiple states.¹³ These judicial decisions acknowledged that the value of the tangible property located

representative to state that "... repeal of federal income taxes effectively means repeal of state income taxes" (Bucks, 1995). This statement reveals the states' reliance on the federal definition of taxable income as a starting point in their apportionment process.

¹¹ Sub-national jurisdictions in Canada and Switzerland also use formula apportionment. See Daly and Weiner (1993) for an evaluation of the sub-national tax systems in Canada, Switzerland, and the United States.

¹² For example, the opinion stated that "The theory of the system is manifestly to treat the railroad track, its rolling stock, its franchise, and its capital, as a unit for taxation, and to distribute the assessed value of this unit according as the length of the road in each county, city, and town bears to the whole length of the road." *State Railroad Tax Cases*, 92 U.S. 575 (1875). This ruling approved application of the "unit rule" to property physically connected over state lines and allowed the entire value of the unit to be apportioned to each state by formula.

¹³ The Supreme Court first considered the 'unitary business principle' for property that was not physically linked in 1897 in *Adams Express Co. v. Ohio State Auditor*, 166 U.S. 171. It first addressed the formulary method for income tax purposes in 1920 in *Underwood Typewriter Co. v. Chamberlain*, 254 U.S. 113. It first used the term 'unitary business' in

in the state did not represent the total value of a multistate business. Instead, it was necessary to look at the tangible and intangible property values of the entire multistate unit of operations to determine its total value.

Since many companies did business in one state at that time, the states tended to accept a company's separate accounts as representative of their state income. Extensive cross-state business expansion, however, led companies to organize their books on a company-wide basis, rather than on a statewide basis, and separate accounting became less prevalent. Since many transactions took place within a single entity, there often were no external transactions available to determine the income earned in each state. Thus, many businesses preferred the simplicity of the formula approach to separate accounting. A survey taken by the National Tax Association in 1938 revealed that most states and businesses preferred formula apportionment to separate accounting. As one business leader explained, firms favored formula apportionment because separate accounting "is expensive, impracticable [and] necessarily arbitrary in the allocation of overhead items" and because "it is impossible to determine, in most cases, the profit at various stages of production or distribution."¹⁴

By that time, most states also preferred the formula approach. Difficulties in monitoring the arm's length prices chosen by integrated firms and the associated administrative and compliance costs caused the remaining support for separate accounting to dissipate. The growth in multistate business exacerbated these issues so that by the 1960's, only a handful of the states preferred separate accounting to formula apportionment.

The Federal government had also taken several looks at state corporate taxation. These examinations led the U.S. Congress to report that it had come to a similar conclusion. Regarding the taxation of multistate corporations, the Congress stated that:

". . . [The arm's length approach] . . . would be virtually impossible to administer at the State level as applied to interstate transactions. Thus, there is no significant disagreement that the states must use some type of apportionment formula (as distinguished from making an allocation of income and deductions by separate accounting), since there would be no practical way of determining what income of a company is earned within a state as opposed to being earned within other states (or in foreign countries)."¹⁵

1924 in *Bass Ale Ltd. v. Tax Comm'r*, 266 U.S. 271.

¹⁴ Procs. of the Nat'l Tax Assoc. (1939) , p. 200.

¹⁵ U.S. Congress (1977), p. 28.

Thus, a consensus had been reached between taxpayers and tax administrators. Given the economic integration that had occurred within multistate businesses, formula apportionment was the appropriate approach for state corporate income taxation.

2) Differences between formula apportionment and unitary taxation

Formula apportionment is often referred to as unitary taxation, but the terms are not equivalent. Apportionment refers to the process of using a formula to assign a portion of the total income of a company and its branches that operate in several locations to each individual location. Unitary taxation refers to the process of combining the functionally integrated operations of a multiple-entity affiliated corporate group that operate as a single economic enterprise into a single unit for tax purposes. The income of this unitary group is then calculate and then apportioned using a formula. In simple terms, unitary taxation refers to the process of determining the taxable group, whereas formula apportionment refers to the process of apportioning income by formula.¹⁶ (To make matters more complicated, however, while all states that tax corporate income use formula apportionment, only about half of those states use unitary taxation.) For simplicity, this paper will use the term formula apportionment taxation to refer to the broad application of the formulary method to the commonly-controlled, integrated parts of a unitary business.

The rationale for using formula apportionment rather than separate accounting is that despite separate corporate entities, related companies may collectively have many of the characteristics found in a single corporate entity. For example, affiliates may be under common ownership and have shared management and expenses, economies of scale, and functional integration. These characteristics make it difficult to draw a line between the integrated parts of the corporation for purposes of computing income earned by the various pieces of the company.

The combined business approach looks beyond a business's legal structure to its economic substance for tax purposes. Thus, it takes a "substance over form" approach. It treats a business enterprise with separately-incorporated related affiliates that are under common ownership and control in the same manner as it treats a business enterprise with related, but unincorporated branches. By looking to the economic substance of the company, the unitary method restricts a company's ability to set up a separate subsidiary for purposes of

¹⁶ The unitary group may differ from the group consolidated for federal tax purposes. At the federal level, the activities of all corporations that are at least 80 percent owned, whether directly or indirectly, are consolidated into a single return. Consolidation differs from unitary combination in that it is based on ownership and does not consider whether the companies are part of a unitary business. Although constitutional restrictions prohibit states from requiring consolidation in the absence of a unitary relationship, some states allow companies the option to use consolidation.

reducing its tax liability.

II. State practices

This section summarizes current state practices and discusses the states' experiences with formula apportionment, including an analysis of how the states were able to reach broad agreement on the basic elements of the system. By identifying some of the issues the states have faced in using formula apportionment and discussing the various ways they have resolved these issues, this section provides a framework for evaluating a potential move to formula apportionment at the international level.

Each of the 45 states and the District of Columbia with a corporate income tax uses formula apportionment.¹⁷ State tax rates range from 2 percent to 12 percent, and are deductible for federal income tax purposes. A number of states also impose a corporate minimum tax. Table 1 shows when the states adopted the corporate income tax, state tax rates, and the minimum tax imposed by the states.

A. State efforts to achieve uniformity

Although there are certain differences across the states, state corporate income tax practices are remarkably similar. All of the states that tax corporate income use formula apportionment, define the factors and formula in the same broad manner, and generally begin with federal taxable income as the definition of total income.

1) The National Tax Association

Decades of market and legislative forces pushed the states to craft a generally uniform system. This pressure started to build shortly after the states began adopting the corporate income tax. Tax administrators foresaw the chaos that could erupt if state taxes were not coordinated, and, in 1915, when just a handful of states taxed corporate income, the National Tax Association (NTA) began designing a model multistate business income tax to alleviate the double taxation that could arise from the application of a variety of business taxes. In 1922, the Committee concluded that the apportionment method dominated the separate accounts and specific allocation methods. It found that the federal separate accounts approach would be impractical because it would require business to make assumptions on how to set prices for goods that crossed state borders, and it would be prohibitively expensive for the states to audit the firm's accounts.

¹⁷ Michigan has replaced its income tax with a single business tax based on value added. It uses a formula to determine the starting point for measuring value added in the state.

Over the next few years, the NTA adjusted its proposed model business tax as additional states adopted the corporate income tax and as the states refined their formulae to accommodate changing business conditions. In the early years of apportionment, the states attempted to craft formulae that captured all of the factors that generated income. However, since the proliferation of formulae introduced complexity and meant that multistate companies may not have been taxed on 100 percent of their income, the National Tax Association set out to define a theoretically correct single formula that all of the states could adopt and that continued to reflect the source of income.

The NTA spent several years attempting to come up with such a formula, before concluding that "there is no one right rule of apportionment . . . The only right rule . . . is a rule on which the several states can and will get together as a matter of comity."¹⁸ To reiterate its conclusion, the NTA noted that the apportionment method may not be 'unduly criticized' on the ground that the formula is arbitrary, because "all methods of apportionment of trading profits are arbitrary." The NTA argued that getting the states to agree to use the same formula was more important than getting them to define any particular formula.

In 1933, the NTA recommended that the states adopt the formula that was then the most widely used among the states. That formula was the property-payroll-sales formula, with each factor weighted equally. This formula was known as the "Massachusetts" formula. Following this recommendation, the states gradually moved to the Massachusetts formula as their standard.

2) The Uniform Division of Income for Tax Purposes Act

A standardized formula would not be sufficient, however, if the definitions of the factors were not also standardized. In 1957, a major breakthrough occurred when a group of state legislators crafted the Uniform Division of Income for Tax Purposes Act (UDITPA). This Act defines not only a common formula, but also common rules for measuring the factors in the formula and for allocating specific types of income. The Act also contains a relief provision, which discusses the procedures to follow in cases where the specified approach was deemed improper. Thus, for the first time, the states had a set of common standards to allocate and apportion the income earned by multijurisdictional corporations.

Despite this set of standards, however, the states were not able to adopt these rules as quickly as the federal government felt they should, so the Congress took additional steps. In 1959, the Congress enacted legislation establishing minimum standards for the imposition of state sales taxes and called for a comprehensive congressional study of corporate income tax practices in the states. These efforts were designed with an eye toward using federal legislation to lead the states to harmonize their tax practices. This mandate led to the creation

¹⁸ *Procs. of the Nat'l Tax Assoc.* (1922) , p. 202.

of a committee, chaired by Congressman Willis, that published the “Willis Report,” documenting the lack of uniformity in multistate tax practices. The report also called for the states to adopt a standard property and payroll apportionment formula and to cease using separate accounting.

In the mid-1960's, Congress followed up on the Willis Report by introducing legislation that would have required the states to use the same property and payroll formula and to adopt further uniform measures. Related bills were introduced throughout the 1970's. In the 1980's, Congress attempted to eliminate the practice of taxing multinational companies on their worldwide unitary activities. Despite three decades of activity, however, the Congress failed to enact any of the bills that would have restricted state taxation of multistate businesses.

Although the Congress has failed to enact any legislation, the ongoing pressures of market forces led the states to further harmonize their corporate income tax laws. To encourage this harmonization, the states created the Multistate Tax Compact and the Multistate Tax Commission (MTC) in 1967. The Commission is designed to help make state tax systems fair, effective, and efficient as they apply to interstate and international commerce and to protect state tax sovereignty. The Commission encourages states to adopt uniform state tax laws and regulations that apply to multistate and multinational enterprises. The Compact incorporates the income division rules outlined in UDITPA and provides regulations to carry out the Compact. These efforts have made state tax practices more uniform as most state tax statutes, even if the state is not a member of the Multistate Tax Commission, now contain the broad language of UDITPA. The MTC revises its regulations to reflect developments in state income tax issues.

B. Key components of the formula apportionment system

The formula apportionment system has three key economic components: apportionable income (the tax base), the composition of the formula and the definition of the factors, and the scope of the unitary business.

1) Apportionable income (the tax base)

In general, a multistate business may be subject to income tax in another state only if its activity in that state exceeds a threshold established by the federal government in 1959 under Public Law 86-272.¹⁹ A seller will not be liable for state income tax in the state of

¹⁹ This law effectively nullified the effects of two U.S. Supreme Court decisions earlier that year upholding the taxing jurisdiction of a state over an out-of-state seller who had only marginal contact with the state. See *Northwestern States Portland Cement Co. v. Minnesota* (1959).

destination if its only business activity within the state is the solicitation of orders for sales of tangible personal property, provided the orders are sent to another state and the shipment or delivery takes place outside of the state.

Once a business has met the threshold nexus requirement, it then has to determine how much of its income is subject to state tax. Under the UDITPA rules, that determination involves distinguishing between income that is earned as part of the business and income that is earned incidental to the business. In general, business income is income that arises from transactions and activity in the regular course of the taxpayer's trade or business. It includes income from tangible and intangible property if the acquisition, management, and disposition of the property constitute integral parts of the taxpayer's regular trade or business operations. Nonbusiness income equals income that is incidental to the trade or business. That is, nonbusiness income is any income that is not business income. Whether an item of income is business or nonbusiness income depends on how that income was created. For example, interest income is business income if the intangible with respect to which the interest was received arises out of or was created in the regular course of the taxpayer's trade or business operations or where the purpose for acquiring and holding the intangible is related to such trade or business operations.²⁰

Most states use federal taxable income as the starting point for measuring the total income to be apportioned.²¹ The states may modify this amount to reflect certain state policies by adding back items that are deductible from federal taxable income, such as foreign income taxes, capital losses, and interest on state, local, and foreign obligations, or by subtracting items, such as certain intercompany dividends, interest on Federal obligations, and any items of income allocated to a particular state, including expenses associated with that allocable income. This state-defined amount equals adjusted income for state purposes. This amount is then adjusted for non-apportionable income and expenses to obtain business income that is subject to apportionment. Business income is multiplied by the apportionment formula to obtain the amount of business income earned in the state.

The MTC has issued regulations that attempt to provide greater precision to the UDITPA definitions. The regulations establish that "all income is business income unless clearly classifiable as nonbusiness income."²² Under these regulations, "the critical element in

²⁰ MTC Reg. IV.1(c)(3) Interest.

²¹ For example, North Dakota's income tax law is perpetually "Federalized" for tax years beginning in 1989.

²² MTC Reg. IV.1(a) Business and Nonbusiness Income Defined. On November 20, 1996, the MTC announced that it is forming a public participating working group to further develop regulations on classifying business income.

determining whether income is 'business income' or 'nonbusiness income' is the identification of the transactions and activity which are the elements of a particular trade or business." The definition of business income is broad, as any transactions and activities that are "dependent upon or contribute" to the operation of the taxpayer's entire economic enterprise constitute the taxpayer's trade or business.

Nonbusiness income is allocated to a specific state, generally to the taxpayer's state of commercial domicile or to the location of the income-producing activity. Interest and dividends, for example, are allocated to the taxpayer's commercial domicile. Rents and royalties are allocated to the location where the property is used. Capital gains and losses from sales of real property located in the state are allocated to the state, while capital gains and losses from sales of intangibles are allocated to the taxpayer's commercial domicile.

Since the distinction between business and nonbusiness income can be murky, some states avoid drawing the line. They adopt a "full apportionability" approach and apportion all income, whether derived from the business or not. Hoping to avoid this complication, the Willis Committee also recommended that states eliminate the distinction between business and non-business income.

Table 2 shows the member states of UDITPA and how they allocate items of nonbusiness income.

2) Elements in the formula

The definition of the formula and factors are important to the apportionment system, although the actual choice of formula is less important than often presumed. As the states learned in the early years of taxing multistate companies, agreeing on the same formula is more important than choosing any particular formula.

Competing forces have influenced the choice of the factors in the formula. First, the factors should reflect how income is generated and recognize the contributions to income made by the manufacturing and the marketing states.²³ To gain this precision in measuring the location of income, the states initially crafted formulae that represented a wide range of activities. In 1929, for example, the formulae used by the sixteen states then taxing corporate income included property, payroll, sales, manufacturing costs, purchases, expenditures for labor, accounts receivable, net cost of sales, capital assets, and stock of other companies.

Attempting to gain this precision, however, significantly complicates the apportionment

²³ The Supreme Court described this provision as "external consistency," meaning that the factors in the formula should reflect a reasonable sense of how income is generated. See *Container Corp. v. Franchise Tax Bd.* (1983).

process, and it may lead to substantial multiple taxation across the several states that tax company income. To offset these forces, the states modified the apportionment process by adopting a simple, common formula. Thus, the property, payroll, and sales formula came to be the standard formula. Although only two of the sixteen taxing states used the property-payroll-sales formula in 1929, by 1963 26 of the 38 taxing states used that formula, 41 of the 46 taxing states by 1977, and 44 of the 46 taxing states by 1989. Table 3 shows the formulae used in various years. Table 4 shows current formulae.

A recent issue that has influenced the formula arises from the desire to avoid creating a disincentive to business investment in the state. By using a formula to measure state income, the states are effectively taxing the factors included in the formula.²⁴ Therefore, states that use property and payroll to apportion income may discourage a company from hiring additional capital and labor in the state. To minimize this adverse influence, states may attempt to use a formula that minimizes the tax burden levied on factors located in the state. By contrast, if revenue considerations influence the definition of the formula, a different formula would be chosen. If companies do not respond immediately and fully to cross-state differences in the formula, a formula that incorporates all of the factors that generate income will also maximize the revenue attributed to the state. Conversely, a formula that reduces the tax burden on companies doing business in the state will also minimize the tax revenues collected by the state, again assuming that companies do not respond to differences in the formula.²⁵

No single formula can simultaneously meet all of the goals described above. For example, consider the rationale for including property in the formula. Since a company earns income from its use of property, the property factor belongs in the formula. However, using property to apportion income may discourage a company from investing in that location since it may be able to reduce its total tax burden by investing in states that do not use property in the formula. Under this argument, a state should exclude property from the formula. Iowa, which uses a sales-only formula, illustrates this situation.²⁶ A multistate company can hire additional capital or payroll in Iowa and, as long as its Iowa sales don't change, it will not increase the amount of income apportioned to the state.

²⁴ McLure (1980) elaborates on this point.

²⁵ Chapter 3 of Weiner (1994) finds no statistical influence on production decisions from the cross-state variation in the formulae used by the states in 1977.

²⁶ Despite the differences in the income allocation that would arise from Iowa's single factor formula and the three-factor formula used in nearly all other states, the U.S. Supreme Court upheld Iowa's right to use a single-factor formula in *Moorman Mfg. Co. v. Bair*, 437 U.S. 267 (1978). The Court argued that it was not Iowa's use of a single-factor formula, but the overlap between two different formulae that could lead to multiple taxation. Multiple taxation could just as easily arise if all states but one used the same single-factor formula.

The property, payroll, and sales formula strikes a balance between these competing influences. It includes factors that provide a reasonable measurement of the income generated by the business activities located in the state. It does not place a disproportionate weight on any of the factors, and it apportions some income to the states where production occurs and some income to the states where sales occur.

A relatively minor issue in defining the formula concerns the weight applied to each factor. Initially, the states weighted each factor equally, arguing that there was no reason to give one factor a greater weight than another. However, many states have recently adopted a "double-weighted" sales formula, reasoning that the formula should provide an equal weight to the manufacturing (property and payroll) and marketing (sales) functions. This formula assigns half of the income to the location of property and payroll and half of the income to the location of sales.

3) UDITPA definitions of the factors

The Uniform Act provides a starting point for defining the factors. The states have generally found these definitions to be workable, and most states have adopted these or similar definitions.

(a) Property

Property equals the average value of the taxpayer's real and tangible personal property owned or rented and used in the taxing state. Real and tangible property includes land, buildings, machinery and equipment, inventory, furniture and fixtures, and other real and personal tangible property. Owned property is valued at original cost plus the cost of additions and improvements. Original cost is used because the value is available from the company's books and it avoids differences caused by varying methods of depreciation. Rented property is valued at eight times its net annual rent.

Because the tax base generally excludes intangible income, the property factor also generally excludes intangible property. If a state allocates income from intangibles to a particular state, it would be improper to include in the property factor the property that generates intangible income. Moreover, the difficulty in identifying the location of intangible property makes it difficult to assign the property to the numerator of any state's factor.

(b) Payroll

Payroll equals the total amounts paid for compensation of employees. Compensation includes wages, salaries, commissions and any other form of remuneration paid to employees for personal services. In-kind payments, such as rent and housing, are considered income if treated as such under federal law. The term employee includes officers or individuals who have an employee status. Payments to independent contractors or other persons who are not

classified as employees are excluded.

The numerator of the payroll factor is the total amount paid in the state for compensation. Since this rule is drawn from the Model Unemployment Compensation Act, the company may generally derive its payroll factor from tax returns filed for state unemployment insurance purposes.

If an employee works in more than one state, the state attributes compensation to the employee's base of operations. If an employee has no particular base of operations, the state assigns compensation to the individual's residence state.

(c) Sales, or gross receipts

The sales, or gross receipts, factor includes all gross receipts net of returns, allowances, and discounts of the taxpayer derived from transactions and activity in the regular course of the trade or business, excluding such receipts that the state allocates to a specific state. The sales factor is broader than receipts from sales of goods, as it includes business income from not just sales of tangible property, but also business income from sales of services, rentals, royalties, and business operations.

States divide sales into receipts from sales of tangible property and receipts from sales of intangible property and the performance of services. Sales of tangible personal property are assigned to a state if the company delivers or ships the good to a purchaser in the state.

Many states impose a "throwback" rule under which sales made to the federal government or to a state where the taxpayer is not taxable are returned to the state of origin for taxation. The origin state is the state from which the company ships the good from a place of storage. This rule limits the ability of a company to ship its goods to a non-taxable location for purposes of avoiding state taxation.

UDITPA assigns sales of other than tangible personal property to the state where the income-producing activity is performed. If the income-producing activity is performed in multiple states, the sales are assigned to the state where the greatest proportion of the income-producing activity is performed, based on the costs of performing the activity.

It can be difficult to find the location of intangible income. The MTC regulations, for example, provide a special rule for treating business income from intangible property that cannot be assigned to any particular income producing activity. Because the income has no "location," it is excluded from, or "thrown out" of, both the numerator and denominator of the sales factor. This procedure distributes the income among the states that impose income

taxes.²⁷

If the intangible income is earned as part of the ordinary trade or business, the amount of income will also be included in the numerator of the sales factor of the state where the greatest share of activity is performed, based on costs of performance. Alternatively, the state may assign the income to the numerator of the sales factor in proportion to the use of the intangible property in the state. As with income from intangible property, items of income that are specifically allocated to a state are excluded from the sales factor. The apportionment formula then excludes any property, payroll, or sales associated with generating that non-business income.

4) The unitary business

All of the states that tax corporate income have adopted formula apportionment, but only some of the states extend the corporate income tax to cover the multiple entities of a unitary business, while other states restrict the scope of the formula to separate entities. Some states allow the taxpayer to choose whether it will file on a multiple-entity or a separate-entity basis. Formal laws and regulations in many states can be unclear, while other states may rely on judicial rulings in particular circumstances.

Defining a unitary business can be difficult since it requires deciding which of the separately-incorporated affiliates a parent company should include in the combined business for tax purposes. The answer relies on judgment, which can lead to disagreements between the taxpayer and tax authorities over the entities chosen to include in the unitary business. The lack of a precise definition for a unitary business can also lead to uncertainty, which may, in turn, lead to economic inefficiency if that uncertainty distorts business decisions.

Unlike with the definitions for the formula and the tax base, the states have not come up with a standard definition of a unitary business. The UDITPA, for example, does not mention the notion of a unitary business. The MTC regulations provide that the facts of the case determine whether a taxpayer is engaged in a unitary business with its affiliated operations.²⁸ Determining whether a business is unitary depends on determining whether the entity is engaged in the same type of business, if its operations are steps in a vertical process, if the operation of one business segment depends on or contributes to the operation of another business segment, or if the entity exhibits functional integration, centralized management, or

²⁷ See MTC Reg. IV.18.(c) Special Rules: Sales Factor.

²⁸ In late 1996, the MTC issued draft regulations that would provide standards for determining the scope of a unitary business by defining a unitary business as an enterprise comprised of one or more business segments that are sufficiently related to one another for their business income to be aggregated and apportioned by a common apportionment formula.

economies of scale. Control is generally a prerequisite to finding a unitary business. But, although a flow of goods between affiliates may be sufficient to show that a business is unitary, a flow of goods is not necessary to create a unitary business relationship. A flow of value may indicate that a business is unitary.

The absence of clear statutory guidelines on this issue is reflected in judicial decisions addressing the unitary tax. For example, the Supreme Court made the following statement: "A final point that needs to be made about the unitary business concept is that it is not, so to speak, unitary: there are variations on the theme, and any number of them are logically consistent with the underlying principles motivating the approach."²⁹ The Supreme Court has explained that ". . . the application of the unitary-business principle requires in each case a careful examination both of the way in which the corporate enterprise is structured and operates, and of the relationship with the taxing State."³⁰ It is not an exchange of goods but an 'exchange of value' that presents the overriding consideration for determining whether a unitary business exists. An exchange of value can arise in many ways, such as from functional integration, centralized management, and economies of scale. It may also arise if the parent plays a management role, if the corporations are engaged in the same line of business, or if the company undertakes transactions that do not occur at arm's length.³¹

III. Implementing formula apportionment at the federal level

This section evaluates some issues that might be relevant when considering implementing formula apportionment taxation at the international level. To begin, it is helpful to identify conditions that have enhanced the abilities of the states to use formula apportionment. The states' success with formula apportionment is largely due to factors that are unique to the states, such as the ability to work under the umbrella of the federal tax system, to rely upon federal tax administration through the Internal Revenue Service, and to

²⁹ See *Container Corp. v. Franchise Tax Board*, 463 U.S. 159 (1983). For additional decisions in this area, see *Bass Ale, Ltd. v. Tax Comm*, 266 U.S. 271 (1924); *Mobil Oil Corp. v. Commissioner of Taxes*, 437 U.S. 425 (1980); *Exxon Corp. v. Wisconsin Dept. of Rev.*, 447 U.S. 207 (1980); *ASARCO Inc. v. Idaho State Tax Comm'n*, 458 U.S. 307 (1982); *F.W. Woolworth Co. v. Taxation and Revenue Dept.*, 458 U.S. 354 (1982); and *Barclays Bank, PLC v. Franchise Tax Bd. of Cal.*, 114 U.S. 2268 (1994).

³⁰ *ASARCO Inc. v. Idaho State Tax Comm'n*, 102 U.S. 3103 (1982).

³¹ A separate issue in the unitary tax debate concerns whether the tax may extend to the worldwide affiliated operations of a multinational enterprise. A discussion of this issue is beyond the scope of this paper. For details, see *Barclays Bank v. California Franchise Tax Board*, 114 U.S. 2268 (1994).

use common accounting and tax conventions. Because U.S. companies already compute their total income for federal tax purposes, it is a simple matter for the states to use that amount as the base for total income. As noted earlier, it would have been impracticable for the states to adopt the corporate income tax in the absence of the federal corporate income tax.

Another factor that enhances use of formula apportionment in the states is the similar tax environment at the state level relative to the international level. For example, there are no tax barriers to cross-state expansions or mergers. No state imposes a withholding tax on payments from a taxpayer in one state to an affiliate located in another state. These common elements, combined with the lack of barriers to cross-state business and income flows, create the conditions that encourage companies to become functionally integrated, to have centralized managements, and to pursue economies of scale. When a company integrates its separate elements into a unitary business, then the formula apportionment method is often viewed as more practical than the separate accounting method.

The above conditions do not exist in the international economy, where tax barriers can impede enterprises from expanding across national borders. For example, most countries levy a withholding tax on cross-border payments to parties. Many countries tax cross-border mergers more harshly than mergers taking place within a single country. Economic conditions also vary considerably more among nations than among the states.

State tax practices are also remarkably similar when compared with cross-country differences in tax systems, tax rates, and tax bases. For example, some countries have a classical corporate income tax system, others integrate the corporate and individual income taxes, and others operate a split-rate system. Among the OECD countries, corporate income tax rates range from 10 percent to above 50 percent. In contrast, state corporate income taxes range from zero to 12 percent. The corporate income tax is a more important revenue source to countries than to the states. Compared with the roughly six percent of revenue in the states, the corporate income tax accounts for nearly 20 percent of federal revenue in Japan, above 13 percent in Luxembourg and the United Kingdom, and greater than 10 percent within the OECD as a whole. Since the corporate income tax looms so large in the revenue base, countries may not be willing to make compromises that jeopardize their revenue stream.

A. Unilateral or multilateral implementation?

Based on the inability of the states to reach agreement on all elements of the formula apportionment system, it might be impossible to gain sufficient agreement at the international level, where the underlying conditions are already so disparate. Since reaching agreement seems so difficult, some have argued that the only way to implement global formula apportionment is for one or more countries to take the lead and adopt the approach as a way to encourage other countries to follow.

As desirable as this suggestion may sound to its advocates, pursuing a multilateral

approach is essential for several reasons. First, a relatively harmonious tax system helps commerce run smoothly by reducing the tax barriers to doing business in several countries. Each country must work with its trading partners to reach a consensus on the key elements of the system. Without cooperation in establishing the starting position, countries may be unable to agree on ways to resolve the double taxation problems that would inevitably arise if countries adopted separate approaches. The United States and other nations recognized this principle more than half a century ago when they set out to adopt a common method to divide multinational income. Through continued cooperation, the nations have been able to enforce that common system, while allowing individual countries to pursue their own independent tax policies.

Second, no country can unilaterally enforce its chosen standard for dividing income among nations. Every country requires the cooperation of other nations to gather information regarding a multinational company's global income and factors. Without agreement on such definitions, it would be impossible to enforce the system. Unlike the U.S. states, which generally use federal income as their tax base, countries have no common tax base for measuring a multinational enterprise's global income. Given the much greater amount of international investment today than when countries first set out to adopt a common system, such international agreement on a common standard would be even more important today.

The major efforts to apply the arm's length standard in a uniform way illustrate the importance of consensus. Since 1956, many of these efforts have taken place within the Organization for Economic Cooperation and Development (OECD), where tax experts from the major industrialized work to craft an internationally-accepted set of guidelines governing how member countries tax international commerce. These efforts to cooperate internationally that began in the 1930's to apply the chosen standard show the benefits gained by reaching agreement. Although complete harmonization of all elements of the tax system would not be necessary, the same efforts that countries have expended in coordinating application of the arm's length method at the international level would be necessary to coordinate a global formulary system.

Third, countries may have to renegotiate or reinterpret their network of bilateral income tax treaties to incorporate the apportionment method. The treaties presently in place allow formulary methods in certain cases, but they do not allow use of a pre-determined formula. If countries agreed to adopt another treaty standard, they would work together to develop guidelines for uniform application of that standard.

Finally, a multilateral approach helps prevent countries from retaliating against foreign companies doing business within their borders. If one country unilaterally adopted a measure that appeared to violate international practices, other countries might impose punitive measures

against companies from that country that would harm the first country as a whole.³² Cooperation is more effective than confrontation and would better ensure a continued smooth economic environment for multinational enterprises. Without international agreement on the basic tax rules, the resulting conflicts could severely disrupt world trade and investment.

Because consensus is vital to the smooth operation of any multinational tax system, the remaining discussion assumes that countries would adopt formula apportionment multilaterally.³³ If this occurred, separate accounting would remain available in cases where formula apportionment were inappropriate, such as when a business was truly separate and distinct from another business.

B. The formula

When defining an apportionment formula, there is a tradeoff between accuracy and simplicity. In general, the more accurate the measure, the more complex the system. And, as complexity rises, compliance costs increase. The states settled on the three-factor formula, not because it would be the "right" formula in all cases, but because it was a simple formula that fairly reflected the factors that generated income for most manufacturing and mercantile companies. The three-factor formula has become an approved benchmark because it reflects a very large share of the value-generating activities while retaining a simplicity that is lacking in formulae that attempt to measure income more precisely.

When crafting a formula for international use, it may be appropriate to include factors that differ from those incorporated in the Massachusetts formula for manufacturing companies. For example, the OECD transfer pricing report refers to a formula that includes a combination of costs, assets, payroll, and sales. Moreover, these three factors may not be appropriate for all types of business. Taxpayers in other lines of business generally use different formulae. The apportionment system also must be flexible and allow taxpayers to use another method if the prescribed method produces unreasonable results.

1) The experience in the U.S. states

Some have criticized the formulary approach because the apportionment factors do not reflect all of the factors that generate income. However, simple calculations based on the distribution of business activity across the states show that, despite the attention devoted to

³² For an illustration of this possibility, the Parliament in the United Kingdom enacted legislation in the 1985 Finance Act that would have authorized retaliation against non-U.K.-resident corporations that had a presence in a unitary state. Due to changes in California's law, the state at issue, the legislation was never put into force. See Devgun (1996), p.370.

³³ Section G discusses some proposals to adopt formula apportionment on a limited basis.

devising the "right" formula, the exact definition of the formula is relatively unimportant because it does not have a great revenue impact in the states. The Willis Committee estimated how the tax base would change, assuming a fixed distribution of property, payroll and sales, if the states moved from a property-payroll formula to the property-payroll-sales formula, with sales measured on a destination basis. Although revenue generally fell in states with a large manufacturing sector compared with states with a small manufacturing sector, the revenue impact was small. For 37 of the 38 taxing states, less than 1 percent of total tax revenue was involved (Idaho was the exception, with a 1.1 percent difference).

The Willis Committee also compared the revenue impact in moving from the present formula to the two-factor and the three-factor formula. Under this simulation, no state would lose more than 1.6 percent of its total tax collections. All but two of the 38 taxing states would have no change in revenue, a loss of less than one-half-of-one percent, or a gain in revenue. Moreover, the Committee argued that as state economies continued to converge, any revenue significance across formulae would diminish.³⁴

Designers of a formula for federal purposes face a tension between the desire to craft a formula that reflects the factors that generate income but that also does not distort location incentives. For example, Hellerstein (1993) proposed that the federal government adopt an equally-weighted three-factor formula, which reflects the factors that generate income, as under current state practices. By contrast, Avi-Yonah (1993) recognized that including property and payroll in the formula could discourage companies from manufacturing in the United States and proposed a single-factor sales formula.

Although a sales-based formula provides beneficial location incentives, it also introduces administrative problems. Unlike property and payroll, whose location is generally fixed and easily identified, the location of a sale is often indeterminate. Tax gaps and overlaps can arise if states adopt different definitions of where a sale occurs. For example, suppose that one state defines the destination as the location where the seller delivers the goods to the purchaser and another state defines the destination as the location where the buyer ultimately receives the goods. Suppose a buyer picks up goods at a seller's warehouse in one state and takes them to another state for retail sale. If the first state assigns the sale to where it is ultimately received and the second state assigns it to the place of delivery, neither state will

For the revenue estimates, see Vol. 1, pp. 543-46, 555. None of the estimates took into account the behavioral response to the new formula. Taking into account such responses would affect the revenue estimates. The convergence in the share of civilian income earned in manufacturing in each state illustrates this increasing similarity. From 1929 to 1962, the states generally moved toward the national average. See Vol. 1, pp. 548-550.

claim the sale. If the situation is reversed, both states will claim the sale.³⁵

More important, any formula chosen will be unstable. Under formula apportionment, a state faces competing incentives. They can choose one formula to maximize revenues and another formula to minimize the distortions to the location of investment. Thus, for example, if a state's industrial base is capital-intensive, it will maximize its revenues (perhaps only temporarily) by adopting a single-factor property formula. However, since the tax burden rises directly with the amount of new capital hired in that state, a property-only formula would discourage new investment. Thus, the state may see its revenues ultimately fall. To prevent this outcome, the state may opt, instead, for a single-factor sales formula. In this case, when a company hires new capital in the state, its tax burden is unchanged for a given amount of sales. The state may view this formula as a way to shift investment from other states to its state. Since states may, at least temporarily, gain from deviating from the standard formula, the formula is unstable. This type of behavior can lead to a "destructive" tax competition among the states.

There is some doubt about the success of the strategy of modifying the formula to attract new business to the state. For example, Pomp (1987) showed that only corporations whose receipts factor is below the average of the property and payroll factors benefit from a double-weighted sales factor. Moreover, from simulations showing that the formula could increase the tax cost for out-of-state corporations to enter New York, Pomp concluded that the new formula would discourage these companies from moving to the state. Henderson (1987) projected similar results for Massachusetts. Despite these simulations that raise questions about its benefits, Weiner (1994, 1996) provides empirical evidence showing that states may gain additional investment, at least temporarily, from switching to a formula that increases the weight on the sales factor.

2) The experience in the Canadian provinces

A look northward to the Canadian provinces illustrates the benefits from adopting a common formula. Canada's federal and provincial governments have cooperated closely in direct tax measures. During World War II, the provinces agreed to cede temporarily the right to tax corporate income in exchange for compensating payments from the federal government. When peace came, the federal government proposed extending the agreements. Although the provinces rejected this idea, they did agree to search for a remedy to the problems created when the federal and provincial levels of government both taxed corporate income. The Tax Rental Agreements (TRA) arose from this search. Under the TRA, the provinces agreed to

³⁵ This example is drawn from the Willis Comm. Rept., Vol. 1, p. 184. The Willis report later noted that ". . . there is every reason to believe that undertaxation occurs more frequently than overtaxation." This is due to the market-oriented sales factor and the fact that states permit income to be attributed to states where the company has no place of business (p. 415).

"rent" their corporate income tax to the federal government in exchange for per capita-based compensation and equalization payments from the federal government. Shortly thereafter, the governments drafted a model provincial corporation income tax act. This act proposed a single-factor apportionment formula based on a company's gross receipts in the province, which was incorporated in the first TRA.

In 1946, the tax authorities added a payroll factor to the formula. This change had two key purposes. First, the tax authorities argued that the two-factor formula avoided attributing an excessive share of profits to the head office at the expense of the production facilities. Second, the new formula attributed some income to the province where the business activity occurred. The Canadians considered, but rejected, adopting the three-factor Massachusetts formula. They expressed "no desire to get into the complications and controversies of a three-factor formula involving capital assets in the province."³⁶ The payroll and sales formula balanced the interests of the marketing and manufacturing provinces.

For the past half century, all of the provinces have generally applied the same two-factor formula. Several factors explain why the Canadians have been able to sustain this agreement. First, the provinces benefit from adopting the federal formula. In exchange for agreeing to adopt the federal rules, the federal government agrees to collect all corporate tax revenues and incur all expenses. Second, because the provinces use the same formula and tax base, there is substantial pressure on the provinces to remain in conformity. These pressures are similar to those at the international level to remain on the arm's length system or to move multilaterally to a new system.

Given the disagreements among the states in the definition of the tax base and the apportionment formula, there is little to be gained by suggesting that the world mimic the states' approach for taxing multijurisdictional companies. The nature of federalism within the United States, and the states' insistence on protecting their taxing rights, explains much of the independence in state tax policies. However, the experience in the Canadian provinces emphasizes the benefits to be gained from following the Canadian model when considering implementing global formula apportionment. As suggested by Boadway (1989) and Weiner (1994), the Canadian model provides a useful example of a formula apportionment system.

C. Defining the factors

This section discusses the definitions for the property, payroll, and sales factors used by manufacturing and mercantile industries. Although other industries may use the same three general factors, the definition of the factors often varies with the industry. The airline industry, for example, generally includes a measure of transportation revenue in the sales

³⁶ Smith (1976). For additional details on the history of formula apportionment in Canada, see Weiner (1994), chapter 5.

factor, while income from companies in the transportation industry is typically apportioned by a method that considers mileage, number of passengers carried, or tons of freight. Building construction, motion pictures, commercial fishing, professional sports, and regulated investment companies also typically use formulae that differ from the standard property, payroll, and sales formula.

States generally measure the property factor at historical cost. The main argument for valuing property at historical cost centers on the ease of obtaining this figure. Unlike market value, a company can find the historical cost from its balance sheets. Moreover, historical cost avoids the conflicts that might arise when different jurisdictions use different depreciation methods. As previously explained, Canada excluded the property factor to avoid the conflicts that had developed in the U.S. states.

Since most states define payroll according to the federal rules for unemployment insurance, few problems arise in defining the payroll factor. The payroll factor would also probably be the least controversial at the international level. Many international organizations follow standard rules for defining payroll for purposes of making cross-country comparisons of wages and unemployment rates. For apportionment purposes, however, additional problems may arise if countries define compensation differently. For example, some countries may include fringe benefits in wages and salaries.

The problems in valuing property and payroll seem minor compared with the problems that arise in defining the sales factor. How should states decide which gross receipts to include in the sales factor? Most states define the sales factor as gross receipts, which includes sales of tangible property, less returns and allowances, and other gross receipts such as rents and royalties, capital gains, dividends, and interest. Any intercompany amounts are subtracted to find the value of total receipts.

Part of the difficulty in measuring the sales factor arises from the difficulty in determining whether an item of intangible income should be considered business or non-business income. Dividends, for example, may be considered part of business income, and included in the sales factor. Or, they may be considered part of nonbusiness income, and excluded from the sales factor. For example, if a state allocates dividends to a particular state, the state would exclude the dividends from the sales factor. If the state apportions the dividends, then the state would include the dividends in the sales factor. If states do not agree that the company obtained the dividend as part of the ordinary trade or business, then significant multiple taxation could occur since some states would apportion the dividend and others would allocate it to a particular state.

A second difficulty arises in finding the location of intangible income and, therefore, in deciding in which state's numerator to place the receipt. The state apportionment system is particularly weak in this area. Some states include the income in the state's receipts factor if the state includes the amount in its apportionable income. Other states exclude the receipt

entirely. To illustrate a related problem, consider how states apportion income from the performance of services. Many states assign a salesperson's services income according to the amount of time spent in the state. However, some states assign the entire amount of services income to the state where the salesperson's office is located. Since states disagree on the approach, this procedure presumably means that multiple taxation may arise. The states have yet to come up with a solution to this problem.

Despite the pessimistic tone of the above analysis, exactly how countries define the factors may be less important than that all countries adopt the same definition of each factor. For example, countries might decide that the payroll factor should include payments to independent contractors. If they made this decision, then all countries should include those payments in the definition of the payroll factor. Relief can be provided when necessary.

D. The tax base

Many international corporate tax reform proposals call for standardizing tax bases and accounting methods across countries. Hufbauer and Van Rooij (1994), for example, proposed that the OECD countries harmonize their definitions of taxable income and underlying accounting standards. The member states of the European Community failed to implement a European Commission proposal (1975) to harmonize the company tax because it called for harmonized tax rates but not harmonized tax bases. Agreeing on a common definition and standards is not easy. A draft Commission report (1988) remedied the omission in the 1975 report by defining a standard tax base, but the Commission withdrew the report when disputes arose over the proposed definitions.

1) Accounting standards

Harmonizing accounting standards is also important in encouraging cross-border business expansion. For example, Choi and Levich (1991) showed that accounting diversity was an important factor in the capital market decisions of many companies. The task of harmonizing accounting standards has become increasingly urgent as capital markets expand around the globe. The boards of the International Accounting Standards Committee and the International Organization of Securities Commissions have agreed to develop common accounting standards by March 1998.

These standard makers recognize the hurdles they face in proposing an international standard. In a report issued on November 26, 1996, the FASB warned that differences between general approaches underlying U.S. accounting rules and rules issued by the IASC may pose the greatest challenge to efforts to harmonize global accounting.³⁷ The report found 255 variations between U.S. GAAP and standards set by the IASC. The report questioned

³⁷ See Daily Tax Report (1996).

whether it would be appropriate to accept IASC standards for foreign issuers in the United States. For example, would the FASB have to compromise on certain key rules relating to deferred taxes, business combinations, and foreign currency.³⁸

Although the proposal has now been dropped, the European commissioner for taxes had warned that any member state adopting U.S. GAAP principles would violate EU law. It is difficult to propose that other countries simply adopt U.S. principles. Many countries object to certain requirements of U.S. rules, such as the requirement for detailed segment reporting. In addition, the Financial Accounting Standards Board is exploring areas in which Canada, Mexico, Chile and the United States can harmonize their accounting standards.³⁹

2) Business and nonbusiness income

Income arising in the ordinary course of trade or business defines the starting point for the tax base under formula apportionment. Standard rules adopted by the states apportion business income by formula and allocate nonbusiness income by source. Business income is defined as any income that arises from any transactions or activity that form part of the regular trade or business. Thus, it is critical to identify the transactions that form part of the business. Once these transactions are identified, then income of any class or type becomes business income and is apportioned by formula. Income that arises from transactions that are not part of the business is not apportionable and is, instead, allocated to a specific state.

At the international level, the distinction between business profits and nonbusiness income parallels the distinction between business and nonbusiness income. Treaties provide different rules for these types of income. For example, under the Business Profits article of most treaties, a country may tax only the business profits that are attributable to a permanent establishment in that country. Such profits are taxed on a net basis. The taxing rights for items that arise out of the ordinary course of trade or business are generally assigned to the source country and are taxed on a gross basis.

If the source is difficult to identify, the treaty may assign income to the company's residence country, which in the United States is the place of legal incorporation. Other countries define the company's residence as the place of effective management. If income were to be assigned on the basis of the company's residence at the international level under an apportionment system, the United States would have to reach a compromise with the other countries over the definition of a company's residence state.

³⁸ *The Wall Street Journal*, August 29, 1995, p. A15.

³⁹ *Institutional Investor*, October 1996, pp. 37-38.

3) Intangible income

Defining the treatment of intangible income is difficult. For example, most states use the formula approach for sales of other than tangible personal property and, for purposes of measuring the sales factor, assign receipts to the location where the income-producing activity takes place. Complications may arise, however, when the activity takes place in several locations. Under such circumstances, the states generally follow one of two options. If they follow UDITPA (Section 17) they would assign the entire receipt to the state where the greatest proportion (although not necessarily a majority) of the activity is performed, based on costs of performance. Alternatively, they may include intangible income in the numerator of the sales factor, based on the extent of the intangible's use in that state.

Controversy has arisen over how some states treat intangible income. South Carolina, for example, levies its corporate income tax upon a corporation with no physical presence in the state if the out-of-state corporation derives income from the use of its intangible property in the state. A South Carolina court found that the out-of-state corporation had created a taxable nexus with the state through its trademark licensing agreement with a South Carolina business.⁴⁰

Again, tax treaties may provide guidance for taxing intangible income. For example, treaties outline the rules for taxing income from real property, dividends, interest, royalties, capital gains, and personal services. Treaties also often define the source of a particular item of income. For example, interest, in general, is deemed to arise in the payer's residence state. However, if the interest is "borne by" a permanent establishment, then the interest is deemed to arise in the place where the permanent establishment is located. For some types of income, treaties assign an exclusive right of taxation. For example, capital gains from the alienation of property other than immovable or personal property are generally taxable only in the state where the person alienating the property resides. Likewise, only the state where the beneficial owner of royalties resides may tax royalties.

4) Compliance costs

The assumption that formula apportionment increases compliance costs is usually that one or more countries will move to formula apportionment, but that they will not agree on how to measure the tax base or on which factors to include in the formula. Compliance costs will depend on the degree of uniformity achieved, and the precise rules adopted are likely to be a blend of the various rules in different countries.

Both separate accounting and formula apportionment contain an inherent "margin of

⁴⁰ *Geoffrey, Inc. v. South Carolina Tax Commission*, 437 S.E. 2d 113 (S.C. 1993), cert. denied, 114 S. Ct. 550 (1993).

error" in measuring income earned in each location. These errors, however, are reduced when countries agree on how to implement the system. Recognizing that exact compliance with the rules could make compliance costs prohibitive, the states accept reasonable approximations of taxpayer accounts.⁴¹ Such accommodation would also be necessary at the international level. Thus, it is impossible to estimate how compliance costs might change for multinational enterprises if countries adopted formula apportionment.

E. Defining the unitary business

Although not all states extend the formula method to a unitary business, since multinationals conduct a substantial amount of foreign business through subsidiaries, the apportionment method may best be applied on a unitary basis at the international level.⁴² If countries applied the formula to parents and branches but not to parents and subsidiaries, parent companies would be able to adjust the legal structure of their organization to take advantage of the most tax-favored form. Companies could pursue this strategy even though the company's economic substance would not change.

To apply the tax on a unitary basis, it is necessary to draw a circle around the total income to be apportioned: this is often technically referred to as the unitary business. When formula apportionment is applied on a unitary basis, the states generally treat the transactions and activities of affiliates that contribute to or depend on the operations of the business as a whole as part of the unitary business. In fact, some have implied that any unitary definition is problematic. For example, Coffill and Prentiss (1993) argue that a narrow definition of a unitary business creates an "intractable" problem, while a broad definition of a unitary business creates an "immense distortion." McLure (1983) has noted that it may be impossible to define a unitary business that is totally satisfactory from an economic point of view. This section reviews some proposed definitions of a unitary business.

1) Majority ownership

⁴¹ For a discussion of these points, see the Supreme Court's 1994 decision in *Barclays Bank v. California Franchise Tax Board* (which discusses the use of reasonable approximations) and the OECD's 1995 transfer pricing report (which discusses the use of a range of arm's length prices).

⁴² In a comment on McDaniel's article on using formula apportionment within the NAFTA countries, Pomp (1994) disagrees that formula apportionment would have to apply on a unitary basis. He notes that under federal law, the United States taxes U.S. corporations on their worldwide income without any reference to the unitary business. Thus, no constitutional problem should arise if that same amount of income enters into the preapportionment tax base in a formula apportionment system. The constitutional requirement of nexus under the Due Process clause would still be relevant for foreign-incorporated companies.

The simplest definition of a unitary business looks solely to ownership. Under this definition, ownership of a majority of the voting stock, directly or indirectly, creates a unitary business. Corrigan (1980) provided a simple test for a unitary business. A business would be unitary if it was owned more than 50 percent by another. Under this approach, the parent company's unitary business would include any entity that it controlled. This rule is similar to U.S. federal consolidation rules, which require consolidation if the company is 80 percent owned by another. The federal rules, however, do not extend to foreign subsidiaries.

This rule has the advantage of administrative simplicity. However, it has the disadvantage of creating leeway for a company to arrange its business structure so that it can fall on the most beneficial side of the definition. As the Supreme Court noted when it rejected this bright-line definition in *Allied-Signal* (1992), such a test would cause companies to fracture their identities in a corporate shell game to avoid taxation. Furthermore, if a conglomerate must combine all of its majority-owned businesses and apportion income using the three-factor formula, distortions may arise if one line of business should use a different formula than another. For example, a trucking company would include mobile property in the property factor. But, if a manufacturing parent owned the trucking company and used the manufacturing formula's definition of property and excluded mobile property, the parent's property factor might not properly reflect the contribution made by the mobile property of the trucking company.

The method may also be easy to circumvent. A company could own 49 percent of another, yet retain effective control of the entity, and, nevertheless, avoid its unitary tax liability.

2) Control

The ability to control the business decisions of an affiliate is a key element in defining a unitary business. The federal government's attempt to define "control" for purposes of consolidating financial accounts provides guidance in defining control for purposes of identifying the parts of the unitary business. The language defining an entity that should be consolidated with another for federal tax purposes reflects concerns that have arisen in attempts to define entities that should be combined for state tax purposes.

In a 1994 report, the Financial Accounting Standards Board (FASB) outlined its consolidation policy, proposing that a controlling entity will consolidate all entities that it controls unless control is temporary at the time that the entity becomes a subsidiary.⁴³ Control of an entity is defined as power over its assets to achieve the objectives of the controlling entity. Control is broader than mere ownership. Control not only enables the parent to direct the controlled entity's capital and operating budgets, but also allows the parent to obtain future

⁴³ Unlike the tax code, FASB calls for consolidation of foreign subsidiaries.

economic benefits. These benefits include structuring transactions with its subsidiary to obtain raw materials on a priority basis or at reduced costs of delivery, gaining access to the subsidiary's patents or proprietary production techniques, or creating economies of scale in management costs, insurance costs, employee benefit costs, among others. The report notes that those benefits are often difficult, and may be impossible, to quantify, but they are, nevertheless, real and valuable to the parent. This analysis of control is similar to the analysis of how to define a unitary business.

Control includes legal control, which requires majority ownership of voting rights, and effective control, which can result from ownership of a large minority interest. In both cases, the result of being in control is the same. Effective control can exist under certain identifiable circumstances. For example, it is likely to exist if a party owns a large minority voting interest in the absence of another party with a significant interest. In this case, the owner of a large minority interest may expect to cast a majority of the votes simply because not all shareholders exercise their right to vote.

3) The three unities test

Some of the seminal unitary tax cases reflect the above notions of control. The California Supreme Court's 1941 *Butler Bros.* decision provided the following definition, which became known as the "three unities" test, of a unitary business:

"[I]t is our opinion that the unitary nature of the appellant's business is definitely established by the presence of the following circumstances: (1) unity of ownership, (2) unity of operation as evidenced by central purchasing, advertising, accounting and management divisions, and (3) unity of use in its centralized executive force and general system of operation."

Unity of ownership exists if a single taxpayer owns, directly or indirectly, a majority of the voting stock of two or more corporations. Unity of operation arises from common purchases, centralized advertising and record keeping, common legal representation, and intercompany financing, etc. Unity of use is found by not only by a flow of goods, but also by shared management and information, common knowledge and expertise, etc.

4) Dependency or contribution

Altman and Keesling (1946) explained how to decide when a portion of business within the state may be considered separate and when it may be considered part of a single business. They explained that "[T]he essential test is whether or not the operation of the portion of the business within the state is dependent upon or contributory to the operation of the business outside the state." If the relationship exists, then the business is unitary. The California Supreme Court used this definition in *Edison Stores* (1947), and the California Franchise Tax Board later adopted the definition.

5) Interdependent basic operations

Hellerstein (1969) suggested that a unitary business be limited to interdependent basic operating functions and the test of a unitary business should be "bottomed on the interdependence of the basic operating activities of the enterprise." This test embraces the usual purchasing or manufacturing of goods in one state and selling them in another. But, it excludes centralized management, financing, advertising, the use of patents, trademarks and know-how, and other ancillary or supportive activities as indicia of a unitary business.

Hellerstein (1982) later clarified that "a business is not unitary unless interdependent basic operations are carried on to a substantial extent in different states by the branches or subsidiaries that comprise the controlled enterprise." For administrative ease in implementing this rule, he proposed a substantiality requirement of a one-fourth to one-third minimum share of the flow of goods or services between controlled corporations. A benefit of this test is that it provides a quantitative test that can be measured by receipts from sales or operational purposes, or by the cost of goods purchased or operational services the company receives. In addition, the test does not grant either the tax administrator or the taxpayer leeway in determining if the business is unitary. Hellerstein is particularly critical of the broad, vague tests of "contribution or dependency" followed by many states. He believes that these notions have led not only to "burdensome, time consuming and expensive compliance and administration, but also to severe distortion and misattribution of income."

6) Three-stage test

McLure's (1984) unitary test adopts a practical approach. It centers on determining whether a company can use separate accounting to identify the profits of the individual companies under common control. He proposes a three-stage test for a unitary business:

- (1) Is there common control via ownership and management? If not, there can be no unitary business.
- (2) If there is common ownership and management, are there shared expenses, economies of scale or scope, intragroup transactions, vertical integration, or other economic interdependencies? If no, the business is not unitary.
- (3) If any of the elements in (2) exist, are they so substantial that they would fail to produce a satisfactory division of profits between members of the group?

McLure summarizes: "a unitary business is the smallest division of a firm or group of firms, the income of which can generally be accurately indicated by separate accounting." Like Hellerstein, McLure subjects his definition to a substantiality test.

In the 1980's, Hellerstein and McLure held a lengthy, but ultimately unresolved, debate over the definition of the unitary business. Hellerstein argued that nonoperating functions should not form the basis for holding an enterprise unitary. Such a broad sweep of

the formula apportionment method would tend to push distortion and misallocation to unacceptable levels. McLure criticized Hellerstein's notion that states should adopt a "bright line" test of a substantial flow of transactions for defining a unitary business. Under most circumstances, a flow of transactions should be sufficient to find unitariness, but it should not be necessary. In addition, McLure claimed that "from an economic point of view, common (majority) ownership is neither necessary nor sufficient for the existence of a unitary business." In particular, a company need not have a majority ownership to manipulate income among its affiliates. Instead, it must have common control. This notion of control parallels the federal transfer pricing regulations where the interpretation of control does not depend on its form or the mode of its exercise.

7) Flow of value

The Supreme Court has basically followed McLure's approach. For example, it has ruled that "the application of the unitary business principle requires in each case a careful examination both of the way in which the corporate enterprise is structured and operates, and of the relationship with the taxing State." Deciding whether certain businesses are unitary remains a fact-specific endeavor, and the Court has consistently refused to establish a bright-line definition of a unitary business.

In *Container*, the Court specifically noted that Hellerstein and McLure disagreed on whether a "flow of goods" was necessary for a business to be unitary. Container Corporation had asked the Court to establish a "flow of goods" as a bright-line unitary test. The Court rejected Container's argument, explaining that a business can be unitary without a flow of goods if there is a "flow of value" among the entities under common control.

8) Activity test

Federal regulations can provide guidance on how to define a unitary business. For example, regulations under the Internal Revenue Code defining an "activity" for passive loss purposes contain provisions that parallel state definitions of a unitary business.⁴⁴ A taxpayer must evaluate the facts and circumstances to decide whether activities create an economic unit that may be treated as a single activity. These activities include, among others, common control, common ownership, and interdependencies among the activities. As occurred in unitary cases decided by the judicial branch, the IRS rejected a proposal to adopt a bright-line test, even though such a test would avoid complex and mechanical rules.

To summarize, the operative notion of a unitary business is the presence of an exchange

⁴⁴ The regulation sets forth the rules for grouping a taxpayer's trade or business activities and rental activities for purposes of applying the passive activity loss and credit limitation rules of section 469.

or transfer of value, as evidenced by functional integration, centralization of management, and economies of scale. Since any bright line definition would be subject to abuse, it may be impossible to come up with a simple definition of a unitary business. Therefore, because of the subjective nature of this test, close cooperation between tax authorities would be essential to avoid disputes.

F. Verification of total income and the value of the apportionment factors

Since it relies on information obtained from all parts of the unitary business, regardless of where those parts are located, the formula apportionment method cannot successfully prevent tax evasion unless tax authorities in all jurisdictions can verify the total amount of income reported and the value of factors located in each country. Doing this requires significant cooperation among tax authorities. Some of the cooperative approaches developed by the states and international governments are discussed below.

1) Tax avoidance

Whether the company is taxed under separate accounting or under formula apportionment, when tax rates and bases differ across taxing jurisdictions, companies have an incentive to take actions to minimize their tax burden. Moreover, companies do not have to relocate their physical operations to reduce their tax burden. They may achieve this result through changing their financial figures. These incentives exist under both tax systems. Under separate accounting, they may shift the location of their income by altering the prices they charge within the multinational group. Under formula apportionment taxation, they may shift the location of their income by altering the valuation of the apportionment factors.

These different actions arise because each system starts from a different premise. The separate accounts system, for example, taxes the company on the income earned by its individual operations. The company, thus, faces an incentive to locate its income in low-tax jurisdictions. Under separate accounting, it may manipulate transfer prices to assign its revenues to a low-tax location and its expenses to a high-tax location. By so doing, it shifts income to the low-tax location and reduces its total income tax liability.

Because the formula apportionment system taxes a company on its total combined income, a company cannot shift its income from one location or subsidiary to another. However, since it measures its taxable income in a location by the value of the factors in the formula, a company has an incentive to shift its factors from high-tax countries to low-tax countries. It can achieve this result by moving its physical operations, as under separate accounting. Moreover, as under separate accounting, it need not actually move its operations to reduce its tax liability. Under apportionment, it can reassign the location of its sales or alter the values of its property and payroll factors, for example, by hiring independent contractors in a low-tax area, to shift its factors. Thus, neither separate accounting nor formula apportionment taxation eliminates the incentive and ability for a company to engage in tax

reduction strategies.

The only way to eliminate all tax avoidance incentives is for the whole world to adopt the same tax system. Without this extreme harmonization, tax avoidance would remain a problem. For example, under formula apportionment, although companies may no longer face an incentive to shift income, they would face an incentive to shift their factors, which effectively shifts their income.

2) Tax administration and cooperation in the states

The Multistate Tax Commission has implemented several programs to improve compliance with multistate corporate income tax requirements. These programs allow the states to conduct joint audits of a multistate company's income tax returns, to identify nonfiling multistate companies, and to verify the methods of combined reporting used by large multistate taxpayers.

The Joint Audit Program conducts simultaneous audits of businesses for several states for both sales and use and corporate income taxes. A goal of this program is to insure proper compliance by multistate businesses with state income and sales taxes, to achieve uniform application of comparable state laws to the business community, to minimize audit interruptions for businesses, and to improve state knowledge of emerging audit issues.

The goal of the National Nexus Program, which began in December 1990, is to help states increase compliance with their tax laws. The program contains a clearinghouse database of information on the potential nexus activities of multistate companies.

The Unitary Exchange Project encourages better compliance with state tax laws. It enables participating states to discover discrepancies in the method of combined reporting used by large multijurisdictional taxpayers in filing corporate income tax returns. States exchange the information through a clearinghouse database.

The MTC has a new Alternative Dispute Resolution program. This program allows states and taxpayers to reach multilateral, multistate solutions. The dispute resolution program will provide a confidential, neutral, direct avenue for mediation and arbitration in multistate tax cases and will reduce the costs and risks of litigation for both sides.

The Federation of Tax Administrators has developed a Uniform Exchange of Information Agreement. This agreement enables states to exchange tax information with other signatories and should facilitate tax administration and improve tax compliance. States use any information obtained solely for tax administration purposes.

Many states require that multistate companies file "Domestic Disclosure Spreadsheets" showing their operations in other states. These spreadsheets help the tax authorities verify that

the factor shares sum to one and that companies are applying the same valuation principles for factors located in different states.

3) Tax cooperation at the international level

Other countries provide examples for resolving disputes over income allocation. For example, the member states of the European Union have set up a mechanism to resolve double taxation arising from transfer-pricing disputes through their Arbitration Convention. Under this Convention, national revenue authorities may submit transfer pricing disputes to an international arbitration panel. The panel is to reach a decision within a specific time period, and the parties must then abide by the panel's decision.⁴⁵

Tax administrators have several methods for cooperating. The mutual agreement procedure in bilateral income tax treaties and tax information exchange agreements both provide other avenues through which tax authorities may cooperate in administering treaties and resolving disputes.⁴⁶ In the United States, the Internal Revenue Service conducts simultaneous examinations through which it cooperates with tax authorities of other countries for purposes of verifying a taxpayer's claims. The Federal government has also explored ways to help the states administer their corporate taxes. For example, section 6103 of the Code provides a mechanism for the federal and state governments to exchange information.

4) Relief mechanisms

The tax system would need a relief mechanism that allowed for deviations from statutory definitions when the facts and circumstances indicate a need to do so. The states presently provide taxpayer relief if the apportionment provisions are inappropriate for a particular taxpayer through the "equitable adjustment provision" of UDITPA (Section 18), which allows taxpayers to use another method if the allocation provisions and the three-factor formula do not fairly represent the activities in the state. States have authorized the taxpayer or the tax commissioner to use different allocation or apportionment methods if the one prescribed by statute fails to reflect accurately the business conducted within the state.

Under UDITPA Section 18, if the allocation and apportionment provisions do not fairly represent the extent of the taxpayer's business activity in this state, the taxpayer may petition

⁴⁵ The EC arbitration convention came into effect on January 1, 1995, for an initial period of five years. The convention is currently binding on the twelve member states of the former European Community, although the three new member states of the European Union, Austria, Finland, and Sweden, have agreed to accede to the convention.

⁴⁶ See, for example, Article 25, Mutual Agreement Procedure, of the *U.S. Model Income Tax Convention* of September 20, 1996.

for, or the tax administrator may require, in respect to all or any part of the taxpayer's business activity, if reasonable:

- (a) separate accounting;
- (b) the exclusion of any one or more of the factors;
- (c) the inclusion of one or more additional factors, which will fairly represent the taxpayer's business activity in this state; or
- (d) the employment of any other method to effectuate an equitable allocation and apportionment of the taxpayer's income.

Most states have adopted similar relief provisions, which they use fairly often. State tax administrators may deviate from the prescribed formula when apportioning income for companies that are not in the manufacturing or mercantile industries. For example, in 1994, the Multistate Tax Commission proposed a uniform formula for apportioning income of financial institutions. This formula addresses the need to source items of financial income, such as loans, receipts from credit cards, and loan servicing fees in a manner that differs from the manufacturing and mercantile rules.

The tax system would have to contain a review mechanism. Its exact nature and the mission of the entity enforcing the mechanism would depend on the degree of cooperation among nations. For example, countries might agree on a general definition of the tax base, but allow individual countries to deviate in certain areas to achieve their own purposes. The Canadian provinces follow such an approach. They adopt the federal tax base, but can apply their own tax rates and tax credits. This arrangement gives the provinces sufficient flexibility to provide tax incentives while maintaining the general uniformity necessary for the apportionment system to operate smoothly.

G. Selective implementation of a formulary approach

This next section discusses various proposals to adopt formula apportionment within certain common markets or for certain industries. These areas include NAFTA, global trading, and the European Community.

1) Member countries of NAFTA

McDaniel (1994) evaluated some legal issues that would be involved if the three member countries of the North American Free Trade Agreement adopted a treaty-based formulary method of apportioning the taxable income of companies doing business in the three countries.⁴⁷ By limiting his analysis to these countries, he avoids some of the problems

⁴⁷ In addition to McDaniel, McIntyre and McIntyre (1993) examined the system among the NAFTA countries.

surrounding adoption of formula apportionment on a global level. He develops a legal framework for a treaty-based system that the NAFTA countries could implement. He finds that the system could resolve many of the potential tax-induced distortions to free trade.

McDaniel's basic premise is that NAFTA will encourage multinational companies doing business in these three countries to integrate their operations more closely. At some point, identifying "U.S. income," "Canadian income," or "Mexican income" may be as irrelevant as, for example, identifying "California income" and "Nebraska income" became for corporations doing business in several states within the United States. For this reason, among others, he argues that a treaty-based formulary taxation of unitary business within NAFTA can reduce the tax costs associated with cross-border trade and investment in that area.

2) Global trading and advance pricing agreements

Many U.S. taxpayers have entered into voluntary advance pricing agreements (APAs) with the U.S. government and the relevant governments of other treaty countries. Under these agreements, the IRS, the tax authority in the other country, and the taxpayer agree on a transfer pricing methodology to be applied for transactions between related parties. In some cases, the IRS has adopted a formulary approach in dealing with requests for APAs by functionally fully-integrated financial services firms involved in "global trading" of derivatives and commodities. These operations are characterized by the transfer of the authority to trade in a "book" of positions from trading location to trading location. Each of the APAs concluded with taxpayers operating in these businesses has used a profit split method to allocate the income of related operations between taxing jurisdictions.⁴⁸

In this approach, the IRS developed a specific formula that used the factors considered most relevant for determining the source of the trading firms' worldwide profits. For these firms, the IRS considered the trading business to be functionally integrated, as characterized by the centralized management of risk and personnel, so that the entire operation was managed as if it were a single business. In each of these global trading APAs, the IRS, the taxpayer, and a treaty partner agreed that the worldwide income for each global book to be covered by the APA should be allocated among the taxpayer's trading locations using a profit split method.

The method was designed to measure the economic activity in each trading location and its contribution to the overall profitability of the worldwide business. The formula contained three factors, a value factor, a risk factor, and an activity factor. The definitions of the factors and the weights on each factor were specific to each taxpayer.

The value factor reflects the relative value of a particular location in contributing to the

⁴⁸ As described in Internal Revenue Service Notice 94-40, 1994-1 C.B. 351.

worldwide profits of the business. For the APAs, traders were the most important resource in generating profit or loss. Thus, the value factor is measured by trader compensation, including bonuses. Whether both current and deferred compensation should be included are dealt with during negotiations. This factor was considered by both taxpayer and the IRS as the best measure of the value of a trading location and was thus weighted more heavily than other factors.

The risk factor measures the risk associated with a trading location. It is measured in several ways, such as the maturity weighted volume of swap transactions or open commodity positions at the end of the year entered into in that trading location.

The activity factor measures the extent of activity of each trading location. It is measured by the compensation of key support people at a trading location or the net present value of transactions executed at a trading location.

Applying the method requires three steps. The taxpayer first determines the trading profits or losses to which the method will apply. This typically includes the worldwide profits and losses from trading the class of commodities or derivative financial products and related hedges that the taxpayer and the IRS have agreed to include within the APA, less certain expenses directly related to the production of trading income. Other indirect expenses are allocated to the trading location that incurred them. The second step requires calculating the ratio for each factor in the formula, with the numerator measured by the values for the factors in the U.S.. The third step involves multiplying worldwide income by the formula, which determines the amount of worldwide net income or loss attributable to the United States.

In describing the details of the agreements of the previously negotiated APAs, the IRS cautioned that it is not prescribing a method or factors that will necessarily apply in all APAs. It is also not limiting the use of other methods or factors if they more appropriately measure the contributions of each trading location to the profitability of the business than do the described methods or factors.

Plambeck (1990) explains how global trading might exhibit the conditions necessary for a formula apportionment tax system: "firms operating in one profit center mode do not divide the economic functions of a global book along national boundaries, hence any tax rules that do so would produce artificial results." However, Samuels and Brown (1990) suggest that due to an inability to reach a consensus on its elements, the formula apportionment method is no better than a system premised on an arm's length approach.

3) The European Union

As with the member countries of NAFTA, the Member States of the European Union may provide another "testing ground" for implementing formula apportionment. A number of authors have considered this proposal, including McLure (1989), Weiner (1991), and Munnell

(1992). Munnell, for example, suggested that in the face of the increasing importance of multinational firms operating within the EC that if agreement can be reached on certain elements, it may be worth considering formula apportionment of the income of firms operating within the Community.

The only analysis conducted at the governmental level has occurred within the European Community (EC) . In 1992, the EC Commission established a committee to study the corporate tax policies in the Member States to determine what actions should be taken to coordinate company tax policy.⁴⁹

The Ruding Committee acknowledged that it would become increasingly difficult to determine the taxable profits separately for each part of a multinational enterprise as the cross-border integration of business activities within the Community increased. This increased cross-border activity would put pressure on the arm's length pricing system, as companies could manipulate their transfer prices to take advantage of cross-country differences in corporate tax systems.

The Ruding Committee noted that a common company tax system would allow the Community to reap the full benefits of the Single European Market. As part of its analysis, the Committee examined whether it should recommend introduction of formula apportionment for companies operating within the Community. The scope of the tax would be limited to the "water's edge," meaning that the arm's length principle would continue to apply for transactions with non-EC countries. It rejected introduction of global formula apportionment, that is, the use of a predetermined formula to apportion income, as a common system in the foreseeable future. The Committee gave several reasons for its conclusions, including that the system may allocate profits to a country where they were not earned and that the use of formula apportionment taxation within the Community and arm's length accounting in third countries may make it more difficult to resolve double tax disputes.

The only case where the Ruding Committee could accept formula apportionment would be in the relatively rare cases when no arm's length price is available or could not be found using the traditional methods. Two examples cited were unique intangibles and global trading arrangements. If economic integration, particularly group treatment for enterprises located in different Member States, had reached a level where formula apportionment was seen as a practical way to tax multinational companies, then the Committee suggested that perhaps it could be introduced on an optional basis.

The Member States of the European Union have taken cooperative measures to reform their direct and indirect tax policies. On the indirect tax front, the then six Member States of

⁴⁹ See Commission of the European Communities (1992). The Commission's conclusions following that report are contained in its communication of June 26, 1992 (SEC(92)1118).

the European Economic Community agreed in the late 1960's to replace their various turnover taxes with a common value-added tax. All new members of the EU must adopt the VAT as a condition of joining the Union.⁵⁰ If the EU were to adopt a common tax system, it could make its adoption a prerequisite for membership.

The EU has made some progress toward harmonizing company taxes. The member states adopted three wide-ranging corporate tax measures in recent years. These measures eliminate the tax on dividend payments made between parents and subsidiaries located in different member states, provide a common system of taxation applicable to mergers, and provide for an arbitration procedure to eliminate double taxation that occurs when the profits of an enterprise are adjusted upward in one state without a corresponding reduction in the other states. Thus, in certain limited cases, countries have shown an ability to coordinate features of their company tax systems.

More recently, in May, 1996, the European Commission, under the direction of Mario Monti, the Commissioner for Taxes, again turned its attention toward tax issues in the European Union, proposing a new and comprehensive view of taxation policy.⁵¹ This report led to a follow-up analysis in October 1996 focussing specifically on tax systems.⁵² The result of the four meetings of the High Level Group was to attempt to achieve better cooperation at the Community level, while also respecting the principles of subsidiarity and proportionality. The report concluded that there is a pressing need to make progress in tax policy areas to ensure that these policies are better geared toward achieving the important Union objectives.

IV. Conclusion

This paper evaluated issues involved in moving to formula apportionment. It first described the development of formula apportionment in the U.S. states and explained how the formula apportionment method works. It also identified some of the difficult issues the states have faced, and resolved, in implementing the formula apportionment system. The upshot of this analysis is that formula apportionment is not a simple solution to the problems associated with taxing a multinational enterprise's income. Although it would relieve some of the pressures existing under the current system, a global formula apportionment method would

⁵⁰ Thömmes (1994) suggests that the VAT may have succeeded because the member states turned contradicting interests into common interests when they decided to finance the EC budget by contributions from the member states' VAT revenues.

⁵¹ Commission of the European Communities (1996a). Onno Ruding participated in this group.

⁵² Commission of the European Communities (1996b).

introduce a host of new problems in taxing a multinational company's income.

Despite these acknowledged problems with the operation of the formula apportionment system, the paper has found that many drawbacks of the formula apportionment method diminish under certain conditions. If these conditions existed at the international level, then countries might view the formula apportionment tax in a more favorable light than they do now. Some of these important conditions are a common accounting standard and similar economic environments. These conditions are not necessary preconditions to adopting formula apportionment, but they simplify implementation of the system.

A common accounting standard would help greatly reduce compliance costs since countries could then more readily adopt a common definition of income and the factors. If the world moves to apportionment before a common accounting standard existed, then any multinational enterprise would have to compute its worldwide accounts under several different standards.

Similar economic conditions would smooth the transition to formula apportionment. The approximation of the income earned in a country under formula apportionment best reflects income when it is valid to assume that a company earns the same rate of return on its operations located in different places. From a policy viewpoint, multinational enterprises are also more likely to prefer to be taxed on a unitary basis when economic convergence eliminates the existing barriers to cross-border integration. The more integrated a multinational company, the more difficult it can be to identify the geographic location of its profits, and the more likely the company is to consider its income as earned on a unitary, worldwide basis. The elimination of barriers to cross-border expansion may lead multinational companies to the same conclusion that multistate companies reached earlier this century.

There is some concern that the current approach for taxing multinational companies may be flawed and that these flaws may worsen as the world economy becomes further integrated. In light of these concerns, governments are taking major steps to improve enforcement and compliance with the current tax system, reinforcing a principle recognized since the 1930's: a uniform approach to cross-border taxation is essential to promote the free flow of capital. The economic conditions that paved the way for formula apportionment at the state level do not exist at the international level. Although some of the concerns raised by critics of formula apportionment and unitary taxation can be surmounted, some important criticisms remain valid. And, until such time that economic conditions converge to a greater extent than at present, it is important to maintain as close a worldwide consensus on the tax system as possible.

**Table 1
State corporate income tax data, 1993**

State	Year tax adopted	Maximum Rate %	Minimum Tax \$
Alabama	1933	5	
Alaska	1949	9.4	
Arizona	1933	9.3	50
Arkansas	1929	6	
California	1929	9.3	800
Colorado	1937	5.4	
Connecticut	1915	11.5	250
Delaware	1957	8.7	
District of Columbia	1947	10	100
Florida	1971	5.5	
Georgia	1929	6	
Hawaii	1901	6.4	
Idaho	1931	8	20
Illinois	1969	4.8	
Indiana	1963	3.4	
Iowa	1934	12	
Kansas	1933	4	
Kentucky	1936	8.25	
Louisiana	1934	8	
Maine	1969	8.93	
Maryland	1937	7	
Massachusetts	1919	9.5	400
Michigan	1967	2.35*	
Minnesota	1933	9.8	
Mississippi	1921	5	
Missouri	1917	6.25	
Montana	1917	6.75*	100
Nebraska	1967	7.81	
Nevada			
New Hampshire	1970	8	
New Jersey	1958	9	*
New Mexico	1933	7.6	
New York	1917	9	*
North Carolina	1921	7.75	
North Dakota	1919	10.5	
Ohio	1971	8.9	50
Oklahoma	1931	6	
Oregon	1929	6.6	10
Pennsylvania	1935	12.25	
Rhode Island	1947	9	250
South Carolina	1922	5	
South Dakota			
Tennessee	1923	6	
Texas			
Utah	1931	5	100
Vermont	1931	8.25	150
Virginia	1915	6	
Washington			
West Virginia	1967	9	
Wisconsin	1911	7.9	
Wyoming			

*Notes: The rate listed is the maximum rate applicable. A number of states impose an alternative minimum tax or a tax on capital stock. Several states also levy special surtaxes. Michigan: taxes on business value added. Montana: Taxpayers making a water edge election are taxed at 7%. New Jersey: Domestic corporations pay a \$25 minimum tax; foreign corporations pay a \$50 minimum tax. New York: The minimum tax depends on the size of payroll, and ranges from \$325 to \$1,500.

Source: Commerce Clearing House, State Tax Guide, 1994, Chart 10-050.

Table 2 Treatment of nonbusiness income, 1993							
State	Follows UDITPA*	Items Separately Allocated**2					
		Capital Gains	Rent	Royalties	Dividend s	Interest	None
Alabama	X	X	X	X	X	X	
Alaska	X	X	X	X	X	X	
Arizona	X	X	X	X	X	X	
Arkansas	X	X	X	X	X	X	
California	X	X	X	X	X	X	
Colorado	X	X	X	X	X	X	
Connecticut							X
Delaware		X	X	X	X	X	
District of Columbia	X	X	X	X	X	X	
Florida		X	X	X	X	X	
Georgia			X	X	X	X	
Hawaii	X	X	X	X	X	X	
Idaho	X	X	X	X	X	X	
Illinois	X	X	X	X	X	X	
Indiana	X	X	X	X	X	X	
Iowa	X	X	X	X	X	X	
Kansas	X	X	X	X	X	X	
Kentucky	X	X	X	X	X	X	
Louisiana		X	X	X	X	X	
Maine	X						
Maryland							X
Massachusetts							X
Michigan						X	X
Minnesota		X	X	X	X	X	
Mississippi	X	X	X	X	X	X	
Missouri	X	X	X	X	X	X	
Montana	X	X	X	X	X	X	X
Nebraska							
Nevada							
New Hampshire							
New Jersey		X			X		X
New Mexico	X	X	X	X	X	X	
New York		X	X	X	X	X	
North Carolina	X	X	X	X	X	X	
North Dakota	X	X	X	X	X	X	
Ohio			X	X	X		
Oklahoma	X	X	X	X	X	X	
Oregon	X	X	X	X	X	X	
Pennsylvania	X	X	X	X		X	
Rhode Island							X
South Carolina			X	X	X	X	
South Dakota	X						
Tennessee	X	X	X	X	X	X	
Texas							X
Utah	X	X	X	X	X	X	
Vermont		X	X	X			X
Virginia					X		
Washington							
West Virginia		X	X	X	X	X	
Wisconsin	X	X	X	X	X	X	
Wyoming							

Table 2		
Treatment of nonbusiness income, 1993		
		Items Separately Allocated**2
<p>Notes: *1 UDITPA = Uniform Division of Income for Tax Purposes Act. Notes on UDITPA practices. Colorado: or no allocable income under state option. Iowa: with a unitary business test added. Missouri: or, under state provisions, no business/nonbusiness distinction. Similar to UDITPA. District of Columbia, Idaho, Mississippi, North Carolina, Oklahoma, Oregon, Pennsylvania, South Dakota, Utah.</p> <p>*2 Notes on allocated income. Georgia, North Carolina: gains on sale of assets not connected with business. Maryland, Oklahoma if business not unitary, net income allocated to State where activity conducted. Minnesota, Ohio, South Carolina: separately allocate income from personal services. Delaware, Minnesota, South Carolina and Wisconsin: separately allocate gain or loss from intangibles.</p> <p>Source: Commerce Clearing House <u>State Tax Guide</u>, 1993, Chart 10-110, p. 1066-67; Hellerstein and Hellerstein (1993), Table 9-1, pp. 9-8 to 9-10, and Table 9-5, pp. 9-24 to 9-25.</p>		

Table 3
Apportionment formulae in use, various years

	Number of states using each formula					
	1929	1948	1953	1963	1977	1989
Three factors ¹						
Property-payroll-sales	2	15	16	26	41	44
Property-manufacturing cost-sales	1	5	3	-	-	-
Two factors ¹	1	4	3	1	1	-
Property-sales	1	2	1	-	-	-
Property-business	-	3	-	-	-	-
Property-manufacturing cost	1	-	1	1	1	-
Property-payroll						
One factor	4	-	-	-	-	-
Property	1	1	-	-	-	-
Manufacturing cost	2	3	4	2	2	1
Sales	3	n.a.	5	5	-	1
Other	3 ³	-	-	-	-	-
No formula	17	34	35	38	46	46
Number of taxing states ²						

Note: If the state uses multiple formulas, the formula is given for manufacturing companies. Some states may be listed more than once, since alternative formulas may be available. Manufacturing costs include labor, raw materials and other manufacturing costs.

n.a. = not applicable

¹ Not all states weigh each factor equally.

² Including Hawaii (tax adopted in 1901), the District of Columbia (1947), and Alaska (1949), Michigan, which taxes on value added instead of income, uses an apportionment formula for purposes of the state corporate value-added tax.

³ Montana required separate accounting in 1929. Georgia and Oregon had recently adopted the state income tax and had not yet specified the formula.

Source: Adapted from Table 9C.1 in Annex 2c, "Tax Coordination and Competition in the United States of America," in The Ruding Report (1992), p. 433.

Table 4
Division of income for tax purposes, 1993

State	Property-Payroll-Sales		Other	Special Conditions
	Equally-Weighted	Double-Weight Sales		
Alabama	X			
Alaska	X			
Arizona		X		
Arkansas	X			
California		X		
Colorado	X		X	* Three-factor option
Connecticut		X		
Delaware	X			
District of Columbia	X			
Florida		X		
Georgia	X			
Hawaii	X		X	* Three-factor option
Idaho		X		* Eff. 1/94
Illinois		X		
Indiana		X		* Eff. 1994
Iowa			X	* 100% sales
Kansas	X		X	* Three-factor option
Kentucky		X		
Louisiana	X			
Maine		X		
Maryland		X		
Massachusetts		X		
Michigan		X		
Minnesota			X	
Mississippi	X			
Missouri	X		X	* Three-factor option
Montana	X			
Nebraska			X	* 100% sales
New Hampshire	X			
New Jersey	X			
New Mexico	X			*
New York		X		
North Carolina		X		
North Dakota	X			
Ohio		X		
Oklahoma	X			
Oregon		X		
Pennsylvania	X			
Rhode Island	X			
South Carolina	X			
Tennessee		X		* Eff. 1994
Utah	X			
Vermont	X			
Virginia	X			
West Virginia		X		
Wisconsin		X		

Table 4
Division of income for tax purposes, 1993

State	Property-Payroll-Sales		Other	Special Conditions
	Equally-Weighted	Double-Weight Sales		

NOTES: The formula generally applies to manufacturing and mercantile businesses. Five states (Nevada, South Dakota, Texas, Washington, and Wyoming) do not have a corporate income tax. Hawaii: Property-payroll for producers, UDITPA optional. Kansas: Option between UDITPA and property-sales formula. Minnesota: The standard formula weights property and payroll 15 percent each and sales 70 percent. Disallows use of three-factor formula. Michigan: Taxes on value added, but determines state income using a double-weighted sales formula. Mississippi: UDITPA if separate accounting not accurate. Missouri: Option between UDITPA and single-factor sales formula. New Hampshire: Three-factor formula with sales weighted 1.5 times and denominator of 3.5, sales factor weighted 2 times and denominator is 4. New Mexico: For tax years 1995 to 2000, certain manufacturers may use a formula with a double-weighted sales factor.

Source: Commerce Clearing House, *State Tax Guide*, Chart 10-110, and Advisory Commission on Intergovernmental Relations, *Significant Features of Fiscal Federalism*, 1994, Vol. I, pp. 84-91.

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