



**EUROPEAN COMMISSION**  
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Taxation & Customs Union

# **TAXATION PAPERS**



## **Formulary Apportionment and Group Taxation In the European Union: Insights From the United States and Canada**

**Working paper n° 8/2005**

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This working paper presents the results obtained as part of a research project conducted for the European Commission's Directorate General for Taxation and Customs Union. The views presented in this paper are my own and should not necessarily be attributed to the European Commission or to any individual staff members.

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# **TAXATION PAPERS**

## **FORMULARY APPORTIONMENT AND GROUP TAXATION IN THE EUROPEAN UNION: INSIGHTS FROM THE UNITED STATES AND CANADA**

By

Joann Martens Weiner\*

Working paper n°8 March 2005

The electronic version of this paper could be found on the Taxation and Customs Union web site: [http://europa.eu.int/comm/taxation\\_customs/taxation/taxation.htm](http://europa.eu.int/comm/taxation_customs/taxation/taxation.htm)

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## Summary

In 2001, the European Commission endorsed a future company tax strategy that would allow EU companies the option of calculating their EU profits on a common consolidated tax base and allow Member States to tax their share of that base at national rates. Implementing this strategy requires developing a formula to distribute the common tax base across the Member States.

Although EU Member States currently do not use formulary methods to distribute a common consolidated tax base across national boundaries, Canada and the United States have extensive experience using formulary methods to distribute income across sub-national boundaries. Thus, the European Union can turn to North America to gain valuable insights into the design of a formulary apportionment system with common base taxation.

This paper evaluates key issues that may arise when implementing common consolidated base taxation with formulary apportionment in the EU. These issues include the formula design, the definition of the company group and the definition and scope of the tax base. The paper also discusses potential economic consequences that may arise and suggests a potential apportionment system for the European Union.

A key insight the paper provides includes the importance of reaching agreement on the broad contours of a system of EU common consolidated base taxation with formulary apportionment. As shown by the U.S. state experience, the main controversies over the apportionment system arise from the lack of uniformity across the states. For example, although the states begin with a fairly common tax base, they differ significantly in how they define the elements of the apportionment formula, the composition of the group, and the allocation of certain types of income. By contrast, the Canadian provinces use the same formula, the same income tax base and tax international income in the same way. In both countries, the sub-national jurisdictions may vary the tax rate and apply tax credits to the post-apportionment tax base.

The lack of consolidation is the main shortcoming of in the Canadian approach and the inability to move to consolidation highlights the difficulties in adopting consolidation once the system is in place. The US state experience reinforces this conclusion. Although taxing on a group basis would prevent many of the tax avoidance and minimization strategies that exist, the states have found it extremely difficult to move to such a system once business has adapted to the current tax structure.

The Commission should work to gain sufficient agreement among the Member States on the comprehensive approach. Doing so would help avoid the complications that exist in the US state approach and, instead, allow the EU to reach the relative harmony achieved in the Canadian approach.

Keywords: Formulary apportionment and allocation; corporate income taxation; multinational firms; common consolidated base taxation; EU company tax reform

*JEL* Classification: F23, H25, H73 and H87

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# 1. A NEW APPROACH TO TAXING COMPANIES IN THE EUROPEAN UNION

## 1.1 Foreword

In 2001, the European Commission released a Communication and Study presenting a strategy that would allow EU companies to calculate their EU profits on a common consolidated tax base and use a common formula to distribute those profits across the Member States <sup>(1)</sup>. This long-term strategy complements the short-term measures targeted to eliminate specific tax obstacles. The present strategy proposes a comprehensive reform designed to eliminate the cross-border tax obstacles facing EU businesses in a single stroke.

As explained in the Study, which was prepared by the European Commission's Directorate General for Taxation and Customs Union, EU businesses should be able to compute the income of the entire EU group according to one set of tax rules. Individual Member States would tax their share of the tax base at national rates. The Commission's central idea effectively means that the Member States would supplement the separate entity accounting with arm's length pricing principle with a system of group taxation with formulary apportionment <sup>(2)</sup>.

The Commission presents a strong argument supporting its strategy. The Communication claimed:

“Only providing multinational companies with a **consolidated corporate tax base** for their EU-wide activities will really, through a **single framework of company taxation**, systematically tackle the majority of the tax obstacles to cross-border economic activity in the Single Market <sup>(3)</sup>” (emphasis in the original).

According to the Commission, the application of separate rules to calculate company income in each Member State creates numerous tax obstacles to cross-border economic activity in the Internal Market. At present, companies must determine the amount of profits earned in each Member State according to the company tax rules in each Member State. The Commission Study views this process as inconsistent with a single European market with no internal tax borders.

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<sup>(1)</sup> See the European Commission Communication (2001), “Towards an Internal Market without Tax Obstacles” (the Communication) and the European Commission Study (2002), “Company Taxation in the Internal Market” (the Study). The Commission released both documents on October 23, 2001. It subsequently published the Study in April 2002. All references to the Study will be to the April 2002 book. The Commission Study notes that panels of academics and experts from among the business community and social partners at the Community level assisted in preparing the study. See Weiner (2002b) for a related analysis of the Commission's proposals.

<sup>(2)</sup> The comprehensive approach would be optional and would not replace existing tax systems in Member States, which would exist parallel to the optional comprehensive system.

<sup>(3)</sup> See the Communication (2001, p. 15).

The Commission Study emphasizes two fundamental points:

- 1) By definition, an essential element of all the solutions is that there should be group consolidation on an EU-wide basis; and
- 2) A further key element of all the comprehensive approaches is a mechanism for allocating the common consolidated tax base to the various Member States <sup>(4)</sup>.

The Commission recognizes the significance of this change in calling its endorsement of a consolidated corporate tax base for the Internal Market a “major development”. The comprehensive approaches envisage eliminating the need for companies to comply with up to 15 (now 25) different company income tax systems. The Commission emphasizes that its future work will be directed toward providing EU companies with a consolidated corporate tax base for their EU-wide activities and developing an appropriate apportionment mechanism that can be agreed by all participants.

A formulary mechanism for distributing the common consolidated tax base is a key component of group taxation at the EU level. The Commission Study discusses two mechanisms for allocating the common tax base <sup>(5)</sup>. Under the first mechanism, profits would be distributed across the Member States according to the formulary apportionment methods used in the United States and Canada. These methods use factors, such as the shares of property, payroll and gross receipts, to distribute the tax base across the states and provinces, respectively. Under the second mechanism, profits would be apportioned according to the share of the total adjusted value added tax base measured on an origin basis in each Member State.

#### *Scope of this working paper*

This working paper presents the main analysis and results from a research project conducted by the author for the Directorate General for Taxation and Customs Union of the European Commission. In addition to that research, the analysis in the paper draws from earlier and ongoing work by the author <sup>(6)</sup>.

The Commission imposed the following assumptions and restrictions on the analysis for the research project:

- (1) The factors and weights applied to the factors will be identical in all Member States taking part in the system. If several formulae are considered, e.g., according to sectors, these should be identical across countries;
- (2) Rates to apply to the base will differ among Member States;

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<sup>(4)</sup> See paragraphs 67 and 69 of the Executive summary of the Study (p. 25).

<sup>(5)</sup> See paragraph 69 of the Executive summary of the Study (p. 25).

<sup>(6)</sup> See Weiner (1994, 1999 and forthcoming, 2005).



- (3) The water's edge principle will also apply, meaning that formulary apportionment is a system applied to the common tax base and on an EU basis (or for the subgroup of companies that would apply the scheme).

This working paper analyzes some key issues concerning the design of a company tax system with group taxation and formulary apportionment for the European Union. Section 2 discusses the basic issues that arise when designing a formulary apportionment system. It presents the historical development of the approach in North America, the economic theory behind formulary apportionment and issues concerning the definitions and locations of the apportionment factors. Section 3 discusses the definition of the company group. Section 4 discusses the tax base and territorial scope of the system. Section 5 discusses economic consequences that may arise when using a formula to distribute income across jurisdictions. Section 6 draws from this analysis to assess the key issues concerning the design of a formulary apportionment system with group taxation in the European Union.

## **2. DESIGNING A FORMULARY APPORTIONMENT SYSTEM: THE FORMULA**

### **2.1 *Background***

#### *2.1.1 Formulary apportionment and separate entity accounting*

Formulary apportionment and separate entity accounting are two methods of determining the amount of income a multijurisdictional company earns in each separate jurisdiction where it does business.

Under formulary apportionment, a company distributes, or apportions, its total income across the locations where it does business using a formula based on the share of activity it conducts in that location. By using a formula to distribute total profits across locations, the company does not need to calculate the profits earned by each member of the group in each location.

Formulary apportionment can be applied to distribute the income of a single entity, as in Canada, or to distribute the income of a related group of corporations, as in many US states.

Under separate entity accounting, a multinational entity (MNE) treats each enterprise within the group as a separate entity. The MNE determines the source of income generally by computing the income earned by each related entity in a jurisdiction according to the entity's financial accounts and following the source rules in each location's tax system. The parent company calculates its accounts as if each related entity operated as an independent entity at arm's length.

Under the arm's length principle, which underlies separate entity accounting, a multinational corporate group should price transactions with its affiliated entities as if those transactions had occurred with unrelated entities. For tax purposes, affiliated

businesses should set transfer prices at levels that would have prevailed had the transactions occurred between unrelated parties. To do so, firms identify market-based prices for goods and services transferred within the firm. The goal of the separate entity accounting with arm's length pricing approach is to obtain a result that approximates the result that independent entities would reach in the market.

Application of the arm's length principle should eliminate any special conditions that may affect the level of profits. As the Organization for Economic Cooperation and Development (OECD) explains, by providing broad parity of tax treatment for multinational enterprises and independent enterprises, the arm's length principle eliminates any tax advantages or disadvantages that might arise solely from the organizational form of the enterprise <sup>(7)</sup>.

Formulary apportionment and separate entity accounting provide distinct approaches to determining the income "earned" in a jurisdiction and each method has its staunch supporters. Beginning in the 1970s, a heated debate occurred in the United States and also among the member countries of the OECD and the individual Member States of the European Union, over the merits and demerits of using formulary apportionment to distribute income across international boundaries <sup>(8)</sup>. Since then, developments within the European Union, particularly with the creation of the Internal Market, have changed the underlying economic and business conditions prevailing in the EU and have made a formulary apportionment system seem more attractive for the European Union. There is now reasonably broad recognition within the European Union that a form of "allocation by formula" of total EU profits may be necessary to allow EU businesses to operate with an EU dimension <sup>(9)</sup>.

### *2.1.2 A brief history of formulary apportionment*

The US states and Canadian provinces have extensive experience with the formulary apportionment system. (The system is referred to as formulary allocation in Canada.) This section discusses the development of formulary apportionment in these two countries <sup>(10)</sup>.

#### *United States experience*

The US states began using formulary apportionment at the end of the 19<sup>th</sup> century for purposes of levying the property and capital stock tax on the transcontinental railroad

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<sup>(7)</sup> See OECD (2001), paragraph 5, P-2 and paragraph 1.7 p. I-3.

<sup>(8)</sup> For examples of some of these views, see Coffill and Willson (1993), Miller (1995), Culbertson (1995) and OECD (2001).

<sup>(9)</sup> For examples, see UNICE (1998, 2000).

<sup>(10)</sup> See Weiner (2005) for additional analysis.

system<sup>(11)</sup>. Instead of measuring the property value in each state, companies generally measured their total property value (railroad track, rolling stock, franchise, etc.) as a single unit and distributed that total across the states according to the value of the railway lines located in each state relative to the total value in all of the states. The so-called “unit rule” of formulary taxation, which apportioned the value of the entire enterprise (unit) using a formula, arose from this process<sup>(12)</sup>.

Wisconsin, which in 1911 became the first state to adopt the corporate income tax, applied formulary apportionment using a formula based on the shares of property, cost of manufacture and sales. Wisconsin justified using the apportionment method because it viewed calculating separate accounts as infeasible since most manufacturing corporations, as did the railway companies, conducted their business in several states. Following adoption of the federal income tax in 1913, an increasing number of states adopted the corporate income tax and used a formula to distribute total income across the states.

Although the Supreme Court had validated the use of formulary apportionment in several property and capital tax cases at the turn of the century, it had not yet addressed the use of a formula for apportioning income. In 1920, the Supreme Court found constitutional the apportionment method for distributing the net income of a manufacturing corporation across the states for income tax purposes<sup>(13)</sup>. In this particular case, the state (Connecticut) used a single factor property formula to apportion the net income of a company that conducted all of its manufacturing in one state but had branches and inventory in other states and sold its products nationwide. As the Court explained, the company did not show that “the method of apportionment adopted by the state was inherently arbitrary, or that its application to this corporation produced an unreasonable result”<sup>(14)</sup>.

By the 1930s, most states had adopted the formulary method, with business support, to tax the income of multistate businesses. A National Tax Association (NTA) survey taken in 1938 showed that most states and businesses preferred formula apportionment to separate accounting.

Many of the early apportionment formulae included a range of elements, including property values, inventory, manufacturing costs, labor expenditures, accounts receivable, purchases, etc. However, the three-factor property, payroll and gross receipts formula rather quickly became the standard formula. In 1933, the NTA, which worked to develop common apportionment practices, advocated that the states adopt the most widely used formula in the states, the so-called “Massachusetts” formula that used equally-weighted property, payroll and gross receipts factors.

The common three-factor formula also spread among the states, in part, through the Uniform Division of Income for Tax Purposes Act (UDITPA) of 1957. UDITPA

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<sup>(11)</sup> For details on the history of US state apportionment practices, see Weiner (1994), Hellerstein (1993) and Hellerstein and Hellerstein (1998).

<sup>(12)</sup> See *Pullman’s Palace Car Company v. Pennsylvania*, 141 U.S. 18 (1891) and *Adams Express Co. v. Ohio State Auditor*, 165 U.S. 194 (1897).

<sup>(13)</sup> *Underwood Typewriter Co. v. Chamberlain*, 254 U.S. 113 S.Ct. 45 (1920).

<sup>(14)</sup> See *Underwood Typewriter* (1920) at pp. 120-121.

provides uniform definitions of the factors and treatment of various types of income. By the 1950s, nearly all of the states that taxed corporate income used the Massachusetts formula.

Since its creation in the late 1960s, the Multistate Tax Commission (MTC) has also had a strong influence on state apportionment systems <sup>(15)</sup>. As part of its mandate, the MTC issues rules and regulations concerning multistate taxation. It also has developed several programs designed to improve compliance with multistate corporate income tax requirements. These programs include the Joint Audit Program, the National Nexus Program and the Unitary Exchange Project, among others. The Federation of Tax Administrators also assists in multistate tax matters.

Since the early 1980s, the states have moved toward a formula that increases the weight on the gross receipts factor and decreases the weight on property and payroll (while keeping the weights on property and payroll identical). Table 1, which lists the tax rates and formula in each state, shows that as of 2004, the average weight on the property and payroll factors is just under 25 percent, each and that the average weight on the gross receipts factor is just over 50 percent. With 23 states using this formula, the double-weighted sales formula is now the most common state formula. Fourteen states (including the District of Columbia) use the Massachusetts formula.

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<sup>(15)</sup> The MTC is a state government agency created by the states in 1967 through the Multistate Tax Compact that works to help make state tax systems “fair, effective and efficient” and encourages states to adopt uniform state tax laws and regulations. The Multistate Tax Compact incorporates the income division rules outlined in UDITPA. See Corrigan (1976) for a history of the Multistate Tax Commission.

<b>Table 1. US State Corporate Income Tax Information, January 1, 2004</b>							
		Standard Apportionment Formula (weight on each factor)					
		Tax Rate (%)	Property	Payroll	Gross Receipts	Mandatory Combination	
1	Alabama	6.5	1/3	1/3	1/3		
2	Alaska	9.4	1/3	1/3	1/3	yes	
3	Arizona	6.968	1/4	1/4	1/2	yes	
4	Arkansas	6.5	1/4	1/4	1/2		
5	California	8.84	1/4	1/4	1/2	yes	
6	Colorado	4.63	1/3	1/3	1/3	yes	
7	Connecticut	7.5	1/4	1/4	1/2		
8	Delaware	8.7	1/3	1/3	1/3		
9	Florida	5.5	1/4	1/4	1/2		
10	Georgia	6	1/4	1/4	1/2		
11	Hawaii	6.4	1/3	1/3	1/3	yes	
12	Idaho	7.6	1/4	1/4	1/2	yes	
13	Illinois	7.3	0	0	1	yes	
14	Indiana	8.5	1/4	1/4	1/2		
15	Iowa	12	0	0	1	yes	
16	Kansas	4	1/3	1/3	1/3		
17	Kentucky	8.25	1/4	1/4	1/2		
18	Louisiana	8	1/4	1/4	1/2		
19	Maine	8.93	1/4	1/4	1/2	yes	
20	Maryland	7	1/4	1/4	1/2		
21	Massachusetts	9.5	1/4	1/4	1/2		
22	Michigan		1/20	1/20	9/10		
23	Minnesota	9.8	1/8	1/8	3/4	yes	
24	Mississippi	5	1/3	1/3	1/3		
25	Missouri	6.25	1/3	1/3	1/3		
26	Montana	6.75	1/3	1/3	1/3	yes	
27	Nebraska	7.81	0	0	1	yes	
28	Nevada		No Corporate Income Tax				
29	New Hampshire	8.5	1/4	1/4	1/2	yes	
30	New Jersey	9	1/4	1/4	1/2		
31	New Mexico	7.6	1/4	1/4	1/2		
32	New York	7.5	1/4	1/4	1/2		
33	North Carolina	6.9	1/4	1/4	1/2		
34	North Dakota	10.5	1/3	1/3	1/3	yes	
35	Ohio	8.5	1/5	1/5	3/5		
36	Oklahoma	6	1/3	1/3	1/3		
37	Oregon	6.6	1/10	1/10	4/5	yes	
38	Pennsylvania	9.99	1/5	1/5	3/5		
39	Rhode Island	9	3/10	3/10	2/5		
40	South Carolina	5	1/4	1/4	1/2		

<b>Table 1. US State Corporate Income Tax Information, January 1, 2004</b>						
		Standard Apportionment Formula (weight on each factor)				
		Tax Rate (%)	Property	Payroll	Gross Receipts	Mandatory Combination
41	South Dakota	No Corporate Income Tax				
42	Tennessee	6.5	1/4	1/4	1/2	
43	Texas	No Corporate Income Tax				
44	Utah	5	1/3	1/3	1/3	yes
45	Vermont	9.75	1/3	1/3	1/3	
46	Virginia	6	1/4	1/4	1/2	
47	Washington	No Corporate Income Tax				
48	West Virginia	9	1/4	1/4	1/2	
49	Wisconsin	7.9	1/4	1/4	1/2	
50	Wyoming	No Corporate Income Tax				
51	District of Columbia	9.975	1/3	1/3	1/3	
	Average in states with a corporate income tax	7.453%	24.5%	24.5%	51.1%	

*Vermont has adopted mandatory combination effective January 2006.*  
*Source: Federation of Tax Administrators (2004), State Apportionment of Corporate Income and Range of State Corporate Income Tax Rates, and Mazerov (2002). The formulas listed are for general manufacturing business. For States with a graduated rate system, the tax rates shown are the maximum rates applicable.*

### Canadian experience

The Canadian provinces followed a different path from the US states. Some provinces adopted the corporate income tax well before the federal government entered the corporate income tax field in 1916. Until World War I, the two levels of government jointly taxed corporate income, but did so without any express coordination between levels of government. By the end of the 1930s, all of the provinces and the federal government taxed corporate income. Most provinces used the federal definition of income. However, as part of the WWII Wartime Tax Agreements, the provinces ceded the corporate income tax to the federal government to help finance the war.

After the war, the federal and provincial governments developed a model provincial corporate income tax act and created the Tax Rental Agreements (TRA). The TRAs required finding rules to allocate income across the provinces. According to Smith (1976), the purpose of the agreements seems to have been to make corporation taxes “reasonably uniform across Canada”.

The initial allocation rules assigned income according to the location of a company’s permanent establishments. If a company had a permanent establishment in more than one province, its income would be divided according to the separate accounts or, if

separate accounts were not available, according to the ratio of gross receipts of the permanent establishment to the corporation's total gross receipts.

A subsequent draft modified the formula to include gross receipts and payroll, with each factor weighted by one-half. The income subject to allocation would be limited to income from its business functions and would exclude its investment functions. The definition of permanent establishment and the distinctions between types of income were taken from Canada's income tax treaties.

Seven provinces joined the first TRAs, with Ontario and Quebec remaining outside of the agreements. At that time, the agreeing provinces used the same formula, but Ontario and Quebec each used a different formula.

The second TRA introduced a common formula using payroll and gross revenue. In another significant change, companies could use separate accounting only if they properly kept such accounts or if they could adjust their separate accounts to be "acceptable" <sup>(16)</sup>.

Ontario joined the second TRA and adopted the federal allocation rules, leaving Quebec as the only province with a different allocation formula. This situation was finally resolved in 1961 when Quebec adopted the formula used in the other provinces.

The TRAs evolved into the Federal-Provincial Fiscal Arrangements and then the Federal Collection Agreements (FCA). Under the current FCAs, the federal government incurs all the provincial collection costs in exchange for provincial agreement to levy its tax on the federal base and to use the federal formula.

This uniformity continues to exist even though both Ontario and Alberta no longer participate in the agreements. These two provinces, as does Quebec, use the same allocation formula as the provinces that participate in the federal agreements. Thus, the Canadian provinces have generally used an equally weighted payroll and gross revenue formula and the same tax base for half a century. The provinces retain significant autonomy, however, as they may apply their own local tax rates and tax credits to the post-allocation tax base.

## **2.2 *Designing the formula***

The design of the formula for dividing income across jurisdictions depends, in part, on the purpose of the formula. This analysis addresses issues concerning manufacturing and mercantile industries. Issues concerning other industries are discussed later.

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<sup>(16)</sup> According to Smith (1976), the separate accounts rule was dropped because few companies used it and it was an "administrative nightmare". He also noted that companies could use separate accounting in the US states only on request by the company or when required by the tax authority.

### 2.2.1 *Economic theory concerning the factors*

McLure (1980, 1981a) showed that measuring state income using a formula composed of the shares of a firm's property, payroll and sales in that state effectively transforms the state corporate income tax into a tax on property, payroll and sales. The expected incidence effects in an individual state from using a property, payroll and sales formula would be similar to the incidence effects of excise taxes levied directly on property, payroll and sales. (The incidence for the sales factor would depend on whether sales are measured on a destination or an origin basis.) However, in contrast to explicit excise taxes, the implicit excise taxes that arise through apportionment are specific to each firm.

Mieszkowski and Morgan (1984) confirmed McLure's arguments that using the three-factor formula discourages the use of capital and labor in the taxing state and increases relative commodity prices in the state. Symmetric results occur in the non-taxing (or low tax) states, where apportionment "subsidizes" the factors of production.

Since the formula uses firm-specific factors to apportion profits, the effective tax rate on each factor varies with the company's factor choices. Thus, a company's investment, employment and sales decisions may be distorted because its income is distributed using a formula. For example, if the formula includes capital as an apportionment factor, when a company invests additional capital in a location, the share of income apportioned to that location also increases and, all else equal, its tax burden increases in that location<sup>(17)</sup>. As a result, companies are discouraged from using more capital in that location. A similar argument holds for any firm-specific factor used to apportion income.

This distortion arises because the effective tax rate under apportionment equals not only the direct effect caused by the taxation of the factor but also the indirect effect caused by the use of a firm-specific factor used to apportion income<sup>(18)</sup>. The indirect effect can be positive or negative, depending on the relationship between the apportionment tax rate in any particular location and the weighted average apportionment tax rate over all locations, where the apportionment tax rate is weighted by the share of that factor in that location<sup>(19)</sup>.

To illustrate how such a tax or subsidy might arise, consider the effective tax rate on capital in a state. With formulary apportionment based on property (capital) shares, a state can reduce the effective tax burden on capital either by reducing the tax rate or by reducing the weight applied to the property factor. Weiner (2002a) calculated representative apportionment tax rates and marginal effective tax rates (METRs) for

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<sup>(17)</sup> Depending on the level of tax rate in that location and the sensitivity of investment, the tax burden may not necessarily increase.

<sup>(18)</sup> For further analysis of these effects, see Weiner (1994). Mieszkowski and Morgan (1984) refer to these two effects as the tax-base effect and the apportionment effect.

<sup>(19)</sup> See Weiner (1994) for calculations of these effective tax rates for the states.



capital under apportionment for the EU Member States. Assuming that all other Member States use a formula with capital as an apportionment factor, any single Member State could create a capital subsidy (a negative METR) by reducing the weight on property in the formula. In the EU context, however, Member States would likely be prohibited from freely altering the formula.

### *2.2.2 Practical choices concerning the factors*

When choosing the apportionment factors, since corporate income represents a return to capital, economic theory suggests apportioning income according to the location of capital. However, capital is not the only factor that generates income. Since labor is an income-generating factor of production, the formula should reflect labor's contribution to income, either by employee compensation or by the number of workers.

In discussing the principles for dividing the state corporate tax base, Musgrave (1984) argued that the formula should represent both the supply and the demand sides of income. Property and payroll reflect the supply side of income, while sales and gross receipts reflect the demand side of income. To reflect the market where consumption occurs, sales should be measured on a destination basis. Musgrave also explains that separate accounting may be feasible if all income is assigned to the production location, but formulary apportionment is necessary to consider the demand side of income. Including sales in the formula reflects the notion that demand creates value.

As Musgrave (2000) explained, "There does not appear to be any objective, single answer to the question of how company profits should be divided in a multijurisdictional setting". Thus, gaining agreement among jurisdictions on the rules for dividing income becomes paramount. The broad use in the US and in Canada of a formula that combines origin-based supply and destination-based demand factors seems acceptable since it balances the interests of the manufacturing and the marketing states. Thus, a balanced supply and demand formula may be politically beneficial.

In choosing a payroll and gross receipts formula with equal weights on each factor, the Canadian provinces seem to have recognized the benefits of balancing the interests of the producing and the marketing provinces. Moreover, by excluding capital, this formula eliminates the direct distortion to capital that arises in the three-factor formula. However, because local tax rates vary, METRs still vary across provinces and investment allocation is not perfectly efficient. In addition, the formula does not balance the burden on the productive factors of property and payroll.

### *2.2.3 Judicial Influences on the apportionment formula*

Although economic theory helps identify the appropriate factors to include in the apportionment formula, within the United States, the judicial process may have had a greater influence than economic theory on the apportionment process. Two main forces have influenced the design of the apportionment formula in the United States.

The first influence is that the formula must have “internal consistency”, meaning that if each jurisdiction adopted a particular formula, no more than 100 percent of the taxpayer’s business activity would be taxed. The fact that a formula must be internally consistent, however, does not say anything about whether the formula, itself, must reflect economic activity in that location.

The second judicial influence is that the formula must have “external consistency”, meaning that the factors used in the formula must reflect a “reasonable sense” of how the income was generated or have a “rational relationship” to the activities in the state. Reasonableness encompasses a division of income that reflects the economic reality of the taxpayer's business activity in the taxing state. In terms of the apportionment formula, this requirement means that the factors must be related to a taxpayer’s own economic activities in that location. It, thus, precludes using macroeconomic factors to apportion company income across the states.

These two influences stem from limitations under the Due Process and Commerce clauses of the US Constitution <sup>(20)</sup>. Due Process requires a definite link or a minimum connection (known as “nexus”) between a state and the person, property, or thing the state wishes to tax. In addition, the income must be rationally related to values connected with the taxing state. Broadly speaking, a state may tax only the share of a company’s income that it earns within the state.

The Commerce clause requires that the state corporate income tax meet several tests. These tests include that the tax (1) applies to an activity with a substantial nexus with the taxing state, (2) is fairly apportioned, (3) does not discriminate against interstate commerce, and (4) is fairly related to the services provided by the state <sup>(21)</sup>.

In cases involving foreign commerce, two additional tests arise under the “dormant” foreign commerce clause <sup>(22)</sup>. First, the tax must not prevent the federal government from “speaking with one voice” in matters involving foreign governments. Second, the tax must not expose foreign multinationals to an “enhanced risk of multiple taxation”.

The Supreme Court has sanctioned a variety of formulae, including both a single-factor property formula and a single-factor destination-based gross receipts formula. Although the Court had considered in 1965 whether a gross receipts only formula could properly represent income, in 1978, the Court explicitly accepted a single-factor gross receipts formula as reasonably indicating where income was earned <sup>(23)</sup>. Moreover, in approving this formula, the Court noted that any double taxation would arise because not all of the states used the same formula, not because one state used a single-factor formula. The only way to eliminate any possible double taxation would

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<sup>(20)</sup> U.S. Constitution, amendment XIV, section 1 and U.S. Constitution, article I, section 8, cl. 3.

<sup>(21)</sup> *Complete Auto Transit v. Brady*, 430 U.S. 274 (1977) sets forth these tests.

<sup>(22)</sup> For the income tax, see *Barclays Bank PLC v. Franchise Tax Board of California* 512 U.S. 298 (1994) and *Container Corp. of America v. Franchise Tax Board of California*, 463 U.S. 159 (1983). See also *Japan Line, Ltd. v. County of Los Angeles* 441 U.S. 434 (1979) for an analysis in the context of a state property tax.

<sup>(23)</sup> See *Moorman Mfg. Co. v. Bair*, 437 U.S. 267 (1978) and *General Motors Corp. v. District of Columbia*, 380 U.S. 553 (1965).

be to require uniform rules across the states. The Court did not view this uniformity as constitutionally required <sup>(24)</sup>.

#### 2.2.4 *Weights applied to the factors*

If the formula includes multiple factors, each factor must be weighted by a fraction so that the sum of these fractions does not exceed one. The exact weight to apply to each factor, however, is a matter of judgment.

A straightforward way to choose the weights is to weight each factor equally. The Massachusetts formula, for example, weights each factor by one-third. UDITPA incorporated this formula in 1957 and, by 1977, this formula was the standard formula in all but one of the states with a corporate income tax <sup>(25)</sup>.

Factor weights may also be chosen to weight the “production” and “marketing” sides equally. Thus, the property and payroll factors have a weight of one-fourth each and the sales factor have a weight of one-half.

The Canadian provinces use a two-factor payroll and gross revenue formula and weight each factor by one-half. The provinces, therefore, apply equal weights to the production and marketing sides.

Finally, if the apportionment formula uses value added at origin to represent the production side, the formula may include sales at destination to represent the marketing side. Weighting each factor equally will create a balance between the production and marketing locations, although the individual components of value added will not have equal weights.

Other methods of assigning factor weights may be pursued. For example, the factors may be weighted according to the specific contribution each factor makes to overall profits. The profit-split methods employed at the international level use this approach (see OECD, 2001). The United States uses formulary methods in its advanced pricing agreement (APA) program for financial services firms involved in global trading <sup>(26)</sup>. Under these APAs, the firm splits its profits among locations using a formula based on a value factor, a risk factor and an activity factor. The factor definitions and weights applied to each factor are specific to each firm.

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<sup>(24)</sup> The Court added that doing so was the responsibility of the U.S. Congress. The Commerce clause expressly authorizes Congress to “regulate Commerce with foreign Nations and among the several states”.

<sup>(25)</sup> Peckron (1977) reported that 44 states and the District of Columbia used the three-factor formula in 1977. Iowa was the only “recalcitrant” state to use a single-factor sales formula (some states did not levy a corporate income tax). The Supreme Court’s decision in 1978 validating the constitutionality of the single-factor sales formula may have triggered the move toward a formula with a relatively heavy weight on the sales factor.

<sup>(26)</sup> See Internal Revenue Service Notice 94-40, 1994-1 *Cumulative Bulletin* 351. In entering into these APAs, the IRS made it clear that it is not prescribing a method or factors that will necessarily apply in all APAs. Other methods or factors may be appropriate in other circumstances.

Standardized weights may be determined on an industry basis and then applied uniformly across industries. Finally, specific factor weights may be estimated using econometric analysis. For example, profits could be estimated as a function of the factors used in the formula, with the regression point estimates forming the basis for assigning the weights to each factor.

### ***2.2.5 Missing factors and other formulae***

A firm doing business in several locations may not have property, payroll, or gross receipts in each location. In such cases, if a state uses a multi-factor formula and one of the factors is “missing”, then the taxpayer excludes that factor from the formula and averages the remaining factors by the total number of factors present and applies this formula to its total income. A factor will be missing only if both the numerator and the denominator are zero. If the numerator is zero within a state but the denominator is positive, then the factor remains in the formula.

The Canadian provinces also apply a “missing factor” rule. If a corporation, for example, does not have gross revenue during a year, then its income will be allocated to the provinces according to the share of salaries and wages paid that year.

Taxpayers may also use an alternative formula in certain cases. In most states, a taxpayer that might otherwise be required to use the standard apportionment formula may petition the state tax authority to use an alternate formula (or method). The new formula may drop a factor or modify the definition, for example, so that the formula may more accurately represent where the taxpayer has earned its income. UDITPA section 18 outlines these provisions.

## ***2.3 Definitions and locations of the factors***

The US states have adopted fairly similar definitions of the property, payroll and gross receipts factors as provided in UDITPA. In addition, the Multistate Tax Commission has developed allocation and apportionment regulations that provide further details on implementing UDITPA and other rules. The Canadian provinces have standard definitions of the payroll and gross receipts factors. The two countries measure each factor differently, as discussed below. Moreover, the individual US states also often modify the definitions of each factor to reflect particular state preferences. Such variation does not arise in the Canadian provinces.

### ***2.3.1 Property***

In the United States, the property factor includes real and tangible personal property owned or rented and used in the state during the tax period. Such property includes land, buildings, machinery, stocks of goods (inventory), equipment and other real and tangible personal property. The UDITPA property definition does not include intangible property, although some states include certain intangible property, such as computer software, in the property factor.

Owned tangible property is valued at its original cost averaged over the year. In general, original cost equals the basis of the property for federal income tax purposes at the time of acquisition, adjusted for certain capital improvements and deductions, but not for depreciation. Rented tangible property is capitalized at eight times its net annual rental rate. Special procedures apply if property is sub-rented. Inventory is generally valued according to its value for federal tax purposes. Some states require the taxpayer to use the values for real and tangible personal property reported on the taxpayer's federal income tax return.

#### *Location of property*

As a general rule, real and tangible personal property is located in a state if the property is owned or rented and used in the state. Special rules apply concerning mobile and in-transit property, construction in progress, property in international waters, government-owned property and property that is temporarily not in use. For example, the numerator of the property factor may include mobile property according to the share of total time spent in the state during the year or according to its destination.

#### *2.3.2 Payroll*

The US states generally measure payroll by employee compensation, which includes wages, salaries, commissions and any other form of remuneration paid or accrued to employees for personal services. This figure corresponds to the amounts for federal employment reporting purposes. In-kind compensation, such as the value of room and board, may also be included in the payroll factor if it would also be included in federal gross income. Payroll excludes payments made to independent contractors or to any person who is not classified as an employee, but it may include payments made to leased employees. Many states define an employee according to federal rules imposed for purposes of levying federal payroll taxes for unemployment benefits under the federal Model Unemployment Compensation Act.

The Canadian payroll factor includes compensation and taxable benefits paid to employees of the corporation. Benefits are included in the payroll factor only if they are deductible by the corporation. Allocable salaries and wages do not include unemployment insurance contributions and pension plan contributions, nor do they include fees paid to directors who are not employees and commissions paid to persons who are not employees. However, fees paid to another person for services that would normally be performed by employees of the corporation are included in allocable salaries and wages.

#### *Location of payroll*

The US states and Canadian provinces follow different procedures for assigning the location of payroll. In the states, if the employee performs the services entirely within the state, compensation is treated as if it had been paid in that state. If the employee performs services both within and outside the state, the following rules generally

apply. Compensation is deemed paid in a state if the employee's base of operations is in the state, or, in cases where the employee has no base of operations, if the employee is directed or controlled from a location in the state. If neither condition holds, compensation will be attributed to the employee's state of residence.

The provinces generally assign salaries and wages to the permanent establishment where the employee normally reports to work. However, salaries and wages for head office administration are assigned to the location of the head office.

### 2.3.2 Sales and gross receipts

In the states, the sales and gross receipts factor generally includes gross receipts less returns and allowances from the sale of goods or products and gross receipts for services, interest, dividends, rentals, royalties, capital gains and other business income. In general, sales and gross receipts include all gross receipts that are not specifically allocated to a location. Thus, the definition of "sales" includes not only sales of goods but also all gross receipts derived in the regular course of trade or business. UDITPA defines "sales" as "gross receipts".

For sales of other than tangible personal property, many states look to the income-producing activities that create gross receipts. Income-producing activities generally mean the transactions and activities directly engaged in by the taxpayer in the regular course of trade or business. Under MTC regulations, an income-producing activity includes the use of tangible and intangible property by the taxpayer in performing a service; the sale, rental, leasing, licensing or other use of real property; the rental, leasing, licensing or other use of tangible personal property; and the sale, licensing, or other use of intangible personal property <sup>(27)</sup>. Thus, for intangible property, the sale, licensing or other use of intangible personal property is an income producing activity, whereas the mere holding of intangible personal property is not generally considered an income-producing activity.

In the provinces, gross revenue includes revenue from any source that is not specifically excluded. Interest on bonds, debentures, or mortgages; dividends on shares of capital stock; and rentals or royalties from property that is not used in connection with the principal business operations of the corporation are excluded from gross revenue.

In both Canada and the United States, gross receipts are net of any returns or discounts. Whereas Canada excludes from the sales factor any federal or provincial sales taxes collected, many US states include federal and state excise taxes if such taxes are passed on to the buyer or included as part of the product's selling price.

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<sup>(27)</sup> See MTC Reg. IV.17 Sales Factor: Sales Other Than Sales of Tangible Personal Property in This State and (2) Income producing activity: defined.

### *Location of sales and gross receipts in the US states*

In the United States, most states assign tangible sales on a “destination basis”, that is, to their ultimate destination, rather than on an “origin basis”, that is, to the location of shipment or where the sale was negotiated. However, in cases where the sale is not taxable in the state of destination, many states deem the sale to have occurred in the state of origin, as discussed below.

States generally assign sales of other than tangible personal property or gross receipts from intangible property to the location of the income-producing activity. If only part of that activity occurs within the state, gross receipts may be attributed to the state where the greater proportion of the income-producing activity is performed, based on costs of performance. In some cases, gross receipts may be attributed to a state according to the ratio of the time spent performing the personal services in the state to the total time spent performing the personal services everywhere.

#### *The throwback rule*

Many states have adopted a throwback rule for sales of tangible personal property. Under the general throwback rule in UDITPA, sales of tangible personal property will be returned to the state of origin if the seller is not taxable in the state of the purchaser or if the sale is made to the US government. These sales are returned to the state from which the property was shipped, i.e., to the state of origin, and included in the numerator of that state’s sales factor.

The throwback rule prevents the creation of “nowhere” income when sales are shipped to a location where they are not subject to tax. This situation may occur either because federal law prohibits the state from taxing the sale or because the seller may not have a sufficient nexus with that state to become subject to its taxing jurisdiction<sup>(28)</sup>.

The throwback rule does not apply simply because a state chooses not to tax the sale. The sale will still be assigned to the destination state as long as that state has the jurisdiction to levy an income tax on the taxpayer regardless of whether the state, chooses to levy the tax.

#### *The throwout rule*

Many states assign gross receipts from the licensing or sale of patents, copyrights, or trademarks to the location where the intangible personal property is used. If the income-producing activity from intangible personal property can be readily identified, the income is included in the denominator of the sales factor and, if the income-producing activity occurs in the state, in the numerator of the sales factor as well <sup>(29)</sup>.

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<sup>(28)</sup> Under Public Law No. 86-272, which was enacted in 1959, states may not levy an income tax on a non-resident company if its only connection with the state is soliciting orders for sales of tangible personal property sent from outside the state. This law applies only to taxes based on or measured by net income.

<sup>(29)</sup> See MTC Reg. IV.18.(c). Special rules: Sales Factor.

For example, if copyrighted material is printed in a state, the copyright is considered to be used and located in that state.

By contrast, if the business income from intangible property cannot be readily attributed to any particular income-producing activity of the taxpayer, the income cannot be assigned to the numerator of the sales factor for any state and shall be excluded from the denominator of the sales factor. Thus, if business income in the form of dividends received on stock, royalties received on patents or copyrights, or interest received on bonds arises from the mere holding of the intangible personal property of the taxpayer, such dividends and interest shall be excluded entirely from the sales factor.

#### *Location of sales and gross receipts in Canada*

Canada applies a destination-based rule that attributes gross revenue to the permanent establishment where the customer is located<sup>(30)</sup>. In general, the amount of income deemed earned in each province is the average of the share of gross revenue attributed to the permanent establishment in the province and salaries and wages paid in the year by the corporation to employees of the permanent establishment<sup>(31)</sup>. Gross revenue is assigned to the permanent establishment located at the destination point of the merchandise shipment.

Determining whether the taxpayer has a permanent establishment in a province is a question of fact and depends on the circumstances of each case. For example, a corporation's subsidiary in a province or a subsidiary engaged in a trade or business in a province does not, by itself, constitute a permanent establishment of the corporation. A corporation that has a fixed place of business in a province will have a permanent establishment in that province, but it may also have a permanent establishment in other cases, such as if it carries on business through an agent in the province. However, a corporation that does all of its business from a source outside of the province through mail order and catalogue sales and does not have a stock of goods in the provinces usually will not have a permanent establishment in that province.

If the taxpayer does not have a permanent establishment in the province or country where the customer is located, then the provinces employ a type of "throw back" rule. In the first instance, the sale will be assigned, or thrown back, to the permanent establishment where the person negotiating the sale is attached.

The rule changes slightly if the destination of a merchandise shipment is to a country other than Canada where the taxpayer does not have a permanent establishment. In this case, if the activity occurred in a single province, the revenue is assigned to the province where the merchandise was produced or manufactured. If the merchandise was produced or manufactured in several provinces, then the gross revenue is assigned to each province according to the salaries and wages paid to employees at each of the locations where the taxpayer has a permanent establishment involved in the production or manufacture of the merchandise.

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<sup>(30)</sup> I am grateful to Jack Mintz for assistance with this section.

<sup>(31)</sup> See Regulation 402 for detailed rules on the allocation of gross revenue.



Another rule applies in certain cases concerning sales made to customers in countries other than Canada. In these cases, if the taxpayer has a permanent establishment in the other country but the corporation is not subject to taxation on its income under the laws of that foreign country or through application of a tax treaty, the sale is exempt from Canadian taxation.

## **2.4 Sector-specific formulae**

### **2.4.1 Manufacturing and mercantile industries**

The general apportionment formula used in the US states employs a combination of property, payroll and gross receipts for manufacturing and merchandising. The general apportionment formula in the Canadian provinces employs gross revenue and salaries and wages for manufacturing and merchandising.

### **2.4.2 Other sectors**

The traditional formula may not be appropriate for all industries, however, as it may not necessarily reflect the factors that generate income for those industries. Both the US states and Canadian provinces apply specific formulae for other industries to reflect their particular industrial structure.

Special apportionment formulae generally apply for construction contractors, airlines, railroads, trucking companies, television and radio broadcasting, financial institutions and publishing.

Some states have also adopted specialized apportionment rules for other industries, including courier and package delivery services, telecommunication companies, pipeline companies, shippers, franchisors, film producers, securities brokers, professional sport teams, insurance companies, mutual funds and the fishing industry. In addition, the states allow a taxpayer to petition to use an alternative formula if the prescribed formula is inappropriate.

In some cases, a taxpayer that has several businesses that would use different formulae would use the formula appropriate for the sector in which it earns the majority of its gross receipts. In Illinois, for example, if a single corporation's business is composed of both manufacturing and the provision of transportation services, it uses the appropriate formula for the predominant area of its business to apportion the income of the entire business.

In other cases, separate businesses use separate formulae. For example, California has developed a procedure for calculating an apportionment formula for a unitary business that includes a general corporation and its financial subsidiaries. In this case, the property factor includes a share of the receivables of the general corporation and the intangible property of the financial corporation at 20 percent of its face value. As

Miller (1995) explains, the 20 percent figure was derived from the relationship between the value of the property of financial and of other industries.

In Canada, special allocation formulas apply for nine different industries --- insurance corporations, banks, trust and loan corporations, railway corporations, airline corporations, grain elevator operators, bus and truck operators, ship operators and pipeline operators. These formulae generally reflect a particular feature of that industry. The formula for pipeline operators, for example, replaces the sales factor with a factor reflecting the miles of pipeline in the province. For airlines, a fixed asset cost factor replaces the payroll factor and a revenue plane miles flown factor replaces the sales factor. Insurance corporations allocate solely on the share of net premiums earned in the province to total net premiums earned. Chartered banks allocate on the basis of salaries and wages paid to employees of its permanent establishments in the province plus aggregate loans and deposits of its permanent establishments in the province to their respective totals. The loan factor is double-weighted for chartered banks.

### **3. THE COMPANY GROUP**

Determining the contours of the company group is a central issue in adopting group taxation within the EU. Various tests are consistent with “group” taxation, including tests based on ownership shares, as under consolidation, to tests based on the economic connections and relationships among affiliated entities and their parent companies, as under unitary combination. This section describes some of these tests.

#### **3.1 Consolidation and combination**

Consolidation of legally separate entities and combination of economically unitary entities share many features. Both approaches create a company “group” for tax purposes. Thus, both approaches can reduce the need to price internal transfers and can eliminate withholding taxes levied on internal payments of dividends, interest, royalties, etc., among related corporations. Both approaches also provide for loss offsetting between affiliated entities.

Despite some similarities, however, consolidation differs significantly from combination. For example, whereas meeting a legal ownership threshold is generally sufficient to determine whether entities may be consolidated into a single taxable group, meeting a legal ownership threshold may be a necessary, but is generally not a sufficient, condition to include an entity in the unitary group. To be included in the unitary group, the related entities must be economically integrated or have economic interdependencies. To be included in the consolidated group, however, the related entities need not have any economic inter-relationships, as long as the entities meet the ownership threshold.

Consolidation may be interpreted as a group of entities linked by legal ownership while combination may be interpreted as a group of entities linked by economic ownership (with perhaps a legal ownership element as well). The consolidated and the combined group may be identical, but this need not be the case.

Neither consolidation nor (unitary) combination is required to implement a formulary apportionment system. For example, since Canada does not allow consolidation, the Canadian provinces apply formulary allocation on a separate entity basis. Thus, a company headquartered in one province and doing business through legally separate subsidiaries in other provinces will not be subject to formulary apportionment.

The United States allows consolidation for federal tax purposes. However, although all of the states that tax corporate income use formulary apportionment to distribute the income of a corporation doing business across the states through multiple divisions, only about one-third of the states receive use of the formulary method to legally separate entities that form a unitary business. Table 1 lists the states that apply mandatory combination. In 2004, sixteen states require unitary combination.

### **3.2 Definitions of the group**

In considering consolidated base or group taxation with formulary apportionment within the EU, it is important to define the group in a way that is feasible, practical and administrable. While consolidation is a simple choice and possibly the most logical and practical choice for now, there are many reasons to consider how the unitary business principle addresses critical tax issues. This section discusses some of the group definitions that the US states have implemented.

#### **3.2.1 Consolidation based on ownership or control**

A simple way to define a group would be to include all affiliates that exceed a certain ownership level within the group. Companies that file on a consolidated basis would then pay tax based on consolidated group income, adjusted for net operating losses and certain intercompany transactions.

In the US state context, Corrigan (1980) suggested that majority ownership of one corporation by another should be sufficient to define the group. This test would eliminate the subjectivity that can arise in trying to determine whether internal transactions are sufficiently integrated to create a unitary business. Combining or consolidating affiliates based on ownership would generally avoid the “facts-and-circumstances” tests arise when defining a unitary business. Musgrave (1984) also argued that a 50-percent ownership test would “likely go a long way toward determining apportionable units” and would seem to resolve most of the difficult problems that arise in determining the company group.

Although there are advantages to an ownership test, defining the company group (or the taxable group) solely on an ownership basis ignores the fact that a group of related but less than majority-owned companies could nevertheless be very highly

economically integrated. This economic integration may encourage the taxpayer to modify intercompany transactions or alter the corporate tax structure solely for tax purposes.

McLure (1984) provided an economist's view on defining a unitary business according to consolidation rules. He stated that "although there may be much to be said for such a straightforward rule from the point of view of simplicity, certainty and uniformity, from an economic point of view (majority) ownership is neither necessary nor sufficient for the existence of a unitary business". This line of thinking echoes the Supreme Court's argument in *Mobil* that "Superficially, intercorporate division might appear to be a[n] . . . attractive basis for limiting apportionability. But the form of business organization may have nothing to do with the underlying unity or diversity of business enterprise" <sup>(32)</sup>.

### 3.2.2 Unitary business definitions

A number of states define the taxable group according to economic integration rather than legal integration. The unitary business idea views all of the elements of a single trade or business as a single unit. This concept extends beyond legal ownership or control to examine the degree of operational or economic integration or dependency among related entities. Under the unitary business concept, the scope of the "unitary business" is first defined and then the income of that unitary business is apportioned using a formula based on the activities of the members of the unitary group in each jurisdiction.

A key reason to apply unitary combination arises when the technologically and economically integrated elements of a multiple-entity business form a single "unitary" business and these links among the various members of the firm make it difficult, if not impossible, to identify the profits attributable to each of them. These links may include economies of scale, economies of scope and shared management, research and development and other costs. As a result, the joint profits of the firm are higher for the group than they would be if the members of the group acted as independent entities and it is not possible to split the joint profits among the members of the firm. Therefore, the related members of the firm must be treated as a single "unitary" business.

Use of the unitary method, which was developed in California, accelerated when the California Supreme Court held that once a business is found to be unitary then the state statutes require it to use formulary apportionment <sup>(33)</sup>. In these cases, the California Court ruled that the state could not require a taxpayer to use separate accounting if the taxpayer was a unitary business.

A US Supreme Court ruling reinforced this notion two decades later stating that "the linchpin of apportionability in the field of state income taxation is the unitary business

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<sup>(32)</sup> See *Mobil Oil Corp. v. Commissioner of Taxes*, 445 U.S. 425 (1980).

<sup>(33)</sup> See *Superior Oil Co. v. Franchise Tax Board*, 60 Cal. 2d 417 (1963) and *Honolulu Oil Co. v. Franchise Tax Board*, 60 Cal. 2d 406 (1963). In these cases, the taxpayers requested unitary treatment over the tax authority's position that the companies should file on a separate accounting basis.

principle”<sup>(34)</sup>. Although the Supreme Court has frequently dealt with unitary business issues, it has not established a ‘bright line’ definition of a unitary business.

The states have enacted a range of unitary business definitions. The US Supreme Court has accepted this situation, stating that “A final point that needs to be made about the 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”<sup>(35)</sup>. This section discusses various ways of defining a unitary business.

#### *Unity of ownership, operation and use*

California has used formulary apportionment since adopting the corporate income tax in 1929. As Miller (1984) explains, the state tax authorities proposed the combined report procedure in the 1930s to prevent improper profit shifting out of state.

The California Supreme Court articulated the “three unities” test in its *Butler Bros.* decision:

“[I]t is in 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”<sup>(36)</sup>.

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 *inter alia* from common purchases, centralized advertising and record keeping, common legal representation and intercompany financing. Unity of use is found by not only a flow of goods, but also by shared management and information, common knowledge and expertise, etc.

Based on the finding that the business was unitary, the Court rejected the company’s request to use separate accounting, arguing that a company may use separate accounting only when it can segregate income clearly and accurately. The Court found that it would be impossible to achieve this outcome for the company’s integrated interstate operations.

#### *Dependency or contribution*

The rationale for extending the unitary business to encompass multiple entities derives from the argument that the operation of the business within the state depends on or

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<sup>(34)</sup> See *Mobil Oil Corp. v. Commissioner*, 445 U.S. 425 (1980). The Supreme Court later expressed the view that “The existence of a unitary relation between payee and payor is one justification for apportionment, but not the only one”. *Allied-Signal v. Director, Division of Taxation*, 504 U.S. 768 (1992). For an analysis, see Hellerstein (1993).

<sup>(35)</sup> See *Container Corp. v. Franchise Tax Board*, 463 U.S. 159 (1983).

<sup>(36)</sup> See *Butler Bros. v. McColgan*, 17 Cal. 2d 664 (1941).

contributes to the operation of the business outside of the state, regardless of the corporate structure. As Altman and Keesling (1946) argued, “The 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 there is such a relationship, the business is unitary”<sup>(37)</sup>. This relationship does not depend on whether the entity is organized as a branch or as a subsidiary. Thus, there is no reason to limit the combined report to divisions of a single corporation.

With its ruling in *Edison Stores*, the California Supreme Court validated the extension of the unitary business concept to activities conducted by a multi-corporate group<sup>(38)</sup>. As Miller (1984) explained: “This approach [combined reporting] was justified under the rationale of the formula itself, which looked to the activities of a business that took place beyond a state’s boundaries in determining the amount of income attributable to the state. If this approach could be used with state boundaries, then it should be equally applicable to corporate boundaries as long as a single business was involved”.

#### *Operational unity and economic unity*

Keesling and Warren (1960) presented the dual notions of “operational unity” and “economic unity” as relationships that help determine the existence of a unitary business<sup>(39)</sup>. Operational unity encompasses a business that is vertically integrated. For example, an entity that operates a mine in one state, where it extracts, processes and sells ore, while it maintains its headquarters company in another state, where it performs management, financing and accounting functions can be described as operating a unitary business. Economic unity exists when two or more activities that are distinct from an operational standpoint should nevertheless be considered as a unitary business because of the economic interrelationships that exist.

#### *Basic operational interdependence*

To help establish some order to the unitary business notion, Jerome Hellerstein (1968) suggested limiting a unitary business to its interdependent basic operating functions. He argued that “there is no viable way” to separate the profits of a business whose independent operating functions are carried on in more than one state. As Hellerstein (1982) later noted, “the basic operational interdependence requirement employs a badly needed objective test of a unitary business”. He also suggested imposing a substantiality requirement of one-fourth to one-third of the flow of goods or services among controlled corporations.

Under a test that examines operational integration, non-operational functions, such as centralized management, financing, advertising, the use of patents, trademarks and expertise and other ancillary or supportive activities, would not indicate the existence of a unitary business. Hellerstein specifically rejected the notion that non-operating functions, such as legal counseling and fiscal control, could be examined to find a

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<sup>(37)</sup> This book has strongly influenced the development of the unitary business concept in the states.

<sup>(38)</sup> See *Edison California Stores v. McColgan* 30 Cal.2d.472 (1947).

<sup>(39)</sup> Peters (1999) refers to the combined report method as the “brainchild” of Frank Keesling. Keesling counsel to the California Franchise Tax Board at the time.

unitary business. In his view, standard accounting methods could be employed to distribute the costs of centralized operations across the unitary business. He also argued that providing a rather narrow definition of a unitary business would better avoid legal controversy, extraterritorial taxation and excess compliance costs, than would a broad unitary definition.

### *Economic interdependence*

McLure (1983, 1984) suggested defining the unitary group according to its economic interdependencies. He defined a three-stage test for determining whether an entity should be included in the unitary group. First, for a unitary business to exist, the entity must be under common control via ownership or management. Second, there must be shared expenses, economies of scale or scope, intragroup transactions, vertical integration, or other economic interdependencies. Third, these economic interdependencies must be so substantial that it is not possible to divide profits properly among the group members. This latter condition is necessary to prevent commonly controlled affiliated firms from being included in the unitary group if they have only insignificant economic relations with the group.

According to McLure, economic interdependence is the critical element of a unitary business. Economic interdependencies among commonly controlled members make it ‘conceptually impossible’ to determine the income of the individual members. An economic interdependence test would allow a unitary business to encompass not only the production and marketing elements of a business that created a flow of goods, but also the management and holding company elements that created a flow of value.

### *Flow of value*

In 1984 in *Container Corp.*, the Supreme Court addressed the scope of a unitary business. Specifically, the Court considered whether the Container Corporation and its affiliates doing business in the paperboard packaging industry constituted a unitary business. The company, explaining that it had minimal operational interdependence with its subsidiaries, proposed that the Court adopt a “substantial flow of goods” as a bright-line rule for characterizing a mercantile or manufacturing enterprise as unitary business. The Court rejected this argument, noting that although substantial mutual interdependence can arise through a substantial flow of goods, a flow of goods is not the only way to create such interdependence. The Court explained that “The prerequisite to a constitutionally acceptable finding of a unitary business is a flow of *value*, not a flow of goods”<sup>(40)</sup>. This presence of a flow of value supplemented earlier rulings that a unitary business exhibits “contributions to income resulting from functional integration, centralization of management and economies of scale”<sup>(41)</sup>.

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<sup>(40)</sup> See *Container Corp.* 463 U.S. 159 (1983) at 178 n. 17 (emphasis in the original), citing McLure (1983). Based on the Supreme Court’s focus on the importance of the economic interdependencies over operational interdependence in unitary analysis, Walter Hellerstein (2004) concludes: “It is not an overstatement to say that the contemporary constitutional definition of a unitary business is rooted in the work of Charles McLure”.

<sup>(41)</sup> See *Mobil Oil Corp. v. Commissioner of Taxes of Vt.* 445 US 425 (1980), *F.W. Woolworth Co. v. Taxation and Revenue Dept. of the State of New Mexico* 458 U.S. 354 (1982) and *Allied Signal v. Director, Taxation Division* 504 U.S. 768 (1992).

The Court also noted that the fact that the results obtained under separate accounting differed from those under apportionment had no bearing on the acceptability of the apportionment results. It explained that the separate accounting method is “based on precisely the sort of formal geographical accounting whose basic theoretical weaknesses justify resort to formulary apportionment in the first place”. The Court had earlier indicated that the “The principal virtue of the unitary business principle of taxation is that it does a better job of accounting for ‘the many subtle and largely unquantifiable transfers of value that take place among the components of a single enterprise’ than, for example, geographical or transactional accounting”.

## **4. THE TAX BASE**

### **4.1 *The taxable connection or nexus***

A company must have a sufficient connection or nexus with a jurisdiction before it becomes subject to that jurisdiction’s tax system. This connection can arise in many ways, from the company’s physical presence to its “intangible” presence in the jurisdiction.

#### **4.1.1 Physical presence**

For sales and use taxes in the US states, the US Supreme Court has established a physical presence test as necessary for the taxpayer to be subject to that state’s sales and use taxes. In these cases, the Court has ruled that a state may not collect sales and use taxes on sales made in the state by an out-of-state entity if the entity’s only connection with the state is to solicit orders that it fills from outside the state<sup>(42)</sup>.

Some state courts have ruled that a physical presence is also required for income taxes. For example, a New Jersey court found that substantial nexus requires the physical presence of a taxpayer or its employees in the state<sup>(43)</sup>. The state court based its reasoning, in part, on the desire to maintain uniformity between the nexus test for sales and use tax purposes and for income tax purposes.

#### **4.1.2 *Intangible presence***

In contrast to the physical presence requirement for sales and use taxes, there is no such requirement for the state income and franchise tax. As Jerome Hellerstein (1995) explained, the Supreme Court has “made it clear that the presence of the recipient of

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<sup>(42)</sup> See *Quill Corp. v. North Dakota*, 112 S.Ct. 1904 (1992). Although the taxpayer’s activities met the minimum connection requirements under Due Process, these connections were not sufficient to meet Commerce Clause requirements. See also *National Bellas Hess, Inc. v. Department of Revenue* 386 U.S. 753 (1967).

<sup>(43)</sup> See *Lanco, Inc. v. Director, Division of Taxation*, 21 NJ Tax 200 (2003).



income from intangible property in a state is not essential to the state's income tax on income of a non-resident". Instead, a state may tax a non-resident on its income that arises from the use of the intangible property in the state. This principle was illuminated in 1993 when a South Carolina state court established that the out-of-state company's trademark licensing arrangement with the in-state related company created a substantial nexus with that out-of-state trademark holding company<sup>(44)</sup>.

In reviewing state tax cases since that decision, Hellerstein and Hellerstein (1998, cum. Sup 2004), find a range of views on whether physical presence is required for income tax purposes. They conclude that even though these views are mixed, the majority of reactions across the country to the *Geoffrey* ruling support the proposition that physical presence is not required for income taxes.

#### **4.1.3 Permanent establishment**

In the international arena, the permanent establishment rule generally determines whether a taxpayer has a sufficient connection with a jurisdiction to be subject to that jurisdiction's tax system. The Permanent Establishment article (Article 5) of the OECD Model Convention sets forth a series of tests for determining whether an enterprise has a fixed place of business through which it carries on its business and, thus, whether the enterprise has a permanent establishment. These tests include a place of management, an office, a branch, a factory and so forth. These tests require a physical presence for a permanent establishment to exist<sup>(45)</sup>.

The Commentary to Article 5 also makes it clear that a business that merely sells into another country without having any other connection to the country will generally not have a permanent establishment in that country and, thus, will not have a taxable presence. Moreover, since it is a legally separate entity, the existence of a subsidiary company does not, by itself, create a permanent establishment for the parent company.

## **4.2 Treatment of specific items of income**

The distinction between income earned as part of the ongoing business and income earned as an incidental part of the business exists at both the national and sub-national levels. At the national level, tax laws and treaty provisions generally establish the tax treatment of these items. These laws treat some items as "business profits" and other items, such as dividends, interest and royalties, as "passive" income. At the sub-national level, most US states distinguish between "business" income that is apportionable across locations and "non-business" income that is allocable to a specific location.

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<sup>(44)</sup> See *Geoffrey Inc. v. South Carolina Tax Commission*, 437 S.E. 2d (1993).

<sup>(45)</sup> For the convention, see OECD (1998). The OECD (2004) is evaluating issues concerning profits attributable to a permanent establishment.

#### 4.2.1 *Business and non-business income*

Most states have adopted UDITPA, either in whole or in part, which outlines the basic rules for dividing income. Section 9 of Article IV of UDITPA indicates that business income shall be apportioned using an equally weighted property, payroll and sales formula. Sections 4 to 8 of Article IV provide specific rules for allocating non-business income, including rents and royalties from real or tangible personal property, capital gains and losses, interest, dividends and patent or copyright royalties. In some cases, the items of income are allocated to the taxpayer's commercial domicile, while in other cases, the items of income are allocated to the location of the physical property or to the location where the intangible property is used.

Business income generally means income arising 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.

In addition to the rules outlined in UDITPA, regulations issued by the MTC provide guidance on how to determine whether income is business income. For example, income derived from property that forms an integral, functional or operative component of the taxpayer's trade or business operations is business income. Income from intangible property is business income if the intangible property serves an operational function rather than solely an investment function<sup>(46)</sup>.

Once business income has been identified, all other income is treated as non-business income. In general, income is presumed to be business income unless it is clearly identifiable as non-business income.

The states follow a variety of approaches to distinguish between the two types of income. For example, capital gain on the sale of stock might be classified as business income if the stock formed part of the business while it might be classified as non-business income if the investment was not related to the main business. In the former case, the gain would be apportioned over all locations where the company did business. In the latter case, the entire gain would be allocated to a single location for tax purposes. Some states define apportionable income as all income that may be constitutionally apportionable<sup>(47)</sup>.

### 4.3 *Territorial scope*

#### 4.3.1 The European Union's Water's Edge

The idea under consideration in the EU would create a company tax system that encompasses only the income and operations within the territorial boundaries, or the "water's edge", of the European Union. The term "water's edge" derives from the

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<sup>(46)</sup> See Reg. IV.1. (a). Business and Nonbusiness Income Defined in Multistate Tax Commission, *Allocation and Apportionment Regulations*, updated September 2003.

<sup>(47)</sup> See Hellerstein (2001) for an evaluation of some of the difficulties that arise in distinguishing between apportionable and allocable income.

practices in the US states of generally restricting the combined group to companies (or parts of companies) that have income subject to tax by the US federal government<sup>(48)</sup>.

The states with water's edge combined reporting generally exclude foreign subsidiaries from the group and generally follow federal rules regarding the treatment of international income. In many states, for example, the amount of income included in the "water's edge" is the amount reported for federal income tax purposes. Some states allow taxpayers to apply combined reporting on a worldwide basis.

The water's edge restriction is a key element of the EU proposal. This restriction is imposed to meet the objective of minimizing compliance costs, facilitating investments in the EU and respecting bilateral and international agreements between the EU Member States and non-EU countries. Limiting the system to operations within the European Union is politically practical, as well, since imposing this limitation avoids re-opening the controversies that surrounded the use of a worldwide combined reporting method in some US states during the late 20<sup>th</sup> century<sup>(49)</sup>.

As an example of the practical effect of the water's edge limitation, Justice Powell, writing for the dissent in *Container*, argued that double taxation arises because "California has rejected accepted international practice in favour of a tax structure that is fundamentally different in its basic assumptions" and that makes double taxation inevitable. The dissent suggested that the international outcry over the unitary method could be eliminated if the states used the income reported for federal tax purposes as the group income<sup>(50)</sup>. Since the taxpayer calculates this amount under international rules, i.e., the arm's length method, the practice would be consistent with both international practice and federal policy.

To some extent, European opposition to unitary combination was driven by litigation concerning California's application of worldwide combined reporting to foreign-based parent companies<sup>(51)</sup>. This opposition, which was expressed during *Container* and *Barclays Bank*, was based primarily on the argument that the state system of worldwide unitary combination and formulary apportionment was imposed "unilaterally" and was "incompatible" with the international system of arm's length pricing<sup>(52)</sup>. In acknowledging the importance of this international opposition, the US Supreme Court noted that a "battalion of foreign governments" had "marched to

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<sup>(48)</sup> State definitions of the water's edge are not uniform.

<sup>(49)</sup> In addition to the fact that the states applied the unitary method unilaterally, another reason for the controversy may have been because, apart from non-discrimination, US income tax treaties do not cover state taxes. Thus, they do not address any double taxation conflicts that may arise from the interaction of the formulary method used at the state level and the separate accounting method used at the international level.

<sup>(50)</sup> See Footnote 1 in the dissent to *Container Corp. v. Franchise Tax Board*, 463 U.S. 159 (1983).

<sup>(51)</sup> See Weiner (2001) for details on the *Barclays* controversy. The author worked on these issues while an economist in the Office of Tax Analysis at the Treasury Department. See also *Barclays Bank PLC v. Franchise Tax Board of California*, 512 U.S. 298 (1994).

<sup>(52)</sup> A key difference between the two cases is that *Container* concerned a US-based parent corporation while *Barclays* concerned a foreign-based parent corporation. In *Container*, the Supreme Court had deferred the issue of whether worldwide unitary combined reporting would be constitutionally acceptable with respect to a foreign-based parent company. See the Advisory Commission on Intergovernmental Relations (1983) for examples of letters from foreign governments objecting to state worldwide combined reporting.

Barclays' aid, deploring worldwide combined reporting in diplomatic notes, amicus briefs and even retaliatory legislation". Nevertheless, the Supreme Court ruled that the states are constitutionally allowed to apply the unitary method to the worldwide operations of a foreign-based company. By the time the Court issued its opinion, however, all of the states had adopted measures that would allow foreign-based (and US-based) unitary groups to limit the scope of the unitary group to US operations. Thus, the controversy had already been effectively resolved and the international opposition to global formulary apportionment essentially vanished.

Although all of the states moved away from mandatory worldwide combination, many of them retained worldwide combination as an option<sup>(53)</sup>. For example, in 1993, the California legislature had proposed making water's edge combined reporting mandatory, but eventually made water's edge reporting optional in response to business interest in preserving the ability to file on a worldwide combined basis.

#### *4.3.2 Treatment of foreign-source income*

The EU water's edge system could either exempt foreign-source income, as under an exemption or territorial system, or it could include the income and provide a tax credit for foreign income taxes paid on that income, as in a credit or worldwide system. Both the exemption and the credit systems have their advantages and disadvantages and an analysis of these issues is beyond the scope of this paper.

The treatment of foreign-source dividends became particularly controversial in the United States in the early 1980s as the states began moving away from worldwide combined reporting to water's edge combined reporting<sup>(54)</sup>. The controversy centered on the difficulties in creating a "competitive balance" between purely domestic enterprises and domestic- and foreign-based multinational enterprises concerning the treatment of intercompany dividend payments.

If the corporate income tax levied at the sub-national level is considered a source-based tax, then foreign-source dividends should be excluded from EU taxable income. As McLure (1986) explains, income that is attributable to a foreign source should not be subject to a source-based corporate income tax. To be consistent with basic income tax principles, if foreign-source dividends are tax exempt, then the expenses related to that income should not be tax deductible. Generally speaking, any expenses used to finance tax exempt income should not be tax deductible.

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<sup>(53)</sup> See McLure and Weiner (2000, pp. 256-66) for a summary of state legislative response's concerning worldwide combined reporting. Expanding the scope of the unitary group to worldwide operations has two effects in a state. On the one hand, total income increases, but on the other hand, the share of income apportioned to the state decreases. The first effect will arise, however, only if foreign operations are profitable. When foreign operations make losses, the state tax liability will be lower under worldwide unitary combination than under domestic unitary combination. Given these offsetting effects, it is not surprising that Weiner (1994) found an ambiguous effect on investment in states that abandoned worldwide unitary combination.

<sup>(54)</sup> Part of the controversy related to whether the apportionment formula included the factors that generated that income. See United States Department of the Treasury (1984) for a detailed discussion.

### 4.3.3 Profit shifting under water's edge reporting

Any system that is limited to income and operations located only within the EU must devise methods to deal with transactions that occur outside the EU. Limiting the system to the EU's territorial boundaries, i.e., the EU water's edge, means that companies with income and operations outside the EU will apply two tax systems: The separate accounts system would determine the division of income between the EU and the rest of the world while the formulary apportionment with group taxation system would distribute the income among the individual Member States. Not only would multinational enterprises have to apply two tax systems, tax authorities would also have to implement and monitor the two systems. Addressing these issues is crucial, since a significant number of transactions by EU-based multinationals occur with non-EU parent companies or subsidiaries.

Preventing improper profit shifting outside of the EU water's edge (EUWE) would likely require maintaining and supplementing the anti-avoidance rules in the company tax laws of the EU Member States. The current rules include restrictions on foreign-source income exemption, earnings stripping rules and anti-avoidance legislation. Subsidiaries that are included in the EUWE group would continue to file tax returns with the non-EU tax authorities with respect to their income arising outside of the EU.

McLure and Weiner (2000) explain that EU water's edge formulary apportionment with group taxation would prevent multinational enterprises from using transfer pricing to shift income to low-tax jurisdictions within the European Union. However, as long as the system is limited to the EU, separate accounting and arm's length pricing would continue to prevail with income and transactions that occurred outside that area.

McIntyre, Mines and Pomp (2001) stress that anti-avoidance rules would be necessary to prevent companies from using foreign holding companies to avoid tax. Application of these rules might bring some foreign source income into the EU water's edge.

Many states have adopted specific anti-avoidance rules to prevent improper income shifting. Some states, for example, apply federal section 482 rules to transactions between entities included in the water's edge group and entities excluded from the water's edge group. Some states may include certain types of foreign income in the water's edge report. For example, water's edge combined reports in California may include a portion of the income and apportionment factors of foreign subsidiaries with subpart F income<sup>(55)</sup>. To combat tax avoidance, operations located in tax havens may also be included within the water's edge report. Montana, for example, requires taxpayers that make a water's edge election to include the income and apportionment factors of any unitary subsidiaries incorporated in certain tax havens. Any taxable income shifted to a tax haven is considered income subject to apportionment.

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<sup>(55)</sup> California's revenue and tax code has encompassed the specific IRC section 482 language since adopting the water's edge provisions effective in 1988 and this language states that the California tax authorities must follow federal rules and regulations pursuant to Section 482 for income years beginning in 1988. See Franchise Tax Board (2002a, 2002b).

## 5. ECONOMIC CONSEQUENCES

This section discusses some of the economic consequences of using a system of formulary apportionment with group taxation, beginning with a review of the empirical and theoretical evidence in the academic literature followed by a discussion of corporate tax planning opportunities and government responses. The section also briefly discusses potential effects of using adjusted value added at origin as an apportionment factor. While many of these empirical results would not arise in a system with a uniform base and formula, the results are presented to help provide insights into what might happen if the EU Member States were to adopt a non-uniform system<sup>(56)</sup>.

### 5.1 *Effects on investment and employment*

In recent years, many states have moved away from the Massachusetts formula toward a formula with a relatively heavy weight on the sales factor. One explanation for this move is that states may have recognized that the traditional formula acts like an implicit excise tax levied on property and payroll. Thus, it may discourage investment and employment in the state.

To avoid this outcome, many states have reduced the weight on the origin-based property and payroll factors in favor of increasing the weight on the destination-based sales factor. Empirical evidence suggests that this strategy stimulates new investment or employment. For example, using state data from 1983 to 1990, Gupta and Hofmann (2003) found that investment in a state fell as the tax burden on capital increased. They defined the tax burden on capital as the product of the tax rate and the weight on the property factor. The authors caution, however, that although the tax policy variables have a statistically significant influence, their economic significance "appears almost negligible", implying that the impact of state corporate income tax policy may be smaller than policy makers expect.

Using a first-difference specification, Weiner (1994) estimated how state changes in the apportionment formula between 1982 and 1990 affected investment spending. She found that states can stimulate additional investment by reducing the weight on the property factor, all else equal. In constructing the relevant state apportionment tax rates, Weiner took into account the tax rate, the factor weight and the availability of federal tax deductibility in each state. Since the apportionment tax rate includes the rate and the weight, a reduction in the weight accompanied by an increase in the rate may have no influence on the apportionment rate. During the 1980s, many states raised the statutory tax rate at the same time that they moved to the double-weighted sales formula. The federal rate also affects the effective state apportionment tax rate. States that allow federal tax deductibility will have a lower effective tax rate relative to states that do not allow the deduction. However, this advantage will diminish as the federal tax rate falls. During the period of analysis, the federal rate fell from 48

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<sup>(56)</sup> McLure (2002b) discusses some problems that arise from the non-uniformity of U.S. state taxes.

percent to 34 percent, meaning that the states that allowed federal deductibility had a tax increase, all else equal, relative to the other states.

Other authors have examined how changes in the formula affect employment. Using panel data from 1978 through 1994, Goolsbee and Maydew (2000) found that states that reduced the weight on the payroll factor experienced significantly greater employment in the manufacturing sector. However, since employment losses in other states offset these employment gains, they concluded that the country as a whole would be better off with a uniform formula than with competing formulae.

Some authors have examined how states respond when other states change their formulae. Omer and Shelley (2001) investigate how subnational competition for mobile business capital, employment and sales leads state governments to engage in an “apportionment” competition with other states. As states experience revenue losses due to the changes in apportionment formulae in competing states, they respond by making their policies conform to those in competing states.

### *Canada*

In a study conducted on a panel of Canadian provincial data, Weiner (1994) examined the effects on a multi-provincial firm’s demand for labor and capital investment in a system that applies a uniform formula but allows provinces to vary tax rates and tax credits. The estimates show that tax policy is highly effective at the provincial level. Provincial reductions in the cost of capital or in the statutory tax rate tend to increase investment. The influence of changes in the cost of capital became particularly noticeable after investment incentives were introduced for the manufacturing sector in the 1970s.

The analysis also showed that the provinces use tax policy to compete with one another for investment. Provinces that reduce the tax burden on manufacturing investment stimulate new investment, holding tax rates and tax credits in competing provinces fixed.

Tax planning also arises within the relatively uniform Canadian formulary apportionment system. Since Canada does not allow consolidation for groups of corporate affiliates, if a company would like to avoid apportioning its income, it could incorporate separate affiliates in each province. Mintz and Smart (2004) test whether corporate affiliates shift income across provinces through strategic lending and borrowing. They find that companies that apportion income are less sensitive to provincial tax rate changes than comparable companies that do not apportion income<sup>(57)</sup>. This result arises because firms are less able to engage in “transfer pricing” to shift income when the company is taxed under formulary apportionment than when the company is taxed on a separate entity basis. Mintz and Smart conclude that if corporate groups do not consolidate, then “a number of tax planning devices are essentially unrestricted for firms that incorporate separately in separate provinces”.

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<sup>(57)</sup> These results hold when inter-jurisdictional tax differences are sufficiently small. Unlike studies using US state data, Mintz and Smart are able to exploit a tax base that differentiates between companies that do business in more than one province and companies that do business in a single province.

In light of this evidence of income shifting, Mintz and Smart suggest that the system of separate entity accounting that allows cross-border income shifting leads governments to compete mainly for financial flows rather than for productive investment in property, plant and equipment. Thus, while governments lose revenue through income shifting by not requiring consolidation, they may tolerate this income shifting due to its offsetting beneficial effects on the location of real investment.

## **5.2 Tax competition, spillovers and efficiency issues**

Apportioning profits according to a factor the firm controls, such as the location of capital, may distort a firm's factor hire decisions. This distortion is in addition to the usual distortion that arises from taxing the return to a factor. The new distortion can be positive or negative, depending on the relationship between the apportionment-adjusted tax rate in any given location and the weighted average apportionment adjusted total tax rate over all locations. Thus, apportionment can effectively create a tax or subsidy to new investment and employment.

### **5.2.1 Tax competition**

Gordon and Wilson (1986) and Sorensen (2003, 2004) consider how formulary apportionment affects inter-jurisdictional tax competition. Gordon and Wilson argue that since jurisdictions do not take into account the beneficial spillover effects of capital reallocation, formulary apportionment will increase tax competition relative to separate accounting. By contrast, Sorensen accounts for both the positive and negative spillover effects and concludes that a domestic tax increase within a formulary apportionment system might lead to negative investment and revenue impacts in the foreign jurisdiction. Since the domestic jurisdiction does not take these negative effects into account, tax rates will be too high under formula apportionment. Thus, formulary apportionment reduces tax competition relative to separate accounting.

Nielsen, Raimondos-Moller and Schejelderup (2001) also examined how formulary apportionment may alter tax competition relative to separate accounting. For example, since tax revenues under separate accounting are vulnerable to profit shifting, governments tend to reduce their tax rates to preserve the tax base. This situation leads to competitive tax rate reductions across jurisdictions. However, if it is costly for a firm to manipulate its transfer prices (e.g., through penalties for mis-stating transfer prices), then tax competition will be reduced. Furthermore, since under these conditions firms have a reduced incentive to manipulate their transfer prices under the separate accounting system, a system of formulary apportionment will increase tax competition.

Pethig and Wagener (2003) examine how the strength of tax competition varies under different formula definitions, assuming that all jurisdictions adopt the same formula. They find that tax competition will be greater the greater the sensitivity of the factors to changes in tax rates. For example, the negative impact is largest under a property formula, followed by a sales formula and then by a payroll formula.



Although, in theory, applying a formula with factors that are relatively insensitive to tax rate changes reduces tax competition, in practice, formulary apportionment may or may not reduce tax competition within the European Union. The amount of tax competition depends on which formula is chosen. Moreover, whether one formula is more or less elastic than another formula depends on the underlying production technologies.

Finally, Pethig and Wagener (2003) suggest that if the apportionment formula does not include capital (property), a tax increase may not necessarily have a stronger impact on domestic investment under formulary apportionment than under separate accounting. As they explain, “It is conceivable that a tax increase leads to an increase in foreign investment when a property-share formula is applied while the same tax increase would lead to a decrease of foreign investment under sales-based apportionment”.

### *5.2.2 Spillover effects*

The spillover effects from a domestic tax rate increase within an apportionment system are ambiguous. Assume that total profits are distributed according to the location of capital (property). On the one hand, since jurisdictions share the tax base, the tax rate increase drives up the average tax rate that applies to both domestic and foreign profits. This increase reduces investment and revenue in all jurisdictions. The positive effect from investment re-allocation offsets this negative effect. The domestic tax rate increase causes the firm to shift its investment out of the higher tax jurisdiction into the lower tax jurisdiction. This investment re-allocation boosts foreign tax revenues. As these two effects offset, the overall impact is ambiguous.

If companies do not re-allocate their investment, however, the spillover effects will be unambiguously negative. Sorensen (2003) presented a case where domestic and foreign investment are equally sensitive to domestic tax rate changes. In this situation, a domestic tax rate increase has no effect on the distribution of investment across locations. Therefore, because the positive spillover effect from the re-allocation of investment does not arise, foreign tax revenue unambiguously falls.

### *5.2.3 The definition of the formula and efficiency issues*

Wellisch (2003) considered the type of formula that a country would prefer. In general, countries would prefer either a formula based on the location of immobile resources, such as labor, as the only apportionment factor or a formula based entirely on destination-based sales. In either case, traditional tax competition does not arise since, by excluding capital (property), neither formula directly affects the competition for mobile capital. In terms of tax incidence, a formula based entirely on labor (either compensation or number of employees) would shift the full burden of the tax to immobile labor (or, more generally, any other immobile factor included in the formula). If the formula includes sales, then the incidence of the tax depends on the sales elasticity. In this case, both local consumers and foreign consumers are likely to bear some portion of the apportioned tax.

This result echoes earlier analysis by McLure (1980, 1981a) that the sales element of the apportionment formula is roughly equivalent to a sales tax that is shifted forward to consumers, while the labor element of the apportionment is roughly equivalent to a payroll tax that is shifted to workers as a form of wage tax. Mieszkowski and Morgan (1984) found that the immobile factors of production, labor and consumption bear the burden of the state corporate income tax. They also found that the state tax drives the return to capital down in the nation as a whole.

Wellisch (2002) examines the type of formula that a firm might prefer. He notes that even though statutory tax rates may increase under a payroll-based formula, multinational firms would prefer a payroll-based formula since the immobile factor, e.g., payroll, bears the tax burden. That preference, moreover, extends to a general preference by multinational firms for formulary apportionment using a labor-based formula over the current system of separate accounting. Wellisch, thus, concludes that even though the effect is not very transparent, the increase in after-tax profit “could become one of the basic benefits to firm owners of switching to a system of formulary apportionment”.

These studies confirm the analysis presented in the US context by Anand and Sansing (2000). They investigated why some states have remained with the equally weighted three-factor formula while others have shifted toward a destination-based sales formula. They find that states prefer an apportionment formula that reflects the relative mobility of the state’s industrial base. The more immobile the factor, the more likely the state will include that factor in its apportionment formula. If a state’s industrial base is relatively immobile, such as in the mining and petroleum industries, the state is more likely to use a formula that places a heavy weight on the relatively immobile factors. By contrast, states that import a large share of the tax base are more likely to shift taxes to firms that sell in the state, regardless of where the firms have located their production. Thus, these states will choose a formula with a relatively heavy weight on destination-based sales (<sup>58</sup>).

Edmiston (2002) investigated how a state responds to the factor choices made in other states. Using an applied general equilibrium analysis, Edmiston finds that regardless of what other states do, each state’s best economic development strategy is to choose a single-factor sales formula. These beneficial may only last for a short-term, however, as companies may re-locate over time or other states may also modify their state formula. If all states move to a single-factor sales formula, then some states are better off while other states are worse off. For this reason, Edmiston suggests that many states would be better off if they had not entered the “strategic apportionment formula” game. However, once one state has made that move, it is in every state’s interest to move to a single-factor formula. Barring any federal action to prohibit such moves, the result will be that all states use a destination-based sales formula.

Returning to the European Union context, Gérard and Weiner (2003) examined another feature of formulary apportionment and group taxation: how uncertainty may affect investment spending and tax competition in a system of consolidated base

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(<sup>58</sup>) The fact that Anand and Sansing (2000) also show that social welfare would be higher under any common formula than under non-uniform formulae highlights the importance of obtaining agreement on the formula regardless of how it is defined.

taxation and formulary apportionment. The uncertainty arises because a firm may not sell all of its output and, since the firm incurs costs even if it does not sell its production, it will then incur losses. With cross-border loss offset, the firm can use these losses to offset profits in other jurisdictions.

In contrast to the separate-entity method, since governments share the global tax base under formulary apportionment, they will be eager to attract foreign investment because that investment partially insures them against revenue losses from negative country-specific shocks. Thus, a switch to formulary apportionment from separate accounting may increase tax competition because additional capital investment creates greater revenue not only when the firm is profitable but also when the firm is unprofitable, as long as the firm is profitable overall. Therefore, once cross-border loss offset is available within a system of separate accounting, replacing that system with formulary apportionment will increase tax competition.

Mintz and Weiner (2003) evaluate the efficiency aspects of moving to formulary apportionment in the European Union. They find that as long as tax rates continue to differ across Member States, economic inefficiencies will exist under formulary apportionment. However, since it is not clear whether the inefficiencies that apportionment introduces are empirically more important than those that it removes, the efficiency gains in moving from the existing systems to an optional formulary apportionment system are unknown.

### **5.3 Tax planning under apportionment**

Although formulary apportionment removes some tax planning opportunities, it does not remove all such opportunities. Using firm-level data from a confidential survey from the IRS Coordinated Examination Program for 1991 to 1995, Gupta and Mills (2003) investigated how multistate companies may exploit cross-state variations in corporate tax practices to reduce their tax burden. As long as the company does not have a taxable presence in every state, it can take advantage of (at least) two multistate tax planning techniques. First, if it is in a state without a sales throwback rule, it can sell into a state where it has no taxable presence and create “nowhere” income. Such sales are not included in the numerator of any state’s sales factor even though the sales are included in the denominator measuring total sales.

Second, if the company is located in a state that does not require unitary combination, it can shelter its income from intangibles by transferring its intangible property to a holding company in a low tax jurisdiction. Under this tax-planning technique, the company transfers intangible assets into a legally separate entity located in a low-tax separate reporting state. The company then pays tax-deductible royalties to the holding company which, in turn, pays low or no taxes on royalty income. As long as the entity is not located in a combined reporting state, this transaction creates no tax liability.

Klassen and Shackelford (1998) focused on how companies in the US and Canada manipulate the location of sales, the “purported primary method of subnational tax avoidance” to reduce their tax burden. They found evidence consistent with

corporations shifting their tax bases to more favorably taxed jurisdictions. Manufacturing companies can strategically structure their shipments to reduce sales reported to states with relatively heavy sales taxation, especially when selling from states that do not have a sales throwback rule.

Some evidence of corporate tax planning is found by inference. For example, the growth in state and local tax practices at accounting firms and the decline in the share of corporate income tax receipts to total tax receipts may provide indirect evidence of the increase in corporate tax planning. On the first point, Gupta and Mills (2003) suggest that the growing importance of state and local tax planning is demonstrated by, for example, the 1,000 percent increase in revenues earned by one accounting firm's state and local tax practice from 1995-2000. On the second point, US Census Bureau data show that corporate income taxes made up 6.3 percent of state tax revenues in 2000 compared with 10.2 percent of state revenues in 1979.

Mazerov (2002) has argued that many state corporate income tax laws are "riddled with loopholes" that allow many large multistate corporations to avoid paying the proper amount of tax. Mazerov charges that the growth in tax planning "has undoubtedly contributed" to the reduced importance of the corporate income tax as a state revenue source. The Multistate Tax Commission (2003a) estimates that corporate tax sheltering reduced state corporate income tax revenues by more than one-third in 2001 <sup>(59)</sup>.

Fox and Luna (2002) identify the shrinking corporate income tax base as the key explanatory factor behind the relative fall in the contribution of the corporate income tax to state tax revenues. They identify four elements causing this shrinkage: cyclical reductions in corporate profits, declines in the federal corporate tax base, state policy changes designed to reduce corporate tax burdens and "more aggressive corporate tax planning". Pomp (1999) also argues that many of the provisions that states adopt to stimulate economic development also facilitate tax planning so that it is mis-leading to ascribe the declines in corporate tax revenues solely to corporate tax planning.

Many states have adopted a double-weighted sales factor formula to encourage economic development. This formula reduces the tax burden on companies that produce in the state but sell out of the state and, therefore, also reduces corporate tax revenues. For example, Smith (2000) reports that Illinois estimated an annual \$63 million revenue loss once the state fully implemented the single-factor sales formula, while New Mexico estimated an annual \$12 million revenue loss from moving to a double-weighted sales factor. Pomp (1999) reported that, in the aggregate, states that have moved toward a formula with a disproportionate weight on the sales factor lose \$500 million in corporate tax revenue each year <sup>(60)</sup>.

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<sup>(59)</sup> The Multistate Tax Commission (2003a) argues that combined reporting states are less vulnerable to tax sheltering than separate entity states. To support this claim, the MTC notes that the median decline in effective corporate income tax rates between 1986 and 1997 was 38 percent for separate entity states compared with just 20 percent for combined reporting states.

<sup>(60)</sup> Pomp based the estimates on phone conversations with revenue analysts in all states whose formula deviates from the equally weighted three-factor formula.

Not all of the reduction in state corporate income tax revenue arises from state policy choices. For example, Governor James McGreevey (2002) of New Jersey blamed the fall in state corporate tax revenues from 15 percent of state tax revenue to about 4 percent on “tax loopholes and accounting gimmicks” that allowed companies to shift their profits. Richard Kaluzny (2003), the Assistant Director of the Office of Revenue and Economic Analysis in New Jersey characterized the corporate business tax as a “voluntary contribution” that had no links to the underlying economics. To close these loopholes, New Jersey enacted a tax reform that, among others, restricted tax deductions for certain payments made to out-of-state related parties.

#### *Holding companies and intangible income shifting*

Companies doing business in states that do not require combined reporting can reduce their tax liabilities by creating an intangible holding company in a state that taxes intangible income at favorable rates, or not at all. To achieve this result, the company transfers its intangible property, say a trademark, to the holding company, which licenses the intangible property back to the parent company in exchange for royalty payments. Most states allow tax deductions for royalty payments and, in most cases, the holding company will pay little or no income taxes on the royalty income. As long as the holding company does not have a taxable presence in the parent company’s state, it will not be subject to that state’s tax on this income.

The same type of strategy applies with loans or any type of tax-deductible payment. For example, the holding company may make a loan to the parent company, which will then deduct the interest payments made to the holding company. These transactions reduce taxable income to the parent company without creating offsetting taxable income to the holding company.

#### **5.4 Government responses**

Many commentators have noted that applying the state tax on a unitary basis combined would eliminate this income shifting technique <sup>(61)</sup>. Since this method includes the income and apportionment factors in the combined report, it prevents companies from reducing taxable income by shifting passive investments to holding companies, whereas in separate-entity states, the subsidiary’s income and factors do not affect the calculations of the parent’s apportionable income and factors. Noting that “modern-day tax planning techniques result in a stealth attack on the tax base”, Pomp (1999) argues that a state that does not require related corporations to file a combined report is “at the mercy of its corporate taxpayers”.

By modifying their corporate structure, such companies may also modify their tax liabilities and state tax revenues. However, Faber (2003) counters that “states that do not require combined returns ... should not complain when corporations choose ... to operate their businesses in more than one legal entity ... the tax consequences that flow from such a corporate structure are a direct consequence of the state’s decision not to require combined returns”.

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<sup>(61)</sup> See, for example, McIntyre, Mines and Pomp (2001) and Mazerov (2002).

Fox and Luna (2002) agree that requiring combined reporting would reduce the tax base loss through holding companies. However, they argue that combined reporting is not a panacea for the state tax problems, as it is difficult to define a unitary business and combined reporting makes the corporate tax more complex. Kaluzny (2003) explains that although mandatory unitary combined reporting is desirable on theoretical grounds, it is difficult to move to the system as a practical matter unless all other states move to the system simultaneously. Such a move is highly unlikely, given the strong business opposition to combined reporting.

As of 2004, sixteen states require combined reporting (See Table 1). Although many states have considered adopted combined reporting, only one state has adopted the method in recent years. Vermont adopted combined reporting effective in 2006.

Given the difficulties in adopting combined reporting to prevent tax avoidance, McIntyre, Mines and Pomp (2001) identify some alternative techniques that states may employ to restrict inappropriate tax planning. For example, states may disallow the transfer of intangible assets to a holding company as lacking a business purpose or lacking economic substance. States may deny deductions for these interest, royalty and similar payments because they are not legitimate business expenses or they are “sham” transactions. They may re-characterize payments to the holding company as capital expenditures or re-characterize the debt instrument as an equity investment and thus transform deductible interest payments to non-deductible dividend payments.

State revenue authorities may also restrict this tax planning opportunity by ruling that an out-of-state company has created a taxable connection with the state through the in-state use of its intangible property. For example, an out of state company that licenses its intangible property to an in-state franchise may be deemed to have ‘property’ in the state when the franchise uses its intangible property in the state. The intangible property creates a taxable connection even though the taxpayer has no physical presence in the state.

Some state courts have determined that the presence of “intangible property” in a state is sufficient to create a taxable nexus with the state. For example, the South Carolina State court ruled that the use of the trademark in South Carolina created a taxable presence for the out of state holding company. The state court ruled that Geoffrey, the Delaware trademark-holding subsidiary of Toys R Us, which had stores in South Carolina, had “purposefully directed its activities toward South Carolina” and that “the minimum connection required by due process is satisfied by the presence of Geoffrey’s intangible property in this State” <sup>(62)</sup>.

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<sup>(62)</sup> See McIntyre, Mines and Pomp (2001). See Hellerstein (1995) for an analysis of this case.

## **5.5 Potential issues under value added at origin**

As the Commission Study (2002, p. 504) suggests, basing the allocation formula on the respective 'value added' in each Member State is an alternative to the apportionment methods used in North America. The Commission suggests that if companies made certain adjustments to the existing VAT data, it might consider using value added as a possible allocation method.

### 5.5.1 Value added at origin

All EU Member States apply a multistage consumption-type value added tax, using the credit invoice method with zero-rating for exports<sup>(63)</sup>. Subject to key adjustments to the calculation used for value added consumption tax purposes, this measure of value added may represent the value created by a company doing business in each Member State<sup>(64)</sup>. These key adjustments would convert the consumption/destination-based measure of value added to an income/origin-based measure of value added. After these adjustments, the measure of value added should indicate the value added in the location of production<sup>(65)</sup>.

To use value added at origin as the apportionment formula, it would be necessary to make two adjustments to the calculations of value added for consumption tax purposes in the European Union. First, the tax base should be adjusted to include exports and to exclude imports. This adjustment would create a measure of value added where the goods are produced rather than where they are consumed.

Second, capital depreciation allowances should replace the expensing of capital expenditures. This adjustment would measure value added on an income basis. This adjustment also would have the practical effect of not creating large changes in value added when a firm undertakes a large, long-term capital investment project<sup>(66)</sup>.

#### *Definition of value added*

Value added measures a firm's business activity in a location. As Musgrave (1984) explains, "income has its source where the factor services which generate that income operate, a concept of value added at origin". In this manner, value added equals the payment made to any factor of production, e.g., labor and capital, used in the

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<sup>(63)</sup> I am grateful to Emil Sunley for his assistance with this section.

<sup>(64)</sup> As Hellerstein and McLure (2004) note, because the EU VAT is based on the credit method, the value added taxes in the EU do not, in fact, calculate value added. As Tait (1988) explains, "The method used [the subtractive-indirect method] never actually calculates the value added; instead, the tax rate is applied to a component of value added (output and inputs) and the resultant tax liabilities are subtracted to get the final net tax payable".

<sup>(65)</sup> See Kenyon (1996) and Ebrill, Keen, Bodin and Summers (2001) for detailed discussions of various issues concerning the calculation of value added.

<sup>(66)</sup> Such an adjustment is not strictly necessary, however. Assuming that the EU chooses to use value added as the apportionment factor, the treatment of capital expenditures in the measure of value added would, presumably form part of the entire discussion of the definition of the common formula and tax base. (Michigan, which has a modified value-added type tax base, for example, allowed complete expensing for capital expenditures until 1997).

production process. Employee compensation equals the payments to labor, while profits, interest and rent are the payments to capital owners.

Value added can be calculated in two equivalent manners: under the subtraction method and under the addition method. Under the subtraction method, value added is the difference between total revenues and the costs of materials used in production. Under the addition method, value added is the sum of payments to all factors of production. These two measures, by definition, must equal the same amount.

Administratively, the addition method may be simpler to implement than the subtraction method since a taxpayer may use figures from its income tax return to calculate value added. The method allows companies to identify each of the individual elements of value added.

### 5.5.2 *Potential economic consequences*

McLure (2002a) explains that using value added at origin as the apportionment factor can be interpreted as combining payroll and the return to capital (inclusive of payments for interest expense) into a single apportionment factor, with each element weighted by its relative importance in production. Thus, a value added at origin formula allocates income to the marketing location solely through the capital and labor used in the marketing location.

Furthermore, as with the traditional formula, a value added at origin formula would act as an implicit tax on whatever was included in the formula. Since labor compensation accounts for about two-thirds of value added, the measure would effectively transform much of the corporate income tax to a labor tax<sup>(67)</sup>. With payroll implicitly weighted by two-thirds and property weighted by one-third, firms may be encouraged to substitute away from the more-heavily taxed labor toward the less-heavily taxed capital, although this effect would depend, among others, upon the relative productivity of the factors<sup>(68)</sup>.

To reduce the relatively high implicit tax on payroll that might arise from apportioning income according to value added at origin, the measure of value added could exclude employee compensation. Value added at origin would then become essentially a measure of the return to capital, where capital would include not only profits, but also payments of dividends, interest, rent and royalties<sup>(69)</sup>.

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<sup>(67)</sup> Compensation accounted for 75 percent of net value added and 66 percent of gross value added for non-financial corporate business in the United States in 2002. See US Government, *Economic Report of the President* (2004). Similar ratios appear in Canada where, in 1995, labor compensation accounted for about 70 percent of business net value added at factor cost. See the study done by Sargent et. al. (1998) for the Technical Committee on Business Taxation.

<sup>(68)</sup> As shown in Weiner (1994), the cross-state variation in payroll and capital apportionment tax rates was not large enough to have a statistically significant impact on relative factor choices. Whether this relationship would hold at the level of EU company tax rates is unknown. A pure value added tax would not necessarily distort the choices between labor and capital.

<sup>(69)</sup> Some economists suggest that labor is not a proper measure of the factor generating profits. Hellerstein and McLure (2004), for example, state that "there is little theoretical reason to include the cost of labor in an apportionment formula, no matter what its conceptual foundation (p. 214)".



However, eliminating compensation from value added raises some practical concerns. First, value added could become negative. In such an instance, alternative means of calculating value added, say taking a multi-year average, would be necessary. Second, it would encourage governments to tinker with the measure of compensation either to increase the share of income apportioned to their location or to make their location more attractive to business <sup>(70)</sup>. Presumably, Member States would be prevented from undertaking this type of “factor manipulation” as part of the agreement to move to the new tax method. Since labor compensation accounts for a substantial share of the value-added base, firms would face strong incentives to locate compensation in tax-favored locations or to minimize compensation attributed to high-tax locations. The EU Member States may need to apply anti-abuse measures to limit these strategies.

Some computational issues arise in calculating adjusted value added at origin from the existing value added calculations. As Westberg (2002) notes, transactions that are taxable for value added consumption tax purposes might not necessarily be taxable for income tax purposes. Moreover, using figures calculated for the consumption-based value added tax might result in companies being subject to taxation in a location where a corporation is not resident and does not have a permanent establishment.

According to Schön (2002), although using value added would eliminate incentives to shift profits through altering the financial structure, it would not eliminate the need for a company to justify its internal transfer prices for related party sales and services. Gérard (2002) argues that consolidated base taxation with apportionment using a value added formula does not rule out transfer pricing strategies or tax competition. The only way to rule out tax shifting strategies is by setting tax rates and the tax base equal.

Certain concerns that arise under the traditional apportionment formula also are likely to arise under the alternative formula. For example, each of the elements that makes up value added is firm specific, suggesting that the firm will have some control over where to assign those elements. Similar difficulties that arise in locating intangible income under the traditional formulaary apportionment methods would arise in determining the location of dividend, interest and royalty payments that would be included in a value added formula.

Hellerstein and McLure (2004) emphasize that using value added at origin creates an incentive to manipulate transfer prices that does not exist when value added is measured on a destination basis. Thus, this measure re-introduces the need to monitor transfer prices. In addition, they stress the importance of finding accurate transfer prices for intangible assets, such as intellectual property, to prevent shifting value added out of high-tax locations. In light of these issues, they conclude that the transfer pricing problem is “the Achilles heel” of the proposal to use value added at origin to apportion income <sup>(71)</sup>.

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<sup>(70)</sup> Knittel (1998) provides evidence from Michigan that the legislature altered the definition of compensation for various purposes.

<sup>(71)</sup> This language echoes that used by Jerome Hellerstein (1982), Walter’s father, who described the inability to establish fair arm’s length prices for goods transferred, or basic operational services

Concern about the relative distribution of income to the marketing and manufacturing states is another issue that may affect the use of value added at origin as the sole apportionment factor. Value added at origin attributes income to the location of the factors of production, i.e., property and payroll. However, as explained earlier, there are strong arguments in favor of using a formula that allocates some income to the marketing location. Except for the US states that use a single-factor gross receipts formula, the formulae in the US states and the Canadian provinces take both demand and supply into account.

As Musgrave (1984) explains, pursuing a “supply-demand approach which holds that market value is created through the interplay of supply and demand” is one way to reach interjurisdictional equity <sup>(72)</sup>. Under this approach, the formula would distribute the tax base according to the locations where value is added and where the product is used. To take into consideration both the manufacturing and marketing states with a formula using value added at origin as a factor, the formula should also include gross receipts at destination as a factor <sup>(73)</sup>.

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rendered, between controlled branches or subsidiaries of an enterprise as the “Achilles heel” of separate accounting.

<sup>(72)</sup> Musgrave further explains that this approach goes beyond the claim to profits attributed to capital and labor in the location, which the supply approach covers. Attributing some income to the location of demand, Musgrave argues (p. 234), “is the only valid rationale for the inclusion of a sales factor in the formula”. If demand creates value, then the location of sales would be entitled to a share of the profits. Whether the location of demand should be entitled to a share of the profits would be a matter for those agreeing to use a formula to allocate profits to decide.

<sup>(73)</sup> Introducing destination-based sales into the apportionment process also raises issues concerning the location of sales, as discussed earlier.

## 6. ASSESSMENT

This section distills the main conclusions from the foregoing analysis and presents an overall assessment of formulary apportionment and consolidated base taxation in the European Union.

Simplicity and practicality are the guiding principles that shape the basic contours of a system of formulary apportionment with group taxation system. While this evaluation of the experiences in the United States and Canada provides many insights that can assist the EU as it designs an apportionment system, given the different political structures, there are limits to how much guidance that experience may provide to the EU Member States.

Perhaps the most important lesson to learn from the US states is the importance of escaping the complications that arise when jurisdictions independently set 'cross-border' tax policy. Specifically, the EU should take steps to avoid going down the path toward chaos. As McLure and Weiner (2000) suggested: "Formula apportionment in the US: Chaos to be avoided". Hellerstein and McLure (2004) expressed a similar sentiment: "'Don't do what we do' summarizes our overall appraisal of what the EU can learn from the U.S. state experience with taxation based on formulary apportionment".

In this regard, the experience in the Canadian provinces demonstrates the benefits of uniformity and, therefore, provides a good model for the EU to study. As Weiner (1991) noted in a paper discussing the use of formulary apportionment in the European Community: "These results suggest that the Canadian system provides an instructive case study to explore the implications of apportionment for the European Community... the U.S. model provides a good example of what the Europeans should not do" <sup>(74)</sup>.

In contrast to the US experience, the Canadian federal and provincial governments worked together to gain agreement on the outlines of the apportionment formula and tax base at the time that the provinces implemented the allocation system. As Mintz (2004) explains, the development of the Canadian corporate tax system reflects various competing objectives and has developed a relatively good balance taking into account both federal and provincial concerns.

Thus, the importance of gaining agreement among the EU Member States on a common tax base and common formula is a crucial insight from the experience in the United States and Canada. Reaching agreement on a common base and common formula, however, does not mean that Member State's lose their autonomy in setting local tax policy. As shown in Canada, once the common tax base is distributed using a

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<sup>(74)</sup> Weiner (1991) suggested the following: a single apportionment formula, a European income base, tax incentives offered after income has been apportioned to Member States and tax rates set by the Member States.

common formula, national tax authorities may create a favorable investment climate by freely setting local tax rates and offering tax credits to the post-apportionment tax base <sup>(75)</sup>.

### **6.1 The apportionment formula and factor weights**

Designing a formula that produces a reasonably fair distribution of income across the EU Member States is critical. It is also important that the formula be administratively feasible. With these issues in mind, this section discusses a potential apportionment formula for the EU.

The apportionment formula for the EU should use factors that relate to the firm's own factors. Although a formula that distributes income across the Member States according to macroeconomic factors would eliminate the distortions that arise with firm-specific factors, the absence of a link between a firm's profits and its income tax liability is a drawback to a macro-based formula.

These firm-specific factors should encompass the traditional property, payroll and gross receipts factors. Property and payroll would be measured at origin and gross receipts at destination. Balancing the interests of the manufacturing the marketing locations is an important issue in choosing apportionment factors. The decades of experience in the US and Canada with these factors can help guide the EU in choosing its formula and defining the apportionment factors.

If the EU chooses the three-factor formula, the property and payroll factors should each be weighted by one-fourth and the gross receipts factor should be weighted by one-half. Alternatively, the Canadian formula that includes equally-weighted payroll and gross receipts is simple and practical and maintains the balance between the producing and marketing locations. Unlike the first formula described, this formula, however, does not maintain a balance between the weights applied to property and payroll.

#### *Intangibles*

The treatment of intangible income and property poses particularly difficult issues and, at this time, no broadly acceptable approach has been offered for dealing with intangibles. Thus, this section merely offers some preliminary thoughts for reflection.

Property. Because of the difficulties that arise not only in valuing intangibles but also in determining their "location", it may be most practical at this time to exclude intangible property from the formula (with exceptions for certain industries, such as financial services). While there are drawbacks to this approach, the advantages of excluding intangible property appear sufficiently great at this time to justify excluding them. McLure (1997) may have provided the best justification for excluding

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<sup>(75)</sup> In offering tax credits, EU Member States must comply with any restrictions concerning state aid.

intangibles from the property factor: “if one wants to determine the location, as well as the value of intangible assets, one is likely to be forced into analysis similar to that under the separate accounting standard”.

If intangible property is included in the property factor, then the transfer pricing rules applied for determining ownership and for valuing intangible property at the international level would be imported into the apportionment system. Such an outcome might negate many of the benefits of the apportionment system.

Receipts. Excluding certain intangible receipts that do not have a readily identifiable location from the gross receipts factor also seems to be a practical suggestion to consider at this time. Thus, if the intangible receipts cannot be identified with any particular income producing activity, then they can be excluded entirely from the gross receipts factor.

As with finding a value for intangible property, a location can be found for intangible receipts. For example, gross receipts from the sale, licensing or use of intangible personal property could be assigned to a location if the income producing activity that generated the receipts occurs in the location. If that activity occurred in more than one location, the receipts could be divided according to the share of activity in each location.

Excluding intangible property and receipts does not mean that intangibles are not represented in the tax system. The effect of excluding intangible property and income from the formula is to distribute the receipts according to the location of gross receipts as well as to the employees and capital that developed the intangible property. This process recognizes that the receipts generated from intangibles belong to the entire business, not to any specific location.

## **6.2 Sector-specific formulae**

The general property, payroll and gross receipts formula is appropriate for manufacturing and mercantile industries. A different formula, however, may be appropriate for other industries. Sector-specific formulae may more accurately represent the factors that generate income for these diverse industries than does a general formula. Thus, the practices in the US states and Canadian provinces of providing sector-specific formulae for a few industries seems reasonable.

However, using multiple formulae has its drawbacks. For example, enterprises with multiple lines of business have to determine which income and which factors belonged to which business. This process could reintroduce the transfer pricing issue. The greater the number of divisions drawn between businesses, the greater the need to preserve existing rules to maintain that separation among businesses.

Taxpayers should have the opportunity to request a different formula if the standard formula does not fairly represent their activity in a location. This flexibility would allow using specific factors for that industry.

### **6.3 The group**

Group taxation is essential to reflect the nature of EU multinational businesses and forms part of the Commission's long-term strategy to provide EU companies the option to use a consolidated tax base for their EU-wide activities. Providing group taxation will also help restrict income-shifting problems like those that arise in the US states that tax on a separate entity basis and in the Canadian provinces where consolidation is prohibited.

The company group can be defined in many ways, each of which attempts to address a certain feature of group taxation. If the notion of legal control were followed, the group would include entities that met a specific legal degree of ownership, say more than 50 percent. If economic control and interdependence were followed, the group could include entities that shared certain economic attributes, such as a substantial flow of goods or services.

At this point, the consolidated group should be defined according to an ownership test. To be consistent with EU practices, an appropriate threshold could be one that paralleled thresholds used in other EU company tax areas. Majority-ownership appears important as it assumes control over the entity. Using this threshold also would prevent including an entity in more than one consolidated group. (The treatment of joint ventures would need to be addressed).

Although the unitary business concept has its complications, there are good arguments to consider in the future the possibility of extending the group definition beyond ownership. Taking into account the substance of the economic relationship among related companies would also help limit the ability of companies to manipulate their corporate structure for tax purposes. Such a step would only make sense, however, if a reasonable definition of a unitary business could be agreed.

### **6.4 Taxable presence and the taxable base**

To benefit from international experience in this area, the EU should follow developments in the permanent establishment area to determine whether an entity has a sufficient taxable presence in the state to become subject to taxation in the state. The Canadian provinces apply this procedure within their formulary allocation system. However, as this notion currently requires a physical presence, it may not adequately deal with the new technologies that have arisen. Efforts at the Organization for Economic Cooperation and Development could help the EU refine this notion for its purposes.

Many options exist for defining the taxable base. The US states generally distinguish between apportionable and non-apportionable income to meet constitutional restraints on their taxation powers. States may not tax income or operations that do not meet constitutionally required levels of connection with the state. Much of the US state litigation has centered on evaluating exactly what type and degree of connection a company must have with a state to create a taxable link. Such constitutional restrictions, however, would not apply at the international level.

A simple solution is to distribute all income by formula. In doing so, the EU would eliminate the distinction between income distributed by formula and income assigned to a particular location.

Although it is a simple solution, in many cases, certain items of income may have no relationship to the ongoing trade or business and should not be included in the tax base that is distributed across all locations. For example, the income from the sale of property that had no connection with the business might be assigned to a particular location instead of being apportioned.

In such cases, provisions in bilateral tax treaties and the OECD Model Convention could be followed to distinguish between business profits and specific items of income. Business profits are apportioned across the Member States while “non-business profits” (i.e., specific items of income) would be allocated to a particular Member State. Many countries have extensive experience in applying different tax rules to different categories of income, depending on the relationship between those items of income and the entity’s business.

## **6.5 Territorial scope**

The scope of the consolidated system with formulary apportionment should be limited to the European Union’s territorial borders. (This notion has been referred to as the EU water’s edge).

Limiting the territorial scope to the EU’s territorial borders requires maintaining the current international tax rules with respect to income and activities outside of the EU’s territorial borders. The source of income needs to be determined and arm’s length pricing continues to hold for all related companies located outside the EU boundaries.

## **6.6 Compliance issues**

Simplicity and practicality are the key elements underlining the assessment of formulary apportionment in the EU. These elements also may help reduce compliance costs.

Many compliance cost studies show that compliance costs are greater under a non-uniform system than under a uniform system. However, what they do not show is whether compliance costs are lower under separate accounting or under formulary apportionment. The relative amount of compliance costs depends, among other issues, on the definition of each system and the amount of uniformity in the system. For example, all else equal, compliance costs would likely be lower regardless of which system is used if all Member States used the same tax base. However, even if tax bases were uniform, both separate accounting and formulary apportionment require potentially complex anti-abuse measures and both create costs associated with tax planning, tax compliance and tax administration.

To the extent that the EU maintains two systems, formulary apportionment within the EU and arm's length pricing for non-EU matters, compliance costs may rise relative to the current system. Since the system will be limited to the EU's territorial boundaries, tax administrators must adopt measures to prevent the improper shifting of income to tax havens located outside of the European Union. Likewise, although resources devoted to implementing the transfer pricing system would likely decrease as many internal EU transactions would no longer require finding transfer prices, tax authorities would have to maintain expertise in the two different tax systems.

As earlier indicated, the Commission proposed making the consolidated base tax system with formulary apportionment optional. Although making the system optional may have many political advantages, it may also introduce some economic disadvantages. As Mintz (2002) highlights, allowing companies the option to choose their tax method "would substantially erode efficiency gains from harmonization since companies would have greater opportunities to engage in tax arbitrage domestically, not just with respect to cross-border transactions".

### **6.7 *International consensus***

The cooperative efforts to develop and apply separate accounting and arm's length pricing method in a consistent manner at the international level demonstrate the importance of consensus. For this reason, before the EU introduces a formulary-based system, it should gain agreement among a sufficient number of Member States to reach uniformity in the group definition, tax base and apportionment formula. The availability of enhanced cooperation should enhance the ability of the EU to reach this critical number.

Since the EU plans to limit the apportionment system to the EU's territorial limits, it may consider looking to the experience in international organizations, such as the OECD, for guidance in implementing the arm's length pricing system for transactions that fall outside the EU. As noted during the US Treasury Department (1996) conference on implementing formulary apportionment at the international level, international consensus is vital to the smooth operation of any multinational tax system. Moreover, cooperation seems a reasonable path to take when introducing a new method for taxing companies in the EU.

### **6.8 *Overall evaluation***

As economic integration continues within the European Union, formulary apportionment with group taxation becomes more and more practical, while separate accounting with arm's length pricing seems less and less feasible. As EU companies increasingly organize their operations along business lines rather than along geographic lines, there is less justification for organizing company taxation at the Member State level and more justification for organizing company taxation at the EU level. Formulary apportionment with group taxation within the European Union appears to be the type of tax system that best reflects the increasingly integrated economic situation in the Single Market.



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