

Weiner, Joann

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## Formulary apportionment and the future of company taxation in the European Union : company taxation and the internal market

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## FORMULARY APPORTIONMENT AND THE FUTURE OF COMPANY TAXATION IN THE EUROPEAN UNION

JOANN MARTENS WEINER\*

In October 2001, the European Commission set forth a strategy for future company tax policy in the European Union that endorses "the fundamental concept of a common company taxation system in the form of a consolidated corporate tax base for the Internal Market." The Commission makes the case that in the long run companies should be able to achieve a consolidated corporate tax base with cross-border loss relief under a single set of tax rules for their EU activities.<sup>1</sup> Each of the four methods presented generally provides for consolidated taxation with formulary apportionment.

The Commission will present its strategy at its "European conference on company taxation" being held in Brussels on 29-30 April.<sup>2</sup> Along with a discussion of the approaches, the conference will address the question: "Is formulary apportionment a way forward for the EU?" Thus, the possibility that the European Union might adopt formulary

apportionment is now a central element in the new debate over future EU company tax policy. This endorsement of a company tax system that uses formulary apportionment is a bold step for the European Union, as according to Albert Raedler, a member of the Ruding Committee, "just a decade ago under Ruding, the word apportionment was still a devil's word."<sup>3</sup>

This paper is composed of two parts. The first part compares the distinguishing features of two of the Commission's proposals. The second part evaluates the formulary apportionment system. It explains the theory behind formulary apportionment and then presents some empirical evidence from North America on how apportionment affects business investment and employment.<sup>4</sup> The paper also identifies some additional issues that should be resolved before the EU adopts a consolidated tax system that requires using formulary apportionment.

### The commissions's proposals

#### *Tax obstacles in the European Union*

The Study identifies the main tax obstacles to cross-border economic activity as the requirement to allocate profits on an arm's length basis (i.e., to apply transfer prices), the imposition of taxes on cross-border income payments, the lack of cross-border loss offsetting, and the taxes imposed on group restructuring. While some of these tax obstacles can be resolved with specific actions, such as broadening the parent-subsidiary directive, the Study argues that the existence of 15 separate tax systems, each of which requires companies to calculate their income for each country in which they operate, is the chief cause of these tax obstacles.

\* The author is a lecturer at the Facultés Universitaires Saint-Louis in Brussels. Before moving to Brussels, Dr. Weiner was an economist in the Office of Tax Analysis at the U.S. Department of the Treasury. e-mail: weiner5@attglobal.net. tel: (32) (02) 375.40.88. An earlier version of this paper was presented at the Ifo Institute, Munich, March 19, 2002. I would like to thank Hans-Werner Sinn and Doina Radulescu for helpful comments on the earlier version of this paper.

<sup>1</sup> See Commission of the European Communities "Towards an Internal Market without tax obstacles. A strategy for providing companies with a consolidated corporate tax base for their EU-wide activities," COM(2001) 582 final and Commission staff working paper "Company Taxation in the Internal Market" SEC (2001) 1681, Brussels, 23 October 2001. This paper will collectively refer to these two documents as the Study. For a summary of these documents, see Weiner, "EU Commission Study on Company Taxation and the Internal Market Considers Comprehensive Company Tax Reform," Tax Notes' Int'l, 29 October 2001, pp. 423-425 and 511-518.

<sup>2</sup> For details, see the conference website created by the Taxation and Customs Directorate (TAXUD). See [http://europa.eu.int/comm/taxation\\_customs/taxation/company\\_tax/conference.htm](http://europa.eu.int/comm/taxation_customs/taxation/company_tax/conference.htm).

<sup>3</sup> See "eForum: Company Taxation in the European Union," Tax Notes Int'l, 14 January 2002, pp. 153-174. The Ruding Committee did not evaluate formulary apportionment as a possible company tax system, but it did reject the use of a predetermined formula to apportion income as a common system for the European Community in the foreseeable future.

<sup>4</sup> For an analysis of issues concerning the European Union, see McLure and Weiner (2000).

Formulary  
apportionment  
is a central element  
in the new debate  
over tax reform

The Commission recognizes that once tax bases are consolidated across the European Union, it is necessary to allocate that income back to the member states for taxation at the local rate. Indeed, the Commission notes that any comprehensive approach must justify two steps: First, the decision to create a common EU tax base, and, second, to allocate that tax base to the Member States. The Commission believes that if agreement were reached to adopt a comprehensive approach, then the Member States would simultaneously reach agreement on the apportionment formula, factors, and definitions.<sup>5</sup>

### *What is formulary apportionment?*

In contrast to a tax system based on separate accounting and arm's length pricing, under formulary apportionment, companies do not attempt to calculate the income of the affiliated entities of the corporate group. Instead, the corporate group first combines (or, consolidates) the income of each of its operatives into a single measure of taxable income. The group then uses a formula to apportion the income to the various locations where the group conducts its business.<sup>6</sup> This formula is generally the sharebased on of business activity in a location to the total business activity in all locations.

As used in North America, the formulary apportionment method incorporates the notion that the factors employed by a multi-jurisdictional business generate its income. Thus, the apportionment formula includes a combination of the shares of gross receipts, and sales in each location to their totals across all locations.

It is not necessary for the formula to apportion the tax base according to firm-specific factors; it could be based on industry or other broad economic data. With these latter formulae, however, the method will no longer attribute income to the location where it was earned, and the result will deviate from the general notion underlying formulary apportionment that it attempts to assign income to the locations where it was earned.

### *The Commission's four proposed methods*

The Study presented four comprehensive methods that may achieve its long-term goal: Home State Taxation (HST), Common Consolidated Base Taxation (CCBT); a European Union Corporate Income Tax (EUCIT); and a compulsory harmonized tax base. Each system has its own benefits and drawbacks – some options may be more politically feasible than others, while others may be more economically or administratively practical than others. However, each of the methods generally provides a way for EU companies to calculate

Under formulary apportionment, the corporate group consolidates its income and allocates it to the various locations according to a formula

### **Box 1**

#### **Summary of Options for Obtaining Consolidated Base Taxation in the European Union**

##### **1. Home State Taxation**

Under Home State Taxation, EU companies would have the option of computing their income for their operations located in various Member States participating in the home state tax system according to the company income tax rules of the member state where their headquarters are located (the "home" state). Under the notion of "mutual recognition" a member state hosting investment from another member state participating in the system would agree to accept the tax rules of the home state for determining the tax base in the host member state. A different set of tax rules would apply in the EU depending on the tax base in each home state. Home state tax authorities would administer their particular home state tax system. Profits would be allocated to member states participating in the system using a common formula, where they would be taxed at local rates. Profits would be determined under current national systems for non-participating Member States.

##### **2. Common Consolidated Base Taxation**

Under Common Consolidated Base Taxation, EU companies would have the option of calculating their income for their operations located in various Member States according to a new common EU tax base. This EU tax base would operate in parallel with existing national rules. The same set of tax rules would apply throughout the EU. The member state where the company was headquartered would administer the common EU tax base. Profits would be allocated to all member states using a common formula, where they would be taxed at local rates.

##### **3. European Union Company Income Tax**

Under a European Union Company Income Tax, a new EU tax base would be developed and would operate in parallel with existing national rules. It would be optional for companies. In one form, this system could create a "federal" EU tax and a single tax authority could administer the tax, with revenues funding EU institutions and activities, or, the member states could administer the EU company income tax.

##### **4. A Compulsory 'Harmonized Tax Base'**

Under this approach, a single EU tax base and tax code would replace national company tax systems. This EU tax system would apply to all enterprises in all Member States and the national company tax systems would disappear. Member states could administer the tax so there would be no need to create an EU-level tax authority.

<sup>5</sup> See Chapter 17 "Revenue Allocation: The Different Methods" in the Commission Working Paper for details.

<sup>6</sup> This description is extremely simplified and actual practices vary substantially from what is described here. In addition, although the terms 'combination' and 'consolidation' are often used interchangeably, they are not identical concepts. They are sufficiently similar for purposes of this paper to be treated as such. For an exhaustive discussion of the detailed variations in the formulary apportionment system as used in the states and provinces, see Weiner (1994, 1999).

their EU group income on an EU-wide basis. Except for certain variations of EUCIT, each method also uses a formula to allocate the tax base to the member states. Box 1 summarizes the four methods.

*Analysis of common consolidated base taxation and home state taxation*

The Commission Study considers the first two options, home state taxation (HST) and common consolidated base taxation (CCBT), as the most promising of the four methods presented. Both methods create a common tax base, either for the entire EU (CCBT) or for a subset of member states (HST). Both methods are optional.

Both methods allocate group profits to each jurisdiction using a common formula with the local tax paid according to the local tax rate. Thus, both CCBT and HST face the same difficulties that arise when using a formula to apportion income; these issues are discussed later.

However, there is a key difference between HST and CCBT that should be recognized. Under CCBT, a multinational company combines its total profits using a commonly measured EU tax base in all of the member states where it does business. Therefore, regardless of where the parent company is resident, the same tax rules apply for all operations in all EU member states.<sup>7</sup>

Both, home state taxation and consolidated base taxation create a common tax base but under different rules

By contrast, under HST, the tax rules that apply for any consolidated group in any given member state depend on the residence of the parent company. This key difference between CCBT and HST arises from a basic feature of HST: Under HST, a multinational firm applies its home state tax base to combine the operations of its activities located in member states that participate in the HST system.

Member States are not required to participate in HST, and, in fact, some member states may not be eligible to participate. The Com-

mission Study notes that it is generally accepted that home state taxation would initially be confined to a group of Member States. As no two tax bases in the EU are identical, 15 separate tax bases would continue to exist in the EU. Since the effective taxation of operations located in any given member state depends on the home state of its parent company, effective tax rates will continue to vary across and within the EU member states under HST.<sup>8</sup>

*Illustration of home state taxation*

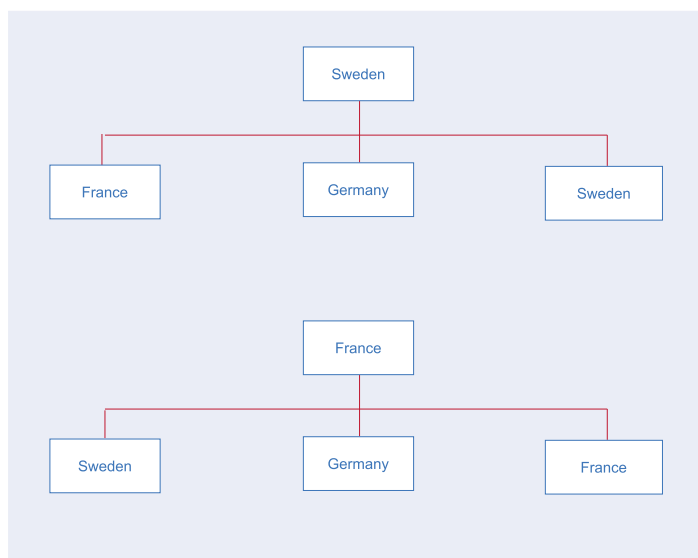
The potential ability to apply one tax base to the entire group's operations is an attractive feature of HST. This section illustrates some features of HST, including the concept of mutual recognition and the potential impact if not all Member States adopt HST.

The top panel of Diagram 1 illustrates the basic situation. Under home state taxation, a company with its headquarters in Sweden, for example, could consolidate its operations (both branches and subsidiaries) in France, Germany and Sweden using

<sup>8</sup> Further analysis could help determine by how much these rates would vary. Simulations conducted for the Commission study showed that HST would increase the variation in effective tax rates by more than 30 percent and move further away from both capital import and capital export neutrality. The Study noted, however, that many features of HST could not be modeled in these calculations. By contrast, simulations of CBT showed almost no effect on the variation in effective tax rates (see tables 29 and 30 in Part II, chapter 7 "The impact of hypothetical policy scenarios in the EU").

**Diagram 1**

HOME STATE TAXATION: MUTUAL RECOGNITION



<sup>7</sup> This point does not apply for companies that do not use the method.

one set of tax rules, those of Sweden. Likewise, as shown in the bottom panel of Diagram 1, a French parent company could consolidate its operations in Sweden, Germany, and France using France's tax rules.

The concept of 'mutual recognition' is fundamental to home state taxation. Under this notion, France, for example, will accept the Swedish rules for determining the tax base of operations with a Swedish parent located in France while Sweden will recognize French rules for calculating the tax base of operations with a French parent located in Sweden. For mutual recognition to function properly, the home state tax systems must be similar.

One implication that arises under HST, when compared with CCBT, is that the taxation of any given company located in a member state hinges on the tax rules in the *residence* of the parent company.<sup>9</sup> For example, Diagram 1 shows that the tax base of the German business with a Swedish parent and the tax base of the German business with a French parent are not identical, simply because their parent companies are located in different countries.

The tax rules will also change if a business is sold to another home state group. For example, if the Swedish parent sells its German business to the French parent, the tax rules that apply for that German business would switch from the Swedish rules to the French rules. In addition, a transaction between the two German businesses with different parents becomes a cross-border transaction.

To avoid drastic changes in the tax burden due to these decisions, and to avoid creating a tax obstacle to cross-border activity, it is essential under HST that the tax bases in participating member states be similar enough so that these changes have no significant

impact on business decisions. In such a situation, for example, France will accept Sweden's tax rules and vice versa.

Determining how similar EU tax bases are is, therefore, an initial issue to consider in evaluating HST. The Commission Study presented a number of structural elements of member state tax systems that address this issue. While certain groups of member states have similar approaches to certain elements, the Study found no group of member states that consistently formed a group nor any group or individual member state that was always outside the group.<sup>10</sup> Thus, under current rules, no clear home state group emerges.

While there may not be any obvious initial HST group, it is possible to consider which member states might not be eligible to participate. The HST system imposes two restrictions on the ability to obtain consolidated taxation of EU-wide activities: First, tax bases must be similar in member states where operations are located; and, second, the par-

It is essential under HST that the tax bases of the member states are similar

<sup>10</sup> All descriptions of member states tax systems are drawn from the Commission Study. All but three EU member states, Belgium, Greece, and Italy, allow some form of consolidation under domestic law. Among the other 12 member states, the threshold ownership requirements for consolidation range from 51 percent in Germany to 100 percent in Denmark. Thus, some operations might be excluded if they do not meet the ownership requirements.

**EU Member State Statutory Corporate Tax Rate,  
Effective Average Tax Rate And Effective Marginal Tax Rate, 2001**

	Corporate tax rate	Effective average tax rate (EATR)	Effective marginal tax rate (EMTR)
Austria	34	27.9	12.6
Belgium	40.17	34.5	22.4
Denmark	30.0	27.3	21.6
Finland	39.0	26.6	21.3
France	36.43	34.7	31.8
Germany	39.35	34.9	26.1
Greece	37.5	28.0	16.9
Ireland	10	10.5	11.7
Italy	40.25	27.6	- 15.9
Luxembourg	37.45	32.2	20.7
Netherlands	35.0	31.0	22.7
Portugal	35.2	37.0	21.0
Spain	35.0	31.0	22.8
Sweden	28	22.9	14.3
UK	30.0	28.3	24.8

Source: European Commission Staff Working Paper (2001b) "Company taxation in the Internal Market," SEC(2001) 1681, 23 October 2001.

Italy operates a dual income tax system that splits the profits tax base into two components that are taxed at different rates. Broadly, the ordinary return is taxed at 19% while the residual profits is taxed at 37%. Marginal investments, which by definition do not earn residual profit, would be taxed at the lower rate. When the EMTR is calculated (average of debt, equity and retained earnings finance) it becomes negative since the negative EMTR for debt financing outweighs positive EMTRs for other two sources of finance. See Table 7 of Quantitative Analysis.

<sup>9</sup> The same situation arises now, where the effective tax burden of subsidiaries depends on the location of the parent company. See the Commission study, chapter 7. However, it should be noted that the sources of these variations under the current situation are not the same as with HST.

ent company must be able to apply the home state rules for its foreign operations.

Consider the Commission Study, which presents various calculations showing the tax burden across the member states. A glance at these calculations (see Table) shows that with a negative effective marginal tax rate, the tax system in Italy with its “dual income” appears to be substantially different from the tax bases in other member states. Thus, its tax base might not be sufficiently similar to be recognized by the HST participants.

Diagram 2 illustrates the impact of excluding a member state from the HST group. As shown in the top panel, suppose that in addition to its operations in Sweden, Germany and France, the French headquarters company has operations in Italy. If Italy does not participate in the HST system, these operations will not be included in the HST group, and the French parent company will need to use the Italian tax system (and arm’s length pricing) to determine the income of its Italian operations. [This possibility is illustrated by crossing out Italy from the group and placing a “?” in the box to reflect the uncertainty over this result.] More generally, under HST, a company may have to comply with many different sets of tax rules within the EU, rather than just a single set of tax rules.

The second point above is also critical. Companies with their headquarters in a participating member state would adopt that member state’s domestic tax system and apply it to their activities located in

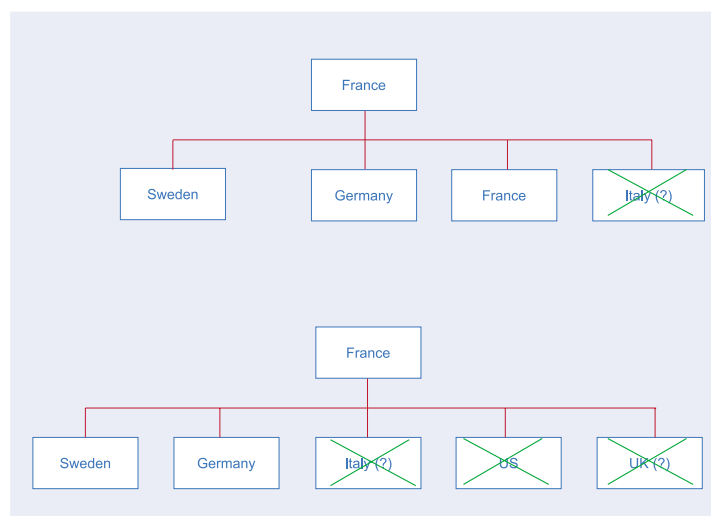
other participating member states. However, not all member states offer group taxation. Thus, countries that do not offer group taxation may not be allowed to participate in HST. This restriction would eliminate Belgium, Greece, and Italy from HST.

The bottom panel of Diagram 2 illustrates a further complication under HST. Consider a French parent with subsidiaries in Sweden, Germany, Italy, the UK, and the US. First, the Italian operations are already excluded as explained above. Second, as the HST system only applies within the EU, all non-EU operations are automatically excluded (the system will apply on an EU water’s edge, or EUWE, basis.) The US operations fall under US rules and must be calculated under separate accounting.

The exclusion of non-EU operations has important implications. Many EU companies will need to employ arm’s length pricing since many EU multinationals have operations outside of the EU. A glance at EU direct investment data illustrates this situation.<sup>11</sup> Foreign direct investment outflows outside of the EU as a share of EU GDP have risen from 0.5 percent of total GDP in 1992 to more than 3.2 percent of total GDP in 1999.<sup>12</sup> Companies with non-EU operations would continue to use arm’s separate accounting along with formulary apportionment. Tax authorities would need to administer both methods. This statement would remain true for EU operations, as well, since some companies may choose to remain under the current system.

**Diagram 2**

HOME STATE TAXATION: EXCLUDING OPERATIONS



Finally, although it is not possible to know which countries might adopt HST, based on the country’s expressed opposition toward giving up sovereignty in direct tax matters, it seems likely that the United Kingdom would not participate in HST. Thus, any HST group with UK operations would, at least initially, have to use the UK tax base and arm’s length pricing for trans-

<sup>11</sup> See European Union foreign direct investment yearbook 2000.

<sup>12</sup> It also is a problem for CCBT, as it is limited to the EUWE as well. Extending the system outside of the EU creates a host of new problems regarding the need to attain the agreement of non-EU countries. Thus, for practical purposes, the Commission considers only EU operations.

actions with UK operations. This issue could prove particularly troublesome for an HST group, as UK operations play a large role in EU businesses. The UK is the largest EU destination for cross-border direct investment from EU countries. In recent years, one in four mergers in the EU, for example, involves a UK company.

The bottom panel in Diagram 2 illustrates the result from this analysis. The home state group with the French parent includes only the operations in France, Sweden, and Germany. Operations in the US, the UK, and Italy are excluded from the group, and they continue to use separate accounting and arm's length pricing.

### Summary

This discussion of the HST method has identified some issues that complicate the application of HST when compared to CCBT. While some of these issues also arise under CCBT, their importance is magnified under HST, as HST specifically allows a proliferation of tax bases in the EU. Moreover, additional ongoing difficulties e.g., relating to corporate headquarters' location, arise with a partial solution such as HST.

Although HST faces many complications, it should be recognized that implementing a common consolidated EU tax base faces its own problems. The difficulty in defining a common tax base – which is a prerequisite for having CCBT – should not be underestimated. For decades, the EU has tried and failed, to reach agreement on a “harmonized” tax base.

Space limitations prevent describing in detail additional issues. Thus, this section merely lists a few other issues that arise under both HST and CCBT: Both options share difficulties concerning:

- The treatment of intangible income;
- Determining the criteria for consolidation and how to consolidate partially-owned entities;
- Defining the common formula;
- Measuring the factors included in the formula;
- The treatment of foreign-source income;
- Maintaining agreement among member states on the formula; and
- Administering the arm's length system and the formulary apportionment system simultaneously.

The paper now turns to some of the issues that relate to formulary apportionment.

### *The Commission's perspective – the allocation method is the key issue*

As identified above, there are substantial differences among the comprehensive approaches. However, the Study argues that the main issues concerning comprehensive approaches are not related to differences between ‘mutual recognition’ and ‘harmonization,’ or the format of any new set of tax rules introduced. Instead, along with the more general question about member state tax rates and tax rate differentials, the *allocation method* forms the key issue.

This key issue – the allocation method – arises since a consequence of creating an EU-wide company tax base is the need to create a way to distribute those profits to the Member States for taxation at the local level, i.e., to find an apportionment formula to apportion profits across the member states. Thus, multinational companies doing business in more than one member state would no longer use the arm's length/separate accounting method for measuring their income earned in each country. Instead, they would consolidate their EU-wide income for all of their operations and apportion this consolidated income to the Member States.

### **Formulary apportionment in federal countries**

Although there is no experience with formulary apportionment across sovereign countries, a few *federal* countries use formulary apportionment for purposes of taxing within a country. The most well-known systems are in North America. Germany also uses a formula for allocating certain taxes to the Laender.

The success with formulary apportionment in the U.S. states and Canadian provinces is largely due to factors that are particular to these jurisdictions and that do not exist within the European Union. To begin, the states and provinces operate under the umbrella of the federal tax system and may call on the federal tax authorities for assistance in administering the system. Companies doing business in these subnational jurisdictions use the same accounting conventions. Moreover, the tax envi-

Under HST a company may have to comply with many different tax rules within the EU and without

ronment in these countries differs dramatically from the European Union. For example, there are no barriers to cross-state expansions or mergers, and there are no withholding taxes levied on cross-border payments. Finally, the U.S. states and Canadian provinces are much more integrated economically than are the individual EU member states.

### Formulary apportionment

The Commission Study notes that any comprehensive approach must first create a consolidated, or common EU tax base and second, devise a means to allocate that base to the individual member states. This section of the paper turns to this topic and identifies some of the issues that arise when using a formula to apportion company income.<sup>13</sup>

#### *Distortions caused by using a formulary apportionment system*

One key distortion arises from using a formula that apportions income according to firm specific factors. McLure (1980) examined how the system of apportionment used in the states affects business decisions and found that by using a formula based on firm specific factors to determine state income, the states effectively transformed the formula into a direct tax on whatever factors are included in the formula.<sup>14</sup> This outcome is readily shown by noting how the tax liability is determined in each jurisdiction within the apportionment area, as illustrated in Box 2.

If profits are apportioned according to endogenous factors, such as capital, then formulary apportion-

### Box 2

#### **The Apportionment Formula Used in the U.S. States and in the Canadian Provinces**

The particular formula for the tax liability in a jurisdiction under an apportioned profits tax as used in the U.S. states and the Canadian provinces are shown below:

##### **United States**

$$T_i = t_i [\alpha_k (K_i/K) + \alpha_w (L_i/L) + \alpha_s (S_i/S)] \Pi_i$$

Where  $T_i$  is the company's tax liability in state  $i$ ;  $t_i$  is the tax rate in state  $i$ ;  $\Pi_i$  is the company's taxable profits as defined in state  $i$  (this amount is usually the federal income tax base with adjustments);  $K_i$ ,  $L_i$ , and  $S_i$  are the company's property, payroll, and sales in state  $i$  and  $K$ ,  $L$ , and  $S$  are the company's total property, payroll, and sales; and  $\alpha_k$ ,  $\alpha_w$ , and  $\alpha_s$  are the weights given to property, payroll, and sales (where  $\alpha_k + \alpha_w + \alpha_s = 1$ ). Under the equally-weighted three factor Massachusetts formula,  $\alpha_k = \alpha_w = \alpha_s = 1/3$ .

As practiced in the US, states may freely alter the tax rate, the weights on the factors (including setting the weight of any factor equal to zero) and the definition of taxable profits (most states use the federal tax base, but this is not required. At times when the federal government has significantly narrowed the tax base, say through accelerated depreciation, many states have chosen to break the link between their tax base and the federal base to avoid revenue losses). Although the states have adopted similar definitions, states may also modify the factor definitions.

The states may apply the entire formula on either an entity or a unitary group basis. If applied to a unitary group, the factors and income are measured for the unitary group, rather than for just the single business entity.

##### **Canada**

The Canadian provinces have much less diversity in their apportionment system relative to the U.S. states. The tax liability in each province under the Canadian method of formulary apportionment is shown below (the variables are defined as above):

$$T_i = t_i [1/2 (L_i/L) + 1/2 (S_i/S)] \Pi$$

The provinces all use a payroll and sales formula, with each factor weighted equally. The definition of company profits,  $\Pi$ , is derived from the federal income tax base and is essentially invariant across provinces (provinces may offer tax incentives once the tax base has been apportioned.) Tax rates vary across provinces. This harmonization of tax bases and formulas has existed in the provinces for over 50 years.

Three important differences in the Canadian provincial apportionment method stand out when compared with practices in the U.S. states. First, property is not a factor in the Canadian formula. Second, the factor weights are the same in each province ( $\alpha_w = \alpha_s = 1/2$ ). Third, the formula and the tax base are the same (or effectively the same) in all provinces. In addition, as the federal government does not allow consolidation, the provinces also do not allow consolidation of legally-separate entities.

ment introduces a distortion to the investment decision that is in addition to the usual distortion that arises from taxing the return to capital. This distortion arises because the effective tax rate on capital under apportionment equals not only the direct effect caused by the taxation of the return to capital but also the indirect effect caused by the use of an endogenous factor to allocate profits.<sup>15</sup> This indirect effect can be positive or negative, depending on the relationship between the apportionment-adjusted tax rate in any particular location and the weighted average apportionment-adjusted total tax rate. Thus, apportionment can create an additional 'tax' or 'subsidy' to new investment and employment.

<sup>13</sup> For a detailed discussion, see Weiner (2001a).

<sup>14</sup> Gordon and Wilson (1986) presented a theoretical model that showed the complex ways in which the apportionment formula affects the incentives by firms to undertake new investment, employment, or sales in a state. For example, a formula based entirely on property encourages firms to enter into cross-border mergers.

<sup>15</sup> See Weiner (1994).

For example, with a formula that apportions income according to the location of capital, the apportionment-adjusted marginal effective tax rate (METR) on capital equals the difference between the state's apportionment-weighted statutory tax rate and the apportionment-weighted average tax rate across all states. Thus, if a state wishes to have a relatively low effective tax burden on a factor, such as capital, it can either have a low statutory tax rate or have a low weight on that factor. Applying a zero weight to a factor has the same impact on the apportionment-adjusted METR as setting the statutory tax rate to zero.<sup>16</sup>

In addition to the distortion to the firm's factor choice, the traditional formula creates an ongoing distortion for state tax policymakers. States have an incentive to manipulate the formula to stimulate additional investment or employment. For example, a state can reduce the weight on property (capital) and payroll (labor) and increase the weight on sales to encourage inward investment and employment.

The U.S. states have pursued the above strategy – four times as many states now double-weight (or more) the sales factor than 15 years ago. Empirical evidence shows that reducing the relative weight on property and payroll can stimulate new investment or employment.<sup>17</sup> Moreover, given the relative success of this policy, this instability may result in a formula based entirely on sales within the states. This outcome could raise significant administrative concerns, as it is difficult to identify the location of sales.<sup>18</sup>

However, if a means to bind jurisdictions to the same formula can be found, as has been the case in Canada and is what is envisaged for the European Union, then such instability and difficulties may be avoided. Such a system, also, does not overly restrict sovereignty. For example, even within the nearly uniform Canadian system, the provinces can modify their tax rates and investment tax credits to stimulate additional investment. The common apportionment system in Canada still leaves the

provinces significant fiscal sovereignty while not producing the 'chaos' that exists in the U.S. states.<sup>19</sup>

Finally, contrary to what has often been asserted, income shifting is still possible within an apportionment system. For example, Canadian companies operating as related companies in several jurisdictions but that do not allocate income using formula allocation have a much higher elasticity of the corporate income tax base with respect to changes in corporate income tax rates compared with companies that must allocate income across provincial jurisdictions.<sup>20</sup> If the apportionment system does not encompass consolidation, then profit shifting to related entities remains possible. Moreover, even though consolidated taxation limits income shifting, per se, the location of factors can also be manipulated, which effectively shifts income.

Box 3 summarizes some of the empirical evidence concerning the impact of formulary apportionment and unitary taxation on business investment and employment decisions. The empirical evidence shows that states can influence business investment and employment through changes in their formulae and tax rates. The Canadian provinces can also affect investment through changes to tax rates and transparent investment incentives, such as the investment tax credit.

#### *How should the formula be defined?*

The early state formulae generally included factors such as accounts receivable, cost of materials, stock of other companies, etc., but the states eventually settled on the simpler property, payroll and sales formula as adequately representing how income was generated.<sup>21</sup> These factors were initially chosen since they reflect how income is generated and recognize the contributions to income made by manufacturing and marketing states.<sup>22</sup> The U.S. Supreme Court has referred to the provision that the factors should reflect how income is generated as meeting the "external consistency" test.<sup>23</sup> When

Distortions are caused by formulas based on firm-specific factors (US). Canada uses a common apportionment system

<sup>16</sup> As the first policy only affects firms that apportion income while the second policy affects all firms, the revenue consequences differ under the two options. Weiner (1994) showed that many states changed their tax rates at the same time that they changed the weight on the capital factor to meet revenue concerns.

<sup>17</sup> See Goolsbee and Maydew (2000), and Gupta and Hoffman (2000) and Weiner (1994).

<sup>18</sup> Much of this debate about how to locate sales is now occurring concerning the taxation of electronic commerce.

<sup>19</sup> See McLure and Weiner (2000) for this quote.

<sup>20</sup> See Mintz and Smart (2001).

<sup>21</sup> This formula applies to firms in manufacturing. Other industries use different formulae.

<sup>22</sup> As the formulary system was adapted from the "unit rule" of taxing the transcontinental railroad according to the value of property located in each state relative to the total property, it also was logical to use such an approach when apportioning total income to the states.

<sup>23</sup> The corresponding "internal consistency" test is that the sum of the weights applied to the factors equals one, i.e., if all jurisdictions adopted that formula there would be no double taxation.

## Box 3

**What do we Know About the Effects of Formulary Apportionment and Unitary Taxation?**

*(1) Does the cross-state variation in apportionment formulae and tax rates explain the cross-state variation in industry capital-labor ratios?*

A: No. As states have generally maintained equal weights on the property and payroll factors when they have changed the formula, the variations in the formulary apportionment system across the states do not introduce a measurable distortion to a firm's relative capital and labor hiring decisions.

*(2) Do states that increase the weight on the sales factor encourage additional capital spending or employment in the state?*

A: Yes. Controlling for changes in the tax rate, states can, at least temporarily, gain additional investment or employment from increasing the relative weight on the sales factor.

*(3) Did business investment increase in states when they abandoned worldwide unitary combination?*

A: No. There was no measurable increase in business investment in states that discontinued using worldwide unitary combination.

*(4) Can jurisdictions stimulate new investment through competitive tax rate and investment tax credit changes within a generally uniform apportionment system?*

A: Yes. Based on data from the Canadian provinces, holding tax rates in other provinces constant, provinces can attract new investment by cutting their tax rates or introducing investment tax credits. Provinces also can attract new investment by providing tax incentives that are not available in competing provinces.

*(5) Can companies shift income within an apportionment system?*

A: Yes. If the jurisdictions do not allow consolidation or combination of related but separately-incorporate entities, companies may engage in transfer pricing to shift income to low-tax jurisdictions. Moreover, with sales in the formula, companies may alter the location of sales to shift income to a tax-favored location.

**Sources:** Joann M. Weiner (1994), "Company taxation for the European Community: How subnational tax variation affects business investment in the United States and Canada," Ph.D. dissertation, Harvard University, 1994. Austan Goolsbee and Edward L. Maydew (2000), "Coveting thy neighbor's manufacturing: the dilemma of state income apportionment," *J. Pub Econ*, Vol. 75, No. 1, January. Bharat N. Anand and Richard Sansing (2000), "The Weighting Game: Formula Apportionment as an Instrument of Public Policy," *Nat'l Tax J.*, Vol. Liii, No 2. Gupta, Sanjay and Mary Ann Hofmann (2001), "The Effect of State Income Tax Apportionment and Tax Incentives on New Capital Expenditures," mimeo, Arizona State Univ. Jack Mintz and Michael Smart (2001), "Income Shifting, Investment, and Tax Competition: Theory and Evidence from Provincial Taxation in Canada," manuscript, U. of Toronto.

The exact definition of the formula may not be as important as reaching agreement on a common formula

the Canadian provinces adopted formulary apportionment, they followed the U.S. approach in using firm-specific factors, but eliminated the property factor and implemented an equally-weighted payroll and sales formula.

It may be argued that the exact definition of the formula is not as important as reaching agreement on a common formula.<sup>24</sup> There has been little controversy about the Canadian apportionment system, even though the provinces use a formula that is similar to the formula used in the U.S. states.

<sup>24</sup> This insight is not new, as it was made by the National Tax Association as long ago as 1922 when it noted that "The only right rule ... is a rule on which the several states can and will get together as a matter of comity." McLure and Weiner note that reaching agreement on the same formula is also true of the decision to use formulary apportionment in the first place.

Perhaps this stability has occurred because the provinces have used the same formula for five decades while the states have often changed their formula. In many ways, the payroll and sales formula reaches a reasonable compromise among competing interests, since, as Musgrave (1984) noted, it balances the interests of the demand side (through the sales factor) and the supply side (through the payroll factor) while also representing the factors that generate income.

As the European Union is not bound by the constitutional constraints imposed on the U.S. states, the EU may explore other formulae. For example, the Swiss cantons use a formula based on the characteristics of the industry to allocate income across cantons. Mintz (1999) discusses using a formula that allocates income according to industry averages, rather than firm averages. The Commission Study notes that the firm's value added, or member state GDP or VAT base could also be the allocation keys. However, any formula that is not based on firm-specific factors may not bear a reasonable relationship to the

factors that generate the income and may be perceived as not being equitable.

#### *Consolidated taxation and unitary taxation (unitary combination)*

Determining the contours of the group to be combined is a central issue in adopting any form of consolidated group taxation within the EU.<sup>25</sup> Without consolidation, companies can continue to shift income to related entities located in low-tax jurisdictions. This restriction, however, prevents companies from transferring losses to profitable

<sup>25</sup> All of the proposals allow for consolidation, although not unitary taxation. Nevertheless, many of the arguments that apply in determining the unitary group also apply in determining which entities to consolidate in the common group.

companies within the group and thus reducing tax revenues. The company group can be defined in many ways, ranging from a test based solely on ownership, which is generally followed under consolidation, to tests that look at the connection of the related entities to the parent company as generally followed unitary combination.

Unitary combination is a broader notion than consolidation. Under unitary taxation, or unitary combination as it is also known, members of an affiliated group of companies that form part of an economically integrated group are combined and treated as a single entity for tax purposes. Thus, the unitary tax treats a highly-integrated company as a single operation even though that group may be composed of legally-separate entities.

The EU Study does not explicitly evaluate the unitary method. It does find that "it would seem that for the EU to adopt formulary apportionment and/or unitary combination it would require a substantial conformity of definitions of tax bases, apportionment formulae, measures of apportionment factors, and unitary businesses." As mentioned earlier, in their analysis of formulary apportionment in the European Union, McLure and Weiner (2000) concluded that if tax rates continue to differ widely within the EU so that profit shifting across separate entities remains attractive, then a system of formulary apportionment that requires unitary combination seems to be the only alternative apportionment-based system worth considering. However, if tax rates and the tax bases converge, then the EU might be able to avoid the unitary approach.

#### *The interaction of formulary apportionment with the rest of the world*

The interaction of the formulary method with the arm's length system is a major issue that the EU should address if it considers adopting formulary apportionment.<sup>26</sup> By limiting consolidation to the European Union, national income would be subject to two different approaches, depending on whether the transaction took place inside or outside of the EU. Thus, in many cases, both formula-

ry apportionment and arm's length taxation would apply at the international level.

Critical changes would be necessary in other areas. For example, the current international treaty network applies the separate entity and arm's length approaches. Difficult issues might arise if the tax authority in a non-EU state that used the arm's length system adjusted the transfer price of a product transferred from an EU parent to its non-EU business. Under most treaties, the EU country would have to make a correlative adjustment. However, as the EU profits would have been determined under a different method, the profits in that country may have been apportioned to another country. For example, if apportionment allocates more income to a host country than under separate accounting, then the home country may be requested to grant a larger foreign tax credit or to exempt more foreign-source income than if both countries operated the same system. If the home country does not accept this assessment under formulary apportionment, since it uses separate accounting to calculate profits, then companies could be double taxed. The opposite situation could lead to double exemption.

### **Conclusion**

By endorsing consolidated base taxation with formulary apportionment within the European Union, the Commission has thrust a once highly-controversial issue – formulary apportionment – to the top of EU company tax policy reform proposals.<sup>27</sup> In so doing, the European Commission has taken a bold first step toward creating a common consolidated tax base with formulary apportionment in the European Union.

Not so long ago, many might have feared that moving to formulary apportionment in the European Union would be a nightmare. As shown by the experiences in several countries that use the method at the subnational level, formulary apportionment creates complex distortions to business investment, employment, and sales decisions.

To avoid creating a situation of tax gaps and overlaps, if the EU adopts formulary apportionment, it

*If tax rates continue to differ widely in the EU, a system of formulary apportionment with unitary combination seems to be the only alternative*

<sup>26</sup> For an evaluation of a broad range of issues that would be involved in adopting formulary apportionment at the international perspective, see the U.S. Treasury conference paper by Weiner (1999). International issues were a key concern at the Treasury conference. For a discussion of the conference, see Tax Notes Int'l, Dec. 26, 1996.

<sup>27</sup> Much of this controversy surrounded the worldwide unitary tax employed in some U.S. states. The issues involved in extending consolidated taxation and formulary apportionment, i.e., worldwide unitary combination, are beyond the scope of this paper. For a review of this controversy, see Weiner (2001a).

must find a way to agree on the definition of the common tax base, the composition of the taxable corporate group, and on the formula used to apportion profits within the defined area. Member States must reconcile divergent tax claims that would arise from the interaction of the formulary system with the separate accounting method used in other countries. Moreover, tax authorities and many companies would have to maintain expertise in both systems; companies would continue to use the current system for transactions outside the EU. Transitional mechanisms would need to be developed.

The points raised in this paper, as well as the entire issue of how to deal with income earned outside of the consolidated group (both within the EU and in other countries), administrative issues, and the integration with the international approach and the income tax treaty network, are just a few of the many issues concerning the use of formulary apportionment in the European Union that remain to be resolved. However, consolidated base taxation with formulary apportionment is an appropriate way to tax companies within an integrated market. In this light, it seems that formulary apportionment has a promising future for company taxation in the European Union.

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