Taxation of Electronic Commerce in the European Union

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1. Introduction

This paper discusses application of the value added tax (VAT) and the corporate income tax to electronic commerce (e-commerce) in the European Union (EU). Electronic commerce involves the use of computer networks to facilitate the production, distribution, sale, and delivery of goods and services. Most e-commerce involves business-to-business (B2B) transactions, and a substantial portion of B2B transactions involves digital content.

Electronic commerce causes problems primarily when it crosses boundaries between taxing jurisdictions — for example, between Members of the EU or between Members and other nations. The Commission of the European Communities (hereafter the EU Commission) has written (2000b), "E-commerce is, by its nature, a truly global process and no tax jurisdiction, acting in isolation, can resolve all the issues it raises. ... The successful administration and application of taxes will to a great extent depend on, *inter ali*a, achieving an international consensus..." This paper focuses on electronic commerce that crosses borders.

Section 2 examines VAT issues and Section 3 income tax issues. Before turning to the discussions of these taxes, it will be useful to get several background issues out of the way.

1.1. Should Electronic Commerce Be Taxed?

The European Union has expressed the intent "...to become the most competitive and dynamic knowledge-based economy in the world, capable of sustainable economic growth with more and better jobs and greater social cohesion." (European Union, 2000) Even so, that e-commerce should benefit from preferential taxation has apparently never been considered seriously in the EU, as it has in the United States. In 1998 the EU Commission stated unequivocally, "The EU VAT system should ... provide the legal certainty, simplicity and neutrality required for the full development of electronic commerce. ... Certainty, simplicity and neutrality are all essential to ensure a level competitive playing field for all traders in the developing global market place, and to avoid market distortions." It noted:

> Neutrality means that:
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> - the consequences of taxation should be the same for transactions in goods and services, regardless of the mode of commerce used or whether delivery is effected on-line or off-line.

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- the consequences of taxation should be the same for services and goods whether they are purchased from within or from outside the EU.[1] (EU Commission, 1998b; emphasis removed)

1.2. The Work of the OECD TAGs

The EU has undertaken efforts to resolve many of the issues discussed in this paper; these are noted below. At the same time parallel efforts are underway in the Organisation for Economic Co-operation and Development (OECD) that are likely to condition anything the EU does, because of the need for coordinated solutions.

In fora provided by the OECD both member and non-member nations, together with representatives of business and outside experts, have been struggling with the questions of tax policy and administration posed by electronic commerce. Because of the prominence of the OECD Model Treaty in the income tax field, OECD efforts to determine how income tax issues are resolved are especially noteworthy. In an attempt to provide answers to specific questions, the OECD has established five Technical Advisory Groups (TAGS). The topics to be investigated by the TAGs are Consumption Tax, Business Profits, Treaty Characterisation of E-commerce Payments, Technology, and Professional Data Assessment. (See OECD (2001a.) The work of the Technology and Consumption Tax TAGs are especially relevant to the VAT. The Business Profits and Treaty Characterisation TAGS treat income tax issues.

2. Value added tax

Standard textbook descriptions say that the VAT levied in the EU is a destination-based tax — that imports are taxed and exports are zero-rated and thus occur tax-free. Part 2.3 of this section explains that this description is not accurate in the case of services and Part 2.4 examines the European Commission's proposals for reform of the taxation of electronic commerce. However, the first two parts ignore that and ask (part 2.1) how the destination principle is actually implemented under the EU's so-called "transitional" VAT system in the case of tangible products and (part 2.2) how it might be implemented in the case of intangible products; part 2.5 examines the taxation of digital content under the "definitive" origin-based VAT system proposed by the Commission.[2] For this purpose it is useful to divide international commerce into the four

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[1]The Organisation for Economic Co-operation and Development (2001b, p. 228) has expressed similar sentiments: "The taxation principles which guide governments in relation to conventional commerce should also guide them in relation to electronic commerce."

[2]Some explanation of the term "transitional VAT system" may be in order. In 1967 the European Common Market (the forerunner of the EU) decided that the origin principle should eventually be adopted for trade within the Common Market, so that the border adjustments (BTAs — rebate of VAT on exports and collection of VAT on imports) required for implementation of the destination principle would not interfere with creation of a single market. In 1987 the Commission proposes a shift to the origin-based system internally by 1993. When it was realized in 1989 that the 1987 proposals would not be implemented by 1993, the "transitional" system was adopted as a means to implement the destination principle for internal

categories shown in Table 1, depending on a) whether it involves tangible or intangible (digitized) products and services and b) whether the purchaser is a registered trader or a consumer or unregistered trader ("others"). Several of the boxes in the table distinguish between trade with other members of the EU (internal trade) and trade with non-members (external trade).

Table 1
Actual EU Tax Treatment of Imports of Tangible Products and Possible Tax Treatment of Imports of Digital Content

	Type of Product	
Purchaser	Tangible products (actual EU tax treatment of goods under the "transitional" VAT system)	Digital Content (potential tax treatment of intangible products and services)
Business ("registered traders")	**1a. External:** taxation at the border (or post office) **1b. Internal:** reverse charge	**3.** Reverse charge
Consumers (or unregistered traders)	**2a. External:** Taxation at the border (or post office) **2b. Internal:** registration in state of destination or VAT of state of origin	**4.** *The key problem area*

2.1. Implementing the Destination-Based VAT on Tangible Products in the EU

Under the "transitional" VAT system tangible products imported into the EU via commercial channels by either registered traders or others (cases 1a and 2a) can be taxed at the border or at the post office, whether ordered electronically or by conventional means. (This discussion ignores the problem of collecting a destination-based VAT on cross-border shopping — the situation when a consumer who lives in one Member State buys a product in another Member State and takes it home.) The primary administrative problem is that posed by the increased volume of small orders passing through the post office generated by the advent of e-commerce. Enhanced exemptions for small shipments, which may be required to ameliorate this problem, would adversely affect both the economic neutrality and the fairness of the system, as well as revenues.

Tangible products moving between Member States of the EU are treated differently, depending on whether they are bought by registered traders or by others. In the former case, exports are zero-rated and, under the system of "reverse charging," purchasers are expected to self-assess the tax of the destination state. Sales from a

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trade in goods without resort to BTAs. (Services are taxed on an origin basis; see part 2.3.) The key components of this system are reverse charging of VAT on sales to registered traders and collection of tax on distance sales to households and unregistered traders by vendors making substantial amounts of such sales to customers located in a given Member State. See also Genser (2001) and Cnossen (2001) for further descriptions and analyses, as well as further references.

vendor in one Member State to consumers and unregistered traders located in another (e.g., mail order and telephone sales, which are commonly called "distance selling") are treated differently, depending on the volume of sales the vendor makes to customers located in the other Member State. If sales fall below a threshold, they are simply subject to the VAT of the state where the vendor is located. If they exceed that threshold the vendor must register in the state where customers are located and collect the VAT of that state.

In summary, the EU VAT is truly a destination-based tax for tangible goods, except in all the case of intra-EU sales to consumers and unregistered traders in other Member States by EU vendors that fall below the threshold for registration in the state of destination (and, of course, cross-border shopping).

2.2. Inherent Difficulties of Implementing a Destination-Based VAT on Intangible Products

Reverse charging could also be employed for purchases of intangible products and services by registered traders (case 3). (The option of collecting tax at the border or the post office does not exist.) The truly difficult problem is how to collect a destination-based tax on purchases of intangible products by consumers and unregistered traders.[3] As the Commission of the European Communities (2000b) has noted, "This is a new type of business transaction, which had not been envisaged when the existing legislative base was being drawn up. Furthermore, the compliance, control and enforcement models currently available to tax administrations were likely to be inadequate in certain respects." Reverse charging is not a realistic option in this case; it would amount to a tax on honesty. (Tax collected via self-assessment of registered traders only affects the timing of tax payments, to the extent taxes on inputs are allowed as a credit against VAT on sales. By comparison unregistered traders, like consumers, feel the full burden of any VAT they pay.) If reverse charging (accompanied by zero-rating by the Member State where the sale originates) is to be limited to sales to registered traders, vendors would need to be able to differentiate between sales to registered traders and sales to others.

Requiring vendors of digital content located in other jurisdictions, whether in members or non-members of the EU, to collect the tax of the nation where the customer resides is problematical, for several reasons. First, vendors do not necessarily know the location of their customers and do not want to change their business plans to incorporate this function.

Second, in dealing with vendors who have no physical presence within their borders market states generally have no "teeth." The Commission (2000b) suggests that the risk of incurring large unpaid tax liabilities to EU members and the need for legal protection (e.g., of copyrights and other intellectual property) in the market state will induce vendors to register and collect tax. But the OECD (2000) notes, "the ability of

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[3]In the United States, by comparison, because the sales tax system is deeply flawed, most of the focus has been on electronic commerce in tangible products; see McLure (2000a).

a tax jurisdiction to enforce such a tax regime beyond their borders will be spotty at best, leading to market distortions and inequalities."

Third, while this approach might work for the EU, where VAT laws are relatively harmonized, it could hardly be the international standard, without substantial uniformity of the VATs of various nations; it is unreasonable to expect non-resident vendors to comply with the diverse VAT laws of more than 100 countries.

Expecting the nation where the vendor is located to collect the tax and remit it is even less likely to be successful. Problems already identified would be compounded by the lack of incentives to collect the tax.

Some have suggested that "technology" be employed to administer taxes on digital content. Thus private firms might store salient features of the tax laws of various nations on their computers and calculate the tax due on any transaction, depending on the product and the nature and location of the customer.[4] While such systems are already being used, especially for the collection of tax on tangible products, these proposals suffer from many of the problems already mentioned (e.g., inability to identify the location of the purchaser of digital content). The EU Commission has suggested that credit card companies could perform this task. But the companies currently are not set up for the transmission of the massive amounts of data that is implied. The OECD (2000, Annex V) has concluded:

> Changing the authorisation process in order to verify an address for tax purposes would require altering fundamental business policies and protections which could lead to considerable system modifications at significant costs to the credit card industry. ... Changing the authorisation process would not only delay the authorisation of transactions, but it would also slow down commerce. ... The effect of such changes undermines principles of neutrality between digitally delivered goods and physically delivered goods because in a physical goods environment only one authorisation would be required.

Perhaps the most promising approach to some of these problems — but not all — involves using digital certificates and digital signatures. These systems employ Certificate Authorities to guarantee that the buyer is who it claims to be (the location of the purchaser and whether or not the purchaser is a registered trader). The OECD (2000) notes both the promise of this technology and obstacles to its use:

> The distinction between consumers and business is not something inherent to Internet technology. This means that the distinction online will only be achieved through the introduction of an identifier. Digital certificates are worthy of investigation as having the potential to deliver this feature. It should be noted, however, that in some legal systems,

[4]See OECD, 2000. This approach is being considered by the American states; see http://www.geocities.com/streamlined2000/index.html and McLure (forthcoming).

only natural persons may hold certificates and the person in their corporate function may only be distinguishable from the private person through the use of an attribute field.

2.3. The Commission Proposal for Taxing Digital Content

Article 9 of the 6th directive, which establishes the basic ground rules for the imposition of VAT in the EU, provides that for many services the place of supply is the location of the supplier. This implies that for such services the VAT is an origin-based levy. In practical terms this means that imports of services into the EU from non-members are not subject to tax, that imports of services from another member state pay the VAT of the exporting state, and that exports from the EU are subject to the VAT of the member where the supplier of services is located.

This rule, which may have been satisfactory when initially adopted, has become increasingly untenable, as it places EU-based service providers at a competitive disadvantage, in both EU and foreign markets. In 1999, responding to competition from telecommunications companies located in non-member states, the EU modified the 6th directive to exempt from VAT telecommunication services EU-based suppliers provide to customers outside the EU and apply VAT to telecommunication services provided by non-EU based suppliers to customers in the EU. For this purpose, non-EU based suppliers of telecommunication services are required to register for tax purposes in each Member State where they have customers and collect the VAT of that state. Significantly — and anomalously — EU-based suppliers of telecommunications services to customers in other EU Member States continue to apply the VAT of the Member State where they themselves are established.

In 2000 the EC Commission (2000b) proposed to extend the same treatment, with several important modifications, to taxation of digital content, which it (like the OECD) had previously argued should be taxed as services, rather than as goods. The most important modification was that service providers located in non-members should be allowed to register in only one EU member and pay its VAT. (For vendors located outside the EU this regime would apply only if sales to consumers and unregistered traders in the EU exceeded 100,000 euros per year; sales below the threshold would not be taxed. Tax on sales to registered traders would be collected via reverse charging.) Exports of digital content from the EU would occur free of tax.

The Commission's proposals were immediately condemned as unfair and inconsistent with economic neutrality and other principles of international taxation because of the following:

- Non-EU vendors of digital content registered in a low-tax jurisdiction (e.g., Luxembourg) would have a competitive advantage over vendors located in other EU jurisdictions. Having such vendors register in all member states where they have customer would impose compliance costs some EU vendors do not incur.

- Non-EU vendors with sales below the 100,000 euro threshold would have a competitive advantage over EU vendors, who benefit from no such threshold.
- Tax on competing products would depend on whether the product is delivered in tangible form (e.g., software on a diskette) or in intangible form (downloaded software). Some products that are exempt when delivered in tangible form (e.g., books) might be taxed when delivered on-line.
- Basing taxation on the deemed presence of the non-EU vendor was seen to involve extraterritorial application of EU law. It was also feared that this treatment might spill over to income taxation. (See Weiner, 2001a; she cites the Electronic Commerce Tax Study Group of PricewaterhouseCoopers for the last view. See the next section on jurisdiction to tax under the income tax.)

That the Commission's proposals should encounter these difficulties is more or less inevitable, as they combine several inconsistent elements in one package: destination-based taxation of goods, origin-based taxation of services provided to consumers and unregistered traders from other member states, and taxation of similar services provided from outside the EU at a tax rate that the service provider can choose by choosing where to register for sales to the EU. (The Commission's proposal to allow foreign vendors of digital content to pay tax in only one member state is inconsistent with its assertion that "taxation should take place in the jurisdiction where consumption takes place.")

2.4. The EU Proposals in International Perspective

The Commission has been criticized for proposing that the EU move unilaterally on this problem, without waiting for an international consensus. If commerce in digital content is to be taxed on the destination basis, substantial international cooperation will probably be required. At the very least there needs to be international agreement on how destination-based taxation of digital content should be implemented, so that different nations or blocs of nations do not adopt mutually inconsistent strategies and thereby create double taxation (or no taxation) of particular transactions and compliance obligations that are so complex that they ham-string the development of electronic commerce. For example, should vendors register in all states where their sales exceed threshold levels, or should the "technology option" be adopted? The required international cooperation may go well beyond tax administration, narrowly defined, to include the development of digital certification or of Internet protocols that allow tax administrators to know the origin and destination of electronic transactions, without unduly compromising privacy, and mutual enforcement of tax debts to other nations. International cooperation must, of course, extend beyond the EU.

Depending on which option is adopted, there could be enormous implications for tax policy. For example, it seems unreasonable to require vendors of digital content to register and collect VAT in each state where their sales (to households and unregistered traders) exceed a threshold, unless there is significant harmonization of the VAT bases of all nations. This is a tall order, indeed, since there is presently no such harmonization, outside a few regional trading blocs.[5] It does seem that the Commission acted prematurely in making proposals for the application of VAT to sales of digital content that could not form the basis of a wider international agreement.

2.5. Taxation of Electronic Commerce under the "Definitive" VAT System

Under the "definitive" system of value added taxation, tax rates (and perhaps tax laws) would be more closely aligned and revenues would be shared among members of the EU on the basis of estimates of consumption occurring in the various members states. The definitive system would handle e-commerce with less compliance and administrative burden than the transitional system because it would not be necessary to identify the location of purchasers of digital content.

On the other hand the definitive system would eliminate the ability of member states to choose their level of taxation, as it requires virtually identical tax rates. Moreover, it is not clear that alternative systems of implementing the destination principle could not handle many of the administrative and compliance problems that plague the current system. (See Bird and Gendron, 2000; Keen and Smith, 2000; and McLure, 2000b, and references provided there.) In short, the choice between the two VAT principles remains open.

3. Corporate Income Taxation

For the moment the distinction between internal e-commerce and external e-commerce is not particularly meaningful in the corporate income tax field, but it is likely to become important in the future. It will be useful to begin by reviewing the taxation of electronic commerce under existing international "rules of the game" both because those rules are likely to govern future income tax relations between EU members and non-members and to provide background for consideration of possible changes in income tax relations between members. (See also Gannon and Weiss, 2000.)

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[5]Note that in the United States sales taxes are not federal taxes. The federal government could, under the Commerce Clause of the U.S. Constitution, require the states to cooperate with other nations, but that would involve unprecedented interference with states' rights. Moreover, neither the states nor the federal government seems likely to want to help foreign governments tax imports of digital content from America, especially since the states are effectively prevented by judicial decisions from taxing sales to their own residents by vendors (including foreign vendors) who have no physical presence in the state; see McLure (2000a).

3.1. Analysis under Existing Standards

With few exceptions the same basic standards currently apply to income tax relations among members of the EU and between EU members and non-members.[6] In both cases the relations are governed by bilateral treaties (where treaties have been enacted), as well as by national tax laws. (Where tax treaties do not exist tax relations between members and non-members are governed by the domestic laws of the two countries.) Since most treaties are based on the OECD Model Treaty[7] efforts currently underway in the OECD's Business Profits and Income Characterization TAGs may be extremely important in determining how some of the issues discussed below are resolved. In addition, income tax relations between members of the EU are conducted within the context of the EU Treaty, as interpreted by the European Court of Justice.

All members of the European Union levy source-based income taxes; that is, they tax business profits deemed to originate within their borders. By comparison, they may only apply withholding taxes to other types of income (e.g., interest, dividends, and royalties). Thus all members must distinguish between types of income, determine the source of some types of income, and measure the income that is subject to taxation at source. In addition, most members also levy residence-based taxes on the income of corporations having their residence within their borders, allowing credits for tax paid to source countries. This system, like the exemption of foreign-source income, gives priority in taxation to source countries. Since foreign tax credits (FTCs) are commonly limited to the amount of domestic tax that would be due on foreign-source income, it is necessary to determine the source of income in order to implement limits on the FTC.

3.1.1. Classification of income

To apply the system summarized above it is necessary to know the nature of income, since different types of income are subject to different sourcing rules, as well as different tax regimes (income tax vs. withholding taxes). Under the OECD Model Treaty the source country is entitled to tax the business income of a non-resident corporation, provided the income is earned by a permanent establishment (PE) located in the taxing state. In addition, the source country ordinarily levies withholding taxes on dividends, which may be reduced by treaty. (OECD Model Treaty, Article 7; under the Parent-Subsidiary Directive no withholding tax is levied on intra-EU dividends a subsidiary pays to a parent.) By comparison, only the residence country normally taxes

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[6]The exceptions are the EU's Merger Directive, the Parent-Subsidiary Directive, and the Arbitration Convention; the first two are not important for present purposes and the third has been ineffective. See Cnossen (2001) for a description and analysis of the income tax systems in Member States, as well as references.

[7]The network of treaties among Member States is not quite complete, treaties between Member States are not uniform, treaties with non-members may not be mutually consistent, treaties may not be interpreted consistently, and treaties may be inconsistent with the principle of equal treatment under EU law. The EU might conclude a multilateral treaty or an EU version of the OECD treaty and commentary that meets the particular needs of EU members. See EU Commission (2001a and 2001b, Sections III.6 and IV.9.)

royalties, unless they are related to a permanent establishment in the source country. (OECD Model Treaty, Article 12)

Electronic commerce in digitized content blurs the lines between types of income. A particular transaction may be characterized as the sale of a product, the rendering of a service, or the use of an intangible asset. (On the characterization of transactions in software, see U.S. Department of the Treasury, 1996.) Since characterization of income may differ among members of the EU, as well as between members and non-members, there is substantial latitude for double taxation or lack of taxation. Sprague and Boyle (2001, p. 26) have written regarding transactions involving software, "... there is not a complete global consensus, and even where jurisdictions may profess the same general principles, differences in interpretation may result in conflicting conclusions when these principles are applied to certain transactions."

The OECD Business Profits TAG considered 28 types of e-commerce transactions and concluded that 25 should be characterized as the sale of a product. (OECD, 2001c) Under the OECD Model Treaty income from such sales would not be subject to income tax where the product is sold, in the absence of a PE. (The other three, which involve payment of royalties, would also not incur income tax.)

3.1.2. The concept of permanent establishment

The concept of a permanent establishment is crucial to determining whether a source country can tax business income. The OECD Model Treaty (Article 5) defines a permanent establishment as a "fixed place of business through which the business of an enterprise is ... carried on." A PE also exists if a dependent agent in the country has and habitually exercises authority to enter into contracts on behalf of the company. The model treaty explicitly excludes from the definition of a PE, *inter alia*, "the use of facilities solely for the purpose of storage, display or delivery of goods or merchandise" and the maintenance of a fixed place of business solely for the conduct of an "activity of a preparatory or auxiliary character."

Several years ago, when e-commerce first began to become prominent, there was concern that some aspects of e-commerce (for example, the presence of a Website or the use of an Internet Service Provider in the taxing state) would be interpreted as constituting a PE. The OECD has recently clarified the interpretation of Article 5 to indicate a) that neither of these activities would constitute a PE, but b) that whether the existence of computer equipment (e.g., a server) in a state would constitute a PE would depend on the functions performed, which could only be determined on a case-by-case basis. It noted that the presence of human intervention is not required for the finding of a PE. At the same time the OECD emphasized that it was only clarifying the interpretation of the current Treaty definition of a PE and that the Business Profits TAG has been given the general mandate "to examine how the current treaty rules for the taxation of business profits apply in the context of electronic commerce and examine proposals for alternative rules." Significantly, the OECD has suggested that, based on functions performed and risks undertaken, even if a server were found to constitute a PE, relatively little income would ordinarily be attributed to it, because of the small amount of assets and risk adhering to it. (See OECD 2001c.)

3.1.3. Source rules

Source rules are required "to describe the scope of income over which the country of source exerts taxing jurisdiction." Extant source rules pre-date the existence of electronic commerce and may be particularly deficient in the case of income from transactions in digital content. Sprague and Boyle note, "there has been virtually no legislative activity with respect to source of income rules in the specific context of electronic commerce." It is thus inevitable that "difficult interpretative issues exist" and that conflicts in interpretations will arise. (See Sprague and Boyle, 2001, p. 29.)

Source rules in effect in various countries include the location where title passes, the place of performance of services or business activity, and the place of contracting. All these are problematical and subject to different interpretations, especially when applied to commerce in digital content. Strictly speaking, title generally does not pass to the acquirer of "canned" software, and the location of title passage may not even be a meaningful concept in the case of intangible assets such as software that is downloaded from the Internet. The same factual pattern that may lead one nation to infer that services are performed where capital and labor are employed may lead another to infer that services are performed where the services are enjoyed. Nuances of contract law may dictate where income is deemed to have its source. (For more complete discussion, see Sprague and Boyle, 2001, pp. 29-40.) In short, source rules governing electronic commerce are far from clear.

3.1.4. Separate accounting and the arm's length standard

International taxation is based on separate accounting and the arm's length standard. That is, an attempt is made to measure the income of legally separate entities or of PEs, based on the assumption that all transactions between related parties occur at the same prices that would prevail in transactions between unrelated parties. (This presumption, found in Article 9 of the OECD Model Treaty, is enshrined in the OECD, 1995.) Traditionally such benchmarks as comparable uncontrolled prices, cost (plus a margin), and resale value (minus a margin) have been used to determine transfer prices. More recently these techniques have been supplemented in the OECD guidelines by two "transactional profit methods" — the profit split and the transactional net margin methods — both of which entail examination of "the profits that arise from particular transactions among associated enterprises." (OECD, 1995, chapter III)

The profit split methodology seeks to divide the income of affiliated enterprises between them, based on the functions performed and the risks assumed by each, working back from profits to the implied prices. It may be applied to either the total profits of the affiliated enterprises or to the residual profits that cannot easily be assigned to one of the enterprises, calculated by attributing to each entity a return to its activities. The transactional net margin method examines profit margins, relative to an appropriate base such as costs, sales, or assets. Thus it operates in a manner similar to the cost plus and resale price methods. The OECD (1995) concludes, "as a general matter the use of transactional profits methods is discouraged." (See EU Commission, 2001c, Sections III.5 and IV8, and Li, 2001, for more complete discussions.)

Documentation of transfer prices, which in some countries must be done contemporaneously to withstand audit, is becoming increasingly onerous. The Union of Industrial and Employers' Confederations of Europe has noted (UNICE, 2000), “There is a growing belief that the documentation requirements are disproportionate for a single market.” The EU Commission (2001a), (2001b) has suggested that Member States better coordinate their documentation requirements.

Uncertainty regarding issues transfer pricing hinders investment. Nor must nations reach identical conclusions. Failure to make offsetting adjustments commonly leads to double taxation. Mutual Adjustment Procedures exist to deal with this problem, but they can be time-consuming and tax administrators are not required to participate in them. (Taxpayers often find it cheaper to pay tax to both nations, rather than continuing disputes.) The EU Commission has noted that the Arbitration Convention, which is seldom used, needs to be improved and made subject to interpretation by the European Court of Justice (ECJ). Moreover it has urged Member States to introduce or expand use of bilateral or multilateral Advance Pricing Agreements, under which taxpayers agree in advance with the tax authorities of one or more nations on the methodology to be used in calculating transfer prices. See EU Commission (2001a), (2001b).

The advent of electronic commerce greatly complicates transfer pricing. (See Li, 2001, for a detailed description and critique of transfer pricing and Sprague and Boyle for a discussion of transfer pricing of e-commerce transactions.) First some forms of electronic commerce involve myriad small transactions.

Second, and more fundamentally, the arm’s length standard is based on an underlying assumption that denies the very *raison d’etre* of the modern corporation — that affiliated entities behave like unrelated ones and engage in similar transactions on similar terms. Sprague and Boyle (2001, p. 41) report:

> the task of locating comparable transactions is the most difficult transfer pricing challenge arising from new economy transactions. ... the evolution of business models towards more dispersion of high value-added activities across jurisdictions, more integration of transactions among related entities, and greater specialization of functions all could make identification of comparables more difficult.

Similarly, the OECD (1995, ¶1.10) notes, “Where independent enterprises seldom undertake transactions of the type entered into by associated enterprises, the arm’s length principle is difficult to apply because there is little or no direct evidence of what conditions would have been established by independent enterprises.” Finally, the EU Commission (2001c) opines, “When the whole business structure of multinational enterprises differs so fundamentally from that of independent parties it can reasonably be assumed that it is difficult to find comparables.” There are often no comparable transactions between unrelated entities for the intangible products that are at the heart of much e-commerce. (See McLure, 1997b)

More generally, using separate accounting and arm's length pricing to divide the income of a modern corporation among the various legal entities that comprise it encounters a fundamental and conceptually intractable difficulty. Economic interdependence and synergy between various parts of the corporate group produces profits that would not exist if unrelated firms engaged in similar activities, and it is conceptually impossible to allocate those profits scientifically. (See Langbein, 1986, and Robinson, 2000, and references cited there.)

As a summary assessment it is useful to quote Horner and Owens of the OECD (1996, p. 520):

> The speed, frequency, and integration of exchanges over the Internet and the development of private networks within MNEs will require an innovative approach in applying a separate transaction analysis. In terms of comparability, it becomes more difficult to determine what the transaction actually is, and even greater difficulties apply to finding a third party transaction about which enough is known to conclude that it is comparable. And transactions can be hard to discover and trace, particularly those which take place in private networks. The OECD guidelines direct a functional analysis to assess comparability, but with electronic commerce and private networks, it can be difficult to know who is doing what. Transfer pricing will increase in complexity, particularly if the MNE is purposefully attempting to shift income among related parties.

3.1.5. The problem of tax havens

The paradigm of taxation described at the beginning of this section (taxation by the source country, combined with either exemption of foreign-source income or worldwide taxation cum foreign tax credits in the residence country) blurred over two important issues, deferral and the existence of tax havens. When foreign-source income is earned by a foreign subsidiary, residence-based tax is, with a few exceptions, deferred until income is repatriated as dividends.[8] Indefinite deferral is tantamount to exemption.

Deferral, especially if combined with the manipulation of transfer prices and thin capitalization, creates the possibility of tax havens. Avi-Yonah (2000) considers three types of tax havens. First, nations where sales are made may lack jurisdiction to tax, because there is no PE. Income from sales in such nations that accrues to a subsidiary in a low-tax jurisdiction benefits from deferral. Second, nations where production occurs may offer reduced rates or tax holidays to attract investment. Production occurs in a separate subsidiary, so that the residence-based tax is deferred. Third, nations may

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[8]The primary exception involves legislation relating to controlled foreign corporations, or CFCs. CFC legislation, which provides current residence-based taxation of certain income earned in low-tax jurisdictions, is often ineffectual; see Arnold (2000).. The application of CFC legislation within the EU may run afoul of the ECJ's concern with obstacles that interfere with the creation of a single market. See EU Commission, (2001c).

provide preferential tax treatment of headquarters activities, to attract such activities. In all three cases there is an incentive to use artificial transfer prices and thin capitalization to shift income to low-tax jurisdictions. Tax -deferred income can be reinvested If electronic commerce reduces the need for a PE in market nations or increases the difficulty of monitoring transfer pricing, it increases the possibility of using tax havens to escape taxation.

While many tax havens are small island nations, some members of the EU and the OECD also provide preferential tax regimes for certain activities. For example, Ireland levies a 10 percent rate on income foreign taxpayers earn from manufacturing and Belgium and the Netherlands provide special tax treatment of "coordination centers" to attract headquarters of multinational corporations.

The EU, as well as the OECD, has recently undertaken efforts to stem the use of tax havens. (See EU Commission, 2000a; OECD, 1998a; Arnold, 2000; Avi-Yonah 2000; and McLure, 2001; the last contains references to previous EU reports.) While the OECD initiative has thus far been limited to financial and other highly mobile activities, the EU "code of conduct" has greater scope. If successful, these efforts will reduce the possibility of using off-shore tax havens and similar regimes in member countries to undermine the tax systems of other nations. Even so, it is worthwhile to examine another alternative, replacing separate accounting and the arm's length standard with formula apportionment as the means of dividing corporate income among source countries.[9]

3.1.6. A shift to unitary taxation/formula apportionment?

A worldwide shift to formula apportionment of the worldwide income of corporate groups could significantly reduce the problem posed by tax havens and preferential regimes. (See McLure and Weiner, 2000, for references.) If sales were one of the apportionment factors, more income would be allocated to market nations. (This would seem to make sense only if the definition of a PE were relaxed or replaced by a test of jurisdiction to tax based on economic presence.) Production tax havens and headquarters tax havens would be allocated only an amount of income commensurate with the apportionment factors found in the haven nation; manipulating transfer prices to shift income would generally be ineffective — or at least less effective than now. (Manipulation of the sales factor might be possible.)

An EU shift to formula apportionment would have similar effects in protecting the income tax bases of Member States, if applied to the world-wide income of corporate groups operating in the EU. It seems likely, given recent opposition of Member States to worldwide unitary combination employed by the US states, that formula apportionment would be applied only to income from within the EU, measured

[9]Some believe that formula apportionment would necessarily replace residence-based taxation as well as reliance on separate accounting and the arm's length standard in source-based taxation. I do not see that this is logically true. Residence-based taxation could be combined with a formula apportionment, just as it is currently combined with separate accounting and the arm's length standard.

using separate accounting and the arm's length standard. It might still be possible to use transfer prices to shift income to off-shore tax havens, but income shifting to production and headquarters havens within the EU would be substantially curtailed. See McLure and Weiner (2000) and Mintz and Weiner (2001).

3.1.7. Increased priority to residence-based taxation?

Because of the growing difficulty of implementing source-based taxation, the United States Treasury Department (1996) has suggested that increased priority accorded residence-based taxation. Besides being self-serving this proposal is questionable on technical grounds; it is also not easy to implement residence-based taxes in the world of e-commerce. (See Avi-Yonah, 1997.) The proposal seems politically unrealistic and unlikely to gain international assent. It is not considered further.

3.1.8. Is much revenue at stake?

The advent of electronic commerce may substantially reduce corporate income tax revenues of some less developed countries, as it may be possible to make sales of both tangible products and digital content without having a permanent establishment in the market nation. Though it seems that the revenue impact on developed countries at comparable stages of technological development is likely to be much smaller, there may be some shift of tax base from Europe to the United States, because of the technological leadership of the latter.[10] The greater ability to use off-shore tax havens in a world of e-commerce may undermine the revenues of all nations; that depends in part on the success of initiative on harmful tax competition. All things considered, however, it does not seem that e-commerce will significantly undermine the income tax revenues of members of the EU.

3.1.9. Summary assessment

In their income tax relations with non-members, EU members will face essentially the same problems as other nations face in their international tax relations. The members of the international community will grope towards a solution, perhaps led by the efforts of the OECD. Whether the groping occurs slowly or quickly and whether the groping is more of less successful is, within limits, not likely to be urgent; the world will muddle through. But the problems just described are likely to become increasingly urgent as the economic integration of Europe proceeds — or is hampered by the lack of progress in handling these and other problems caused by the lack of harmonization of income taxes within the EU.

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[10] Avi-Yonah (2001) appears to reach similar conclusions, but for somewhat different reasons. He believes that it may be difficult to sell in the markets of developed countries without a PE, whereas multinational corporations benefit from tax incentives designed to induce them to locate manufacturing facilities in developing countries.

3.2. A New European Income Tax Order?

The growing economic integration of Europe, together with the advent of electronic commerce, makes continued reliance on separate accounting and the arm's length standard within the EU increasingly problematical. (The integration of Europe may also require a reappraisal of residence-based taxation of corporate income. See, Sorensen, 1984; Bird and Wilkie, 2000; and Cnossen, 2000, as well as EU Commission, 2001c).

Among the readily identified potential problems are the following:

- Economic integration will make it increasingly difficulty to implement transfer pricing.
- Economic interdependence between closely related entities will makes it conceptually impossible to isolate the income of the entities.
- Losses incurred in one jurisdiction cannot be deducted in calculating tax liability in other jurisdictions.
- The system is vulnerable to the use of preferential tax regimes to reduce taxes.
- The existence of 15 separate national tax regimes — a number soon to be increased substantially with the accession of new members — creates complexity and high compliance costs. Of singular importance, transfer prices must be calculated for all transactions internal to a corporate group that cross the boundaries between Member States.

The Commission of the European Communities (2001a) reports that, "on average in the EU, outbound and inbound investment are more heavily taxed than otherwise identical domestic investment..." and notes, "The multiplicity of tax laws, conventions and practices entails substantial compliance costs and represents in itself a barrier to cross-border activity." (See also UNICE, 2000.)

Among the transfer pricing problems that are accentuated by the advent of e-commerce are these:

- Concentration of production to serve the European market implies an increase in the volume of intra-group trade that crosses boundaries between members — and with it the volume and importance of transfer pricing issues.
- Overhead functions such as marketing, R&D, and financing are being centralized, increasing the volume of costs that must be allocated through some sort of cost-sharing technique. (UNICE, 2000)
- There is a growing tendency to use standard "euro" transfer prices for intermediate products, regardless of the Member State in which they originate. (EU Commission, 2001a, 2001b)

The EU Commission has concluded that it is appropriate, as a long-term objective, for the EU to shift to a system based on greater uniformity of tax bases, consolidation of the profits of affiliated groups of companies, and the use of formula apportionment to divide group income among Member States[11] It discusses two generic approaches to dealing with the problems identified here: "Common Base Taxation" and "Home State Taxation."[12] Both systems would be optional, in order to get around the unanimity requirement in the EU treaty. In addition, Member States would retain sovereignty over tax rates. The salient features of these systems can be quickly summarized. (For further details, see EU Commission, 2001c, Section IV, and references cited therein, as well as references cited below.)

3.2.1. Common Base Taxation (CBT)

The UNICE (2000) has proposed the following system, which is discussed fully in EU Commission (2001a), (2001b):

> The system of CBT entails an optional consolidation of a group of associated companies' taxable bases across the Single Market. The taxable base would be calculated under European rules, allocated to the Member States in accordance with the activities performed in those States and taxed at each Member States' own tax rate.

3.2.2. Home State Taxation (HST)

Under the proposal for home state taxation EU members with sufficiently similar systems of calculating taxable income (participating states) would agree to accept the calculation of taxable profits under the laws of the state where a corporation is headquartered. Those profits would be divided among the members where the corporation operates on the basis of a formula. See Lodin and Gammie (2001) and the description in EU Commission (2001c).

This system, based on "mutual recognition" of the tax laws of other Member States, could be implemented by as few as two Member States, via a bilateral or multilateral treaty. It would, however, work best if adopted by all members of the EU, as corporations operating in non-participating states (as well as those not opting to be taxed under the HST) would be taxed as now in those states. It can be expected that

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[11]By comparison, the Ruding Committee had reaffirmed the use of transfer pricing as the key to determining the source of income; see EU Commission (1992, p. 205).

[12]See EU Commission (2001a, and 2001b, Sections III and IV). The Commission identified two additional options: a European Union Company Income Tax and a Harmonized Tax Base. The first would replace the corporate income taxes currently levied by the member states with a Union-level tax and the second would require virtually complete identity of national systems, except for the choice of tax rates. Both involve such drastic loss of fiscal sovereignty that they are not discussed here. EU Commission (2001c, Box 59) contains a useful summary comparison of the four comprehensive approaches.

many corporations would exert pressure on governments where they are headquartered to participate in the HST system and thus allow them the option of using the HST.

3.2.3. Appraisal

This is not the place for a full-fledged appraisal of these two proposals. (For that, see EU Commission, 2001c, Section IVC. Weiner, 2001b, and Mintz and Weiner, 2001, address some of the issues.) It is, however, worthwhile to note that either of these systems would address the major problems identified above for intra-EU income tax relations (but not, of course, for relations with non-members of the EU, for states not participating in the HST, or for companies opting not to participate in the HST or the CBT):

- Differences between branches (PEs) and subsidiaries would cease to matter for tax purposes.
- Transfer pricing problems would be addressed by ignoring all transactions between entities in the group.
- Profits resulting from economic interdependence would, in effect, be allocated like all other profits.
- Each corporate group would need to comply with only one set of tax laws.
- Losses incurred anywhere in the EU would be deducted in calculating apportionable income.
- Problems caused by the existence of preferential regimes within the EU would be addressed by allocating to each nation only an amount of income commensurate with the apportionment factors found there.

It is worthwhile to note several issues, aside from the definition of taxable income to be divided by formula, that would need to be addressed under one or both of these proposals.

The tax-paying group: It would be necessary to decide how wide to cast the net in requiring (or allowing) legal entities to combine their activities for purpose of the CBT or the HST. This could be based on a simple test of ownership or, as in the United States, it might depend on whether the various entities are engaged in a single ("unitary") business. (See McLure and Weiner, 2000.)

The apportionment formula: There are a variety of ways the apportionment formula used to divide the income tax base among the members of the EU could be defined. The formula could be based on the economic activities of individual corporate group (e.g., a weighted average of its payroll, property, and sales), as in the United States and Canada; the European Commission (2001c) calls this a "micro" approach. Alternatively, under a "macro" approach apportionment would be based on industry averages to prevent both the manipulation of apportionment factors and the economic distortions inherent in use of the micro approach. One set of apportionment "keys" that has been discussed prominently in the EU is an origin-principle, income-based measure of value added. This key would be derived by adjusting the measure of value added that is implicit in the EU VAT by adding exports, subtracting imports, and converting expensing to depreciation. Different formulas might be employed to apportion income from different activities. This would necessitate the use of separate accounting and arm's length pricing to isolate the income from various activities. On the choice of apportionment formulas, see EU Commission (20001c, Section IV.17) and Mintz and Weiner (2001).

If one of these reforms is to be truly successful it is essential that it eventually be implemented identically throughout the EU. This implies that if the HST is enacted it should be no more than a way station to the enactment of the CBT. (For other warnings of what the EU should not do if it were to shift to formula apportionment, see McLure and Weiner, 2000.)

4. Concluding Comment

The discussion of income taxation of electronic commerce is not applicable only to the taxation of electronic commerce. Rather, it highlights pre-existing problems that are accentuated by the advent of electronic commerce — classification of income, source rules, the definition of a permanent establishment, problems of transfer pricing, and tax havens. As Bird and Wilkie (2000, p. 90) have said, "The old rules of the international tax game — separate entity, arm's-length pricing, permanent establishment, non-discrimination, source, residence, etc. — decreasingly serve to carve up the international tax base in a reasonable and sustainable way, whether in the EU or more generally." In the case of tax relations between the members of the EU a system that was becoming increasingly untenable before the advent of e-commerce is unlikely to survive in its present form, because of the economic integration of the European Community.

This situation stands in marked contrast to that in the VAT area. Electronic commerce should affect the fundamental choice between some form of destination-based system and the definitive system only marginally. Also, the primary problems affecting taxation of electronic commerce are directly related to the difficulty of taxing sales of digitized products to households and unregistered traders; because the VAT system is basically sound, it can handle other forms of e-commerce as well as it handles other transactions — which is to say, rather well.

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