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To: Members of the Executive Board

From: The Acting Secretary

Subject: Harmonization of Taxes on Capital Income and Commodities in the European Community

The attached paper on harmonization of taxes on capital income and commodities in the European Community provides background material for the paper on tax harmonization in the European Community (SM/89/211, 10/19/89), which is tentatively scheduled for discussion on Friday, November 17, 1989.

Mr. Bovenberg (ext. 8760) or Mr. E. H. Gardner (ext. 4541) is available to answer technical or factual questions relating to this paper.

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# Harmonization of Taxes on Capital Income and Commodities in the European Community

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(In consultation with other departments)

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Contents

## I. Introduction

Since its inception in 1957, the European Community (EC) has aimed at ensuring the free movement of commodities, capital, and labor among the member countries. The goal of the Single European Act of 1987 is to complete the integration of markets by the end of 1992. As part of the program of integrating the markets of goods and services, the Act calls for the elimination of border controls and restrictions on capital movements.

The elimination of border controls requires some changes in commodity taxation. Specifically, the EC Commission believes it is necessary to modify administrative procedures and to achieve some degree of approximation of value-added taxes (VAT) and excises to prevent tax-induced distortions in the allocation of resources and to minimize the loss of tax revenue in EC member countries.

While completion of the single market is not planned until the end of 1992, the process of financial market integration and liberalization is well underway; the elimination of most remaining restrictions on capital movements is scheduled for July 1990. 1/ Introduction of a single license for banking services, to become effective at the end of 1992, will be the final step in the process of financial integration. In this respect--analogous to goods market integration--concerns have been raised over the potential for tax-induced distortions resulting from the increased intra-EC substitutability and mobility of financial assets and, in the medium term, of real assets, as well as for revenue loss by some member countries. Accordingly, a number of proposals have been elaborated for the harmonization and coordination of capital income taxation, with the twin objectives of promoting the efficient allocation of resources, as envisaged by the Act, and of limiting tax evasion attributable to financial integration. Harmonization proposals regarding company income taxation address the first objective, while proposals on the taxation of income from financial assets pursue both objectives.

Chapter II discusses the economic aspects of the harmonization and coordination of capital income taxation in the EC. Section 1 examines the theoretical considerations underlying tax harmonization and discusses the principles of international taxation from the standpoint of efficiency and equity. Section 2 describes current practices in the taxation of company income and income from financial assets. Section 3

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1/ Temporary restrictions on short-term capital flows will be allowed in support of member states' monetary and exchange rate policies. Greece, Ireland, Portugal and Spain have obtained derogations until the end of 1992 for the liberalization of certain types of financial services. Investment funds have been able to operate under common rules throughout the Community since October 1, 1989.

discusses the proposals for tax harmonization. Section 4 examines the likely effects of the harmonization proposals on resource allocation, income distribution and government budgets.

Chapter III investigates the main economic issues relating to the harmonization and coordination of commodity taxation. Following an overview of theoretical considerations, sections 2 and 3 describe past trends and current proposals for harmonizing VAT and excises, respectively. Section 4 examines sales taxation at the local level in the context of federal governments in the United States and Canada, and draws possible lessons for commodity tax harmonization in the EC. The economic effects of the proposals are explored in section 5.

# II. Taxes on Income from Capital

## 1. Theoretical considerations

### a. Source versus residence principle

Because the ownership and the location of the factors of production can fall under different jurisdictions, an important distinction arises in international taxation between the residence and the source principles of taxation. Under the residence principle, a country exercises a tax claim on all income earned by residents. Under the source principle, a country asserts the right to tax the income generated within its borders regardless of the residence of the income recipient. Most countries follow a mix of the two principles which exposes foreign income recipients to the risk of double taxation. Since in practice the source country has first opportunity to tax, it is typically the responsibility of the country of residence to establish provisions for relief from double taxation. Such provisions can take the form of a credit for foreign taxes against the domestic tax liability or deduction of foreign taxes from the domestic tax base, or exemption of foreign-source income from the domestic tax base--in effect following the source principle. Universal adoption of either credit or exemption would eliminate the problem of double taxation, though with different efficiency implications. While deduction does not eliminate the problem of double taxation, it can increase the national welfare of the capital-exporting country--as discussed below.

### b. Allocative distortions

Differences in the effective rate of capital income taxation among countries tend to create distortions in the international allocation of capital, saving, risk and financial intermediation. In addition, as in the closed economy case, taxes may distort the overall level of savings and investment.

The allocative distortions brought about by differences in the tax burden on the income from capital can be broadly regarded as real distortions to the extent that they affect saving and investment and/or the composition of production and spending, or financial distortions, to the extent that they alter portfolio and financing choices and thereby affect the international allocation of risk. 1/ In addition, tax systems can affect the degree of economic integration as they influence inter-country and intra-country cooperation among enterprises, including mergers.

The real allocative implications of differential tax burdens on the income from capital depend on the short-run incidence of the tax and on whether taxes are levied according to the location of investment or the residence of the saver. If the tax can be shifted to the immobile factor of production (e.g., labor), no distortions will arise from the application of the source principle, whereby the tax burden varies according to the location of the investment. If the tax cannot be shifted--for example, because of short-run rigidity of real wages--and capital is mobile, source taxation at differential rates would result in an inefficient allocation of capital. In the long-run, differential tax burdens on capital are absorbed by labor in the form of differential labor productivity and real wages. 2/ This allocation of capital violates the principle of capital-export neutrality, which states that taxes should not alter the locational choice of investment.

If the tax burden is not shifted and varies according to the residence of the savers or investors, the tax-induced wedge between the marginal rates of time preference of different savers will force an inefficient allocation of global saving and affect the distribution of global capital ownership. This type of distortion violates capital-import neutrality, by which income from capital originating in a certain country should be subject to the same tax burden, irrespective of the country of residence of the savers or investors. An overall reduction in foreign investment with possible efficiency costs also results from double taxation of foreign investment income arising from the imposition of separate and not fully integrated source and residence taxes.

Financial distortions can be identified as tax-induced distortions in the financial structure of enterprises and in the portfolio composition of individuals that impede the efficient distribution of risk and allocation of financial intermediation across countries. To the extent that the tax systems of capital importing countries

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1/ While conceptually useful, the distinction between real and financial distortions loses significance in the economic choice of agents given the close integration of the financing and investment decisions of enterprises, and the saving and portfolio decision of households.

2/ The extent to which the tax is borne by labor also depends on the relative factor intensity of the traded and non-traded sectors. If the traded sector is relatively capital intensive, labor will bear more than the full burden of the tax. See Harberger (1982).

discriminate against equity flows in international transactions, the capital importing countries will rely more heavily on debt financing and assume a greater portion of economic risk than socially desirable. Moreover, to the extent that the investment and financing decision are interdependent, tax distortions on the financing or portfolio side are also likely to interfere with the efficient allocation of real capital and savings, as discussed above.

Tax systems can also interfere with the optimal level of international economic integration when they discriminate between domestic and cross-country mergers or acquisitions. Such discrimination can arise essentially from two sources. First, international mergers incur a higher tax burden than domestic mergers, if the capital gains attributable to the contributing or acquired company are taxed at the time of the merger, rather than upon realization as is the practice for domestic mergers. The second tax obstacle results from different degrees of personal and corporate tax integration. Specifically, the acquiring company may face a higher cost of capital if the tax advantages of dividend distributions are not extended to foreign-source income, and the after-tax value of the dividend distributions of the acquired company may decline if the imputation system is not extended to foreign shareholders. 1/

c. Principles of taxation and neutrality criteria

As a general proposition, capital-export neutrality would obtain if the residence principle were uniformly applied to all income from capital accruing to resident investors, however the tax burden is split between the personal and the corporate taxpayer. 2/ In this case, differences in the corporate and personal tax burdens with other countries would not affect the locational choice of investment. 3/

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1/ For an example relating to German and U.K. companies, see Chown (1989).

2/ Taxes on the income from capital can be levied at the corporate and personal levels. In the classical system, the corporate and personal tax systems operate independently of each other and income is effectively taxed twice. Alternatively, the corporate and personal tax systems can be integrated, by imputing corporate income, in whole or in part, to the shareholders and taxing it as personal income. In this case, the corporate tax acts as an advance tax, allowing taxes on undistributed profits to be collected on an accrual basis. The method of integration can take the form of a tax credit at the shareholder level, or of a deduction or preferential tax rate for distributed profits at the corporate level. Because of interest deductibility at the corporate level, there is generally no difference between the two systems in the case of debt financing.

3/ If claims on domestic and foreign capital are not perfect substitutes, the international pattern of investment would also be affected.

Conversely, capital import neutrality would obtain under uniform source taxation of investors. In this case residents of all countries would face the same tax burden on saving directed to any particular country. Differences in effective source tax rates across countries would distort the locational choice of investment, but would not induce differences in the saving propensity of individuals residing in different countries. 1/

Unless effective tax burdens on the income from capital are equalized across countries, tax systems can be targeted to meet only one of the two neutrality criteria. Broadly speaking, from the standpoint of global welfare maximization, the choice between the two criteria depends on the degrees of intertemporal substitution in consumption and of international substitutability of investment. With relatively low intertemporal substitution in consumption, (i.e., low interest elasticity of savings) and relatively high international capital substitution (i.e., high elasticity of investment to after-tax rate of return differentials), violations of capital-import neutrality should be less costly than violations of capital-export neutrality. 2/

The identification of capital-export neutrality with the residence principle, and of capital-import neutrality with the source principle of taxation holds under a very general definition of residence and source, and only if profit taxes are not shifted to either other factors' rewards or goods prices, and if profit taxes are not benefit charges, i.e., the tax burden is not offset by proportional benefits. The taxation of income from capital at both the corporate and personal levels, allowing for international direct and portfolio (debt and equity) investment, involves a high degree of complexity in the design of a tax system that meets one of the two basic criteria of neutrality. Consistent application of one of the two principles is easier at the corporate level than at the personal level. Enforcement of the residence or source principle at the company level can achieve neutrality in the case of foreign direct investment. For foreign portfolio investment by individuals, enforcement of the residence or source principle becomes necessary at the personal level.

*At the company level, tax exemption by the country of residence,* consistent with the source principle, results in capital-import neutrality, if the source country does not impose a withholding tax on dividends distributed to the parent company or a differential tax rate on resident versus foreign-owned company income. Capital-export neutrality requires, under the residence principle, that the country of residence provide a refundable credit for foreign taxes paid and recognize foreign-source losses for domestic tax purposes. All foreign source profits should be attributed to the parent company without any

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1/ Again, saving incentives would be equalized only if claims on domestic and foreign capital were perfectly substitutable.

2/ See Giovannini (1989). See Vogel (1988) for arguments in support of source taxation.

domestic tax deferral on retained foreign-source income. However, in practice, deferral is ordinarily extended to foreign subsidiary income and the foreign tax credit is subject to limitations on a per-country or overall basis, as well as on the basis of income categories--as in the United States after the 1986 reform.

Harmonization of company tax systems--intended for a common neutrality objective--is desirable for allocative efficiency only if tax burdens are not correlated to the level of public sector services rendered to corporations (infrastructure, legal structure, etc.) among the countries involved in the harmonization effort, that is, if taxes are not benefit-charges. Otherwise, harmonization of effective tax rates must take place net of differences in such benefits. Further, if profit taxes are actually benefit charges or they are shifted to the rewards of other (immobile) factors of production, differential source taxation is fully compatible with allocative neutrality, since in both cases net tax burdens are zero. The conditions for efficiency when profit taxes are shifted to product prices become much more complex. 1/ In particular, neutrality would require source taxation of profits (i.e., exemption by the residence country) and border tax adjustments on traded goods. 2/ Harmonization may also prove to be more distortionary, if company tax systems retain their present non-neutrality with respect to inflation and inflationary differences subsist among countries. 3/

Violations of the residence principle at the personal level of taxation need not always interfere with capital-export neutrality. The most common departure from the residence principle derives from the fact that, while de jure most countries tax individual residents on the basis of their global income, de facto income generated by foreign asset holdings often goes unreported to the tax authority. However, to the extent that foreign or offshore, notably Eurobond, markets serve as the marginal intermediation channel between individuals and enterprises from different countries, differences in tax burdens across assets at the individual level will be fully absorbed by inframarginal asset holders. Hence, outflows of personal savings through such markets do

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1/ See Musgrave (1967) for a full taxonomy of tax neutrality.

2/ See Chapter III below.

3/ Application of the residence principle with full foreign tax credit will fail to uphold capital export neutrality if foreign exchange gains and losses are accorded a preferential (or discriminatory) tax treatment. With a difference in inflation rates between the home and foreign countries, the corresponding expected rate of depreciation (or appreciation) of the domestic currency vis-a-vis the foreign currency will result in different tax burdens on equivalent foreign and domestic financial assets, even under the residence principle, if foreign exchange gains are taxed at a different rate than interest or dividend income, or simply if they are taxed on a realization rather than an accrual basis.

not affect the location of investment, as long as domestic enterprises can borrow those funds on the same terms as foreign enterprises.

In the absence of full tax harmonization, neutrality depends on whether the effective tax burden borne by capital is determined by the country of residence or source, rather than on who gets the tax revenue. If the source country relinquishes its right to tax, the country of residence gets the revenue. If both countries exercise their right to tax and capital export-neutrality is met through the use of a foreign tax credit, the revenue is shared by the two countries, with a possible net revenue transfer to the source country if its tax burden exceeds that of the residence country. As discussed above, given the priority of the source country in determining its tax claim, capital-export neutrality effectively depends on the adoption of foreign tax credit by the residence country. However, while beneficial from the point of view of international welfare, this choice does not necessarily maximize the welfare of the residence country. From the standpoint of the national welfare of a capital-exporting country, capital will be best allocated when the after-foreign tax return on foreign investment and the domestic pre-tax rates of return are equalized. This condition is met if foreign taxes are deducted from the domestic taxable base, rather than credited against the domestic tax liability. 1/

d. Inter-country equity

Equity in the distribution of the tax revenue between the source and the residence countries assumes meaning only in the context of an explicitly stated international welfare function. Inter-country equity encompasses not only corporate income taxation, but also withholding taxes on dividend and interest payments to non-residents, and the degree of integration of the personal and corporate tax systems across countries. Given the priority of the source country in exercising its tax claim, the overall level of taxation and its distribution between the source and residence countries are effectively determined by the tax treatment of foreign-source income in the residence country.

The concept of inter-country equity is also at issue when differential source tax burdens can be exploited for tax fraud and evasion by individuals and by corporations, in the form of financing and pricing arrangements that shift the tax burden to low-tax jurisdictions, with implications for gross revenue and its allocation among countries. In particular, an equitable distribution of the tax base of a multinational corporation among the countries in which it operates requires an operational definition of the territorial tax base. At present, the allocation of profits of a multinational corporation operating in most countries follows the separate accounting method, which assigns profits to the different countries in which the multinational corporations

1/ See MacDougall (1960), and Caves (1982) for a review of the argument.

operate, applying arm's-length prices to intracompany transactions of goods and services. Implementation of this method of allocating profits to the different jurisdictions is particularly difficult when the company conducts highly integrated activities across countries. Determination of arm's-length prices of highly differentiated finished or semifinished products and intangibles (such as royalties, brand names, marketing, research and development) is particulary difficult lacking comparable transactions among unrelated buyers and sellers. Thus, differences in effective tax rates can be exploited to reallocate taxable profits to low-tax jurisdictions, through transfer pricing manipulations and financing arrangements, such as shifting debt burdens and the associated interest deductibility to high tax jurisdictions. To prevent such practices, countries apply arm's-length pricing rules and often impose restrictions on thin capitalization--i.e., the reliance on debt financing for subsidiaries in the high tax jurisdictions--in the form of limits on debt-equity ratios.

An alternative approach to the definition of the territorial base is that of formula apportionment, by which profits are allocated for tax purposes according to the geographic distribution of easily identifiable factors, such as the value of assets, payroll or sales across jurisdictions. Under unitary taxation, the apportionment formula is imposed on the global income of parent corporation and its affiliates, with a consequent risk of double taxation (or undertaxation) if the same apportionment formula is not adopted by all jurisdictions. Whether formula apportionment offers an equitable distribution of tax revenues, depends on the correlation between the factors entering the formula and the economic concept of taxable income. Like many presumptive income tax rules, it is debatable whether formula apportionment provides an adequate proxy for taxable income (e.g., it assumes the same profit margin for all tax jurisdictions). While formula apportionment has gained acceptance within federal systems such as Canada and the U.S., 1/ it has been widely rejected at the international level. Factors typically used for the apportionment of the taxable base may be easily identifiable conceptually, but their determination becomes particularly onerous and subject to arbitrariness in the absence of a common currency and a common accounting and legal framework among tax jurisdictions. 2/

The Canadian example of a uniform definition of taxable income and a common apportionment formula is a more attractive model than the U.S. example, where significant differences remain in the definition of the formula across states. The Canadian approach eliminates double taxation and reduces the compliance costs of corporations operating across borders. In any event, whether adhering to separate accounting or adopting formula apportionment, uniform tax accounting would be a logical companion to more uniform business accounting practices. Besides removing technical barriers to capital flows, this may render

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1/ See Appendix I.

2/ See Kopits and Mutén (1984).

income measures more informative and comparable across countries, thereby potentially improving decisions based on information contained in income measures. 1/

Inter-country equity is also a relevant criterion in the field of taxation of portfolio income. Again, the basic question over the fair distribution of revenue between the source and residence countries depends on the choice of international welfare function. Tax-induced portfolio investments to low tax countries clearly violate inter-country equity, if the associated income flow goes unreported to the residence country. However, such flows need not entail investment distortions. To illustrate, consider two situations, one with a uniform rate of taxation across countries and the other with one low-tax country acting as the financial intermediation center for savers and investors from different countries, de facto under the source principle. As long as all participants have access to this financial center on the same terms, the two situations would be identical in terms of locational decisions, except for the location of financial intermediation. The differences would be in the overall tax burden, the distribution of tax revenue among jurisdictions, and the overall level (but not distribution) of savings and of investment.

## 2. Present tax treatment

### a. Company income taxation

Table 1 summarizes the main features of the corporate tax systems of EC member countries. The table broadly illustrates the degree of diversity of these systems although a more succinct measure of tax burden differentials is presented in section 4, where estimates of the effective tax burdens on new investments are presented for each EC member country. While no formal process of harmonization has yet been agreed upon, a certain degree of convergence is evident in the reduction of corporate and personal statutory income tax rates begun in the United Kingdom (and outside the EC) in the early 1980s and followed in most industrial countries (Table 2). The reduction in statutory tax rates has been coupled with base broadening mainly through the phase-out of accelerated depreciation allowances and investment tax credits. Considerable differences in the degree of integration between personal and corporate taxation remain, without any apparent movement toward convergence (Table 3). The degree of enforcement also varies across EC countries, with enterprises being given a considerable degree of discretion over the taxes they pay in some cases.

As regards the tax treatment of foreign direct investment, Table 1 indicates the variety of methods utilized by residence countries to alleviate double taxation. In addition to taxing corporate income,

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1/ Steuerle (1989) emphasizes the link between improvements in financial and tax accounting.

*source countries typically impose a withholding tax on dividend* distributions to foreign shareholders. Such withholding taxes violate the principle of capital-import neutrality. While the possibility of channelling dividend payments through a third (treaty) country can reduce the impact of high bilateral withholding rates, attempts to limit this form of treaty shopping have been undertaken by a number of countries. 1/

Double taxation is minimized by the exemption and credit provisions established by the residence country, often in the context of bilateral double-taxation agreements. The global allocative implications of these various provisions for double taxation relief are ambiguous given the complexity of the arrangements. However, even under the credit system, the tax burden will often coincide with that of the source country. On the one hand, because of limitations on the foreign tax credit, enterprises typically pay the source country tax when this is higher than the tax that would be borne under the residence principle. On the other hand, because companies can often defer the taxation of foreign subsidiary income (but not branch income) until repatriation, they can effectively elect to be taxed in the source country only, if its tax burden is lighter than the one that would be borne under the residence principle.

b. Taxation of financial investment income

Table 4 shows the present system of taxation of personal financial investment income in the EC. All countries, in principle, tax residents on their global income. Relief from foreign source taxes, i.e., withholding taxes on dividends and interest, is generally provided through a credit or deduction system. However, the general absence of withholding taxes on interest paid to nonresidents and of reporting requirements to foreign tax administrations have enhanced the scope for tax evasion through foreign investments, with source taxes de facto the only form of taxation. Member countries' administrative practices have adjusted to the situation in a number of ways. Revenues have been protected by either capital controls (restrictions remaining in France, Greece, Ireland, Italy, Portugal and Spain), full taxpayer identification and communication of all financial transactions to the tax authority (Denmark, France and Spain) , or the requirement that foreign assets be purchased or held through domestic financial institutions (Denmark, Italy). Concerns over the adverse effects of such measures on interest rates, capital outflows, and the developments of financial markets have led other countries to allow complete taxpayer anonymity and unrestricted capital flows, relying fully upon income declaration by the individual investor for revenue collection (Germany, Luxembourg). The remaining three countries, absent capital controls, rely on some form of enforcement at source, i.e., withholding with various degrees of coverage (Belgium and the United Kingdom) or

1/ See, also, OECD (1987).

reporting of income (interest income reporting in the Netherlands and in the U.K. where no withholding has taken place). Relatively high succession taxes, combined with the possibility of reporting to the tax authority by domestic financial institutions provide further incentive toward foreign financial investment (Table 4).

Discriminatory provisions in national tax systems that favor individual investments in domestic securities--e.g., in the form of security composition requirements on tax-exempt retirement funds or accounts and tax exempt small savings accounts--can offset in part the tax advantages of capital flight. However, such schemes may induce additional distortions in the composition of portfolios.

#### c. Other taxes

In addition to taxes levied on the income from capital, capital is taxed directly in a number of ways. Property taxes are imposed in all countries at the local level. A personal wealth tax is levied in a number of countries and, at the corporate level, taxes based on an assessed value of capital or net worth are levied in France, Germany and Luxembourg. Capital duties, i.e. indirect taxes on the raising of capital, constitute another burden on capital formation. The capital duty was already harmonized in the EC in 1969 and, in a 1985 amendment, countries have been given the possibility to lower the rate between 0 percent and 1 percent. 1/

While taxes levied on labor income have not been treated explicitly here because of the lesser international mobility of labor, they are relevant to the discussion of capital income taxation because of the unavoidable link that must be maintained between the taxation of income from a corporate and an unincorporated entity. Thus, pressures to harmonize capital income taxation have implications for countries' discretion over labor income taxation. Moreover, because differential tax burdens on highly mobile forms of labor in managerial positions can be shifted on to capital in the short run, differences in the taxation of labor income can have the same adverse allocative implications as differences in the taxation of capital income.

### 3. Proposals for tax harmonizaion

As discussed in the section above, large differences remain among member countries in all areas of taxation of capital income. Concern over the distortionary effects of such differences has long motivated efforts by the EC Commission to advance proposals for a more uniform tax treatment of income from capital. Such efforts at harmonization of direct taxes have gained momentum under the planned liberalization of capital movements by mid-1990.

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1/ Only Belgium, which halved its rate, and the U.K., which eliminated the capital duty, have taken advantage of this amendment.

a. General objectives

The Commission has identified three areas for convergence in the taxation of income from capital: company income taxation; taxation of interest income; and specific provisions that favor domestic financial investments. 1/

The Commission favors not only increased coordination in the area of company taxation in the Community but also an approximation of tax practices and statutory rates for a number of reasons. First, approximation in this area would enhance the transparency of tax systems, reduce compliance costs, and promote inter-company cooperation in the form of joint ventures and mergers. Second, tax competition among jurisdictions, in the absence of a formal approximation process, would force a process of convergence that may be too slow, leaving the Community open to the distortions inherent to the present tax systems, and that may lead to an overall suboptimal level of taxation. This may be true, particularly in light of the potential repercussions of effective corporate tax rates on personal income tax rates if a link between personal and corporate income taxes must be maintained to avoid unintended breaks between incorporated and unincorporated forms of business activity. Third, although the precise neutrality goal underlying the Commission's proposals remains ill- defined, both criteria--capital-export and capital-import neutrality--could be met simultaneously within the Community through effective tax rate approximation.

The call for some form of coordinated tax enforcement is predicated on the pressures of tax evasion that will result from full capital mobility with differential tax burdens at source if tax controls remain constrained by national boundaries. Under such pressures, the traditional channels of financial intermediation would be dislocated and tax revenue redistributed in a way that is incompatible with the objectives of intra- and inter-country equity and efficiency. The opportunity for tax evasion provided by differential tax burdens underscores the role of externalities in the taxation of mobile factors, and the inherent risk of an excessive bidding down of rates in an uncoordinated solution. This concern centers mostly around the taxation of non-resident interest income, which, unlike dividends, is generally exempt from withholding at source.

No proposals have yet been advanced by the Commission for the elimination of discriminatory provisions favoring investment in domestic securities that result from regulations and portfolio composition requirements applying to institutional investors and to investment funds that benefit from particular tax advantages, such as tax-exempt retirement funds and small size tax exempt bank deposits.

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1/ See Commission of the European Communities (1988a).

b. Company income taxation

Proposals in the area of company income taxation address two main goals: first, the elimination of double taxation, and second, the harmonization of company tax systems. The Commission's initial proposal for the elimination of double taxation of foreign source company income dates back to 1969. 1/ The proposed directive would allow member states to chose between exemption and, for majority-owned affiliates (subsidiaries and branches) domestic taxation with credit for foreign taxes. The proposed directive also envisages the abolition of withholding taxes on dividends paid to the parent company levied by the host country, except for source countries that provide preferential tax treatment to distributed profits (Germany and Greece). As described above, the two systems of double tax relief respond to different allocative criteria--capital-export neutrality in the case of a credit system, and capital-import neutrality in the case of a deduction system. No definite choice between the two principles has yet emerged. Under the recent proposal for an EC-company statute, cross-border mergers and joint ventures incorporating as European companies would be able to consolidate the group's income for taxation purposes, effectively allowing enterprises to opt for the credit system even in countries where it is not presently in use.

The inconsistency between the two allocative goals of capital-import and capital-export neutrality at the corporate level would disappear if the corporate tax burdens were equalized across countries. Such equalization, or at least approximation of corporate tax systems was the object of a 1975 proposed directive. 2/ The main features of the proposed directive are: (1) a single statutory corporate income tax rate, set between 45 percent and 55 percent; (2) a common (partial) imputation system along the lines of the French avoir fiscal method, with a single rate of credit to the shareholder for the company tax underlying the distributed dividends; 3/ (3) the source principle with respect to the imputation system, with the tax credit set and its budgetary cost borne by the host country, unless differently agreed under a bilateral treaty, with a clearing house mechanism set up to deal with the inter-country transfers resulting from the extension of tax credits to foreign-source dividends; (4) a 25 percent withholding tax on all dividends except for dividends distributed by a subsidiary to a parent corporation in the EC, and where own resident investors are known to the tax authority or shares are registered. The proposed directive was never adopted, as the European Parliament stressed the prior need to harmonize the rules of computation of the company tax base. The Commission still supports the basic goals of the 1975

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1/ See Commission of the European Communities (1969a).

2/ See Commission of the European Communities (1975a).

3/ The rate of the tax credit is to fall in a range set at 45 to 55 percent of the amount of corporation tax at the normal rate on a sum representing the distributed dividend increased by the tax.

proposal for a directive on the harmonization of company tax systems. An obvious modification would be necessary in the statutory tax rate structure, adapting it to the lower rates presently in effect. Another possible change envisaged by the Commission would be the adoption of a full imputation system. Further measures towards harmonization are contained in a proposed directive on the harmonization of the provisions for the carry-over of losses. 1/ The proposal would limit the carryback of losses to three years and place no limits on their carry forward.

The Commission is presently addressing the concern expressed by the European Parliament over the lack of uniformity in the computation of the company tax base by focusing on the harmonization of rules for the determination of taxable profits of enterprises: depreciation allowances, capital gains, stocks, provisions for reserves, inventory valuation adjustments, and deductible charges and expenditures. 2/ The basic purpose of the proposal presently being drafted is to establish greater transparency in the tax treatment of corporate income, to meet the objections to the 1975 proposed directive and to prevent, through the harmonization of the rules underlying the computation of the tax base, indirect subsidization or taxation. Under this draft proposal, tax incentives would have to be administered in a more transparent fashion through investment tax credit and/or preferential statutory company income tax rates, rather than through generous depreciation allowances, or other alterations of the tax base. Sectoral or regional subsidies could still be employed to remedy genuine structural problems.

The Commission has proposed two other directives for the removal of tax obstacles to cooperation between enterprises of different member countries. A directive issued in 1969 proposes to eliminate the tax disadvantages of international mergers relative to domestic mergers by deferring the taxation of any capital gains relating to the assets of the contributing or acquired company until they are realized, as is done for domestic mergers. 3/ Moreover, to safeguard the tax interests of the country in which the company is established, the proposed directive requires that the original value of the assets of the contributing company be carried separately in the books of the new permanent establishment. Another proposal put forth in 1976 sets out common rules for transfer pricing and establishes a binding arbitration procedure that would eliminate the risk of double taxation at the enterprise level. 4/

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1/ See Commission of the European Communities (1984) and (1985a).
2/ A description of an earlier draft of the proposal is found in Kuiper (1988).
3/ See Commission of the European Communities (1969b).
4/ See Commission of the European Communities (1976).

c. Taxation of interest income

The planned progressive liberalization of capital flows in the Community is bound to exercise pressures on revenue collection in all countries, but particularly in those that have been relying on capital controls, and/or on weak tax enforcement. In response to these concerns, the Commission considered three possible, and not necessarily mutually exclusive, ways to prevent tax-induced portfolio reallocation and corresponding loss of tax revenue: (1) automatic disclosure of interest earnings to the tax authority of the country of residence of the investor supported by tighter limits on bank secrecy and bearer securities; (2) a common minimum withholding tax imposed at source, applicable to all EC residents; (3) increased coordination and exchange of information between the tax authorities of the source and residence countries. The first solution was seen as placing a heavy administrative burden on financial institutions and running counter to a long-standing tradition of bank secrecy in some member states. 1/ The third solution would be limited by the provisions of a 1977 directive whereby tax authorities are not required to obtain for and transmit to other tax authorities information that they are prevented from collecting under their own laws or administrative practices. 2/ A proposed amendment to this directive would, however, no longer allow tax authorities of member states to refuse sharing information on the grounds of administrative impediments. 3/ The Commission initially opted for the second approach, 4/ but in the face of strong opposition by some member states, stronger emphasis is now likely to be placed instead on measures falling under the third approach. The concern over tax evasion can also be addressed at the national level, where tax enforcement can take the form of tax identification of all asset holdings of residents, and thus possibly capital transfers abroad by residents. Such provisions, as practiced in Denmark and France, are of course, fully consistent with the projected liberalization of capital movements.

Following the second approach, the Commission's initial proposal--which has not been withdrawn--envisaged the establishment of a common minimum withholding tax on interest income for EC residents set at 15 percent. The tax can be imposed as a final tax or as an advance payment creditable against the ordinary income tax. Where the withholding tax is allowed as a credit or refunded in another member state, the country of source bears the budgetary cost of crediting or refunding the tax, unless differently agreed under bilateral treaty. In consideration of the risk of inducing capital outflows to third countries with adverse effects on interest rates in member countries and on EC financial

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1/ Bank secrecy is generally protected by banking tradition, though Germany and Luxembourg gave bank-secrecy legal protection in 1989.
2/ Commission of the European Communities (1977).
3/ Commission of the European Communities (1989a)
4/ Commission of the European Communities (1989b).

institutions, the proposal provides for numerous exemptions, which dilute its effectiveness considerably. The proposed directive only applies to debt instruments issued by EC residents, and defers to national authorities the tax treatment of interest from Eurobonds, interest received from non-EC residents, interest on small-size savings deposits, interest received by non-EC residents, interest received by own residents when full taxpayer identification exists, and intra-enterprise interest income. While in principle the proposed directive also applies to the interest income derived from investment unit trusts, some ambiguity remains over the tax treatment of interest capitalized through the share value of an investment unit trust that does not redistribute the interest. 1/ The proposal does not preclude the possibility of multiple rates, or of higher rates on own residents than non-residents. The proposal also views the minimum withholding tax as a possible prototype of a common tax on financial investment income tax in a wider international context, to be negotiated with the main EC partners, primarily among OECD countries.

## 4. Effects of the Commission's proposals

### a. Company income taxation

#### (i) Effective rates of taxation

In order to analyze the economic effects of company income tax harmonization, the complexities of the tax system must be reduced to a succinct measure of the effective tax burden. The concept of the corporate tax wedge, defined as the difference between the market rate of return on financial assets and the gross (pre-tax) rate of return on investment required to cover the cost of financing, provides a useful summary measure of the effect of tax systems on marginal investment decisions. Estimates of corporate tax wedges for the twelve EC member countries derived from the statutory tax treatment of corporate profits and capital--including the statutory corporate income tax rate, capital cost recovery allowances, grants and investment credits, wealth and net worth taxes--are presented under different tax scenarios in Table 5. 2/ The absolute value of the tax wedge (subsidy, if negative) under current systems, or announced and proposed tax reforms, describe

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1/ However, the proposed directive explicitly disallows interest capitalization through discount bonds, requiring that withholding be applied to the notional interest component of the capital gain on such instruments.

2/ See de la Fuente and Gardner (1989) for a complete discussion.

the situation that would prevail in the absence of any harmonization. 1/ Large differences in the effective tax burden on capital investment would appear to prevail within the EC, with wedges ranging from 4.9 to 0.3 percentage points, depending on the underlying inflationary assumption. Two inflationary variants of this scenario are considered: (a) a common inflation rate of 2 percent; (b) three levels of inflation (2, 5, 10 percent) with countries grouped according to their recent inflationary performance. Germany is by far the highest corporate tax country, while Ireland, Denmark and Luxembourg stand at the other end of the spectrum.

The calculation of tax wedges under current tax systems is extended to simulate the impact of two different harmonization scenarios--cases 2 and 3. In case 2, corporate tax wedges are calculated assuming the harmonization of some rules for the determination of the taxable base of enterprises, 2/ namely: full first-year convention for depreciation, allowing enterprises to claim the full amount of depreciation the first tax year, irrespective of when in the year the investment takes place; reduction of the depreciable base by the amount of the subsidy received through investment tax credits and deductions; elimination of accelerated depreciation; elimination of depreciation of capital not yet in use; elimination of indexation of the depreciable base; and a choice between straight-line and up to double declining-balance methods for both buildings and machinery, with the possibility of a switchover from declining balance to straight line during the life of the asset. 3/ Country differences would remain with respect to statutory rates of taxation, investment grants and depreciation rates. Under this hypothetical "base harmonization" scenario most countries would lose some form of tax advantage presently extended to corporate investment, but more liberal rules for depreciation would more than compensate for that loss in most countries and the average wedge would decline. Only Denmark and Luxembourg would experience a rise in the wedge. Base harmonization would not, however, contribute significantly to the harmonization of the tax burden relative to case 1, as seen by the very modest decline in the standard deviation. It would result in some change in country ordering. In particular, Denmark would lose its relatively low tax status, in large part on account of the elimination of indexation of the depreciable base.

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1/ The reforms considered are: Belgium: reduction of the investment deduction from 13 to 5 percent and the corporate income tax rate from 43 to 38 percent; Denmark: reduction of the corporate income tax rate from 50 to 35 percent; Germany: reduction of the corporate income tax rate on retained earnings from 56 to 50 percent.

2/ Based loosely on the description of an earlier draft proposal by the Commission provided in Kuiper (1988).

3/ For many countries the declining balance method is not currently allowed. In that case the declining balance rate is derived as a multiple of the current straight line rate.

Case 3 explores the possible advantage--in terms of convergence of effective rates--of equalization of statutory income tax rates. Tax wedges are calculated under the same conditions of Case 2 with the added harmonization of statutory corporate income tax rates (to the weighted average of Case 1, i.e., 43 percent) and the elimination of all wealth and net worth taxes, and of local income taxes. 1/ Country differences remain with respect to capital recovery allowances, investment tax credits and deductions (used in Belgium, Luxembourg and Spain) and degrees of integration and withholding taxes. Under the chosen assumptions, the harmonization of statutory rates of taxation would reduce both the average level of taxation and its dispersion across countries, and would alter substantially the country ordering relative to the base case, i.e., Case 1. In particular, Germany would lose its high tax position, moving closer to the EC average and be replaced by Italy, Spain and the Netherlands. Ireland and Denmark would be moved close to the average and the low tax position would be taken by Luxembourg and France.

In general, the results do not change markedly between the two inflation variants of the simulations, suggesting that harmonization measures would not exacerbate the distortionary effects of inflation non-neutralities embedded in corporate tax systems.

(ii) Allocative effects

The creation of the single market in the EC and the removal of the remaining impediments to intra-EC trade (border controls, differential standard requirements), should increase the locational responsiveness of enterprises to differential tax burdens. Moreover, with the complete integration of financial markets, differences in effective company rates would become the primary source of allocative distortion. 2/

1/ The elimination of corporate wealth and net wealth taxes, while not envisaged by the Commission's 1975 proposal for the harmonization of company tax systems, has nevertheless been mentioned as a desirable objective.

2/ In the EC context, location decisions of U.S. multinationals can be expected to become more sensitive to intra-EC differences in effective tax rates after the U.S. Tax Reform Act of 1986. Under the U.S. foreign tax credit provisions, U.S. corporations pay the highest of the U.S. and foreign tax liability on branch income and subsidiary dividends from abroad. The 1986 Tax Reform lowered the U.S. effective rate of taxation on foreign income and, therefore, may have increased the number of firms in an excess credit position for whom the foreign tax rate is the marginal tax rate (although excess credits can be deferred by not repatriating subsidiary income). See Ault and Bradford (1989).

In particular, if financial market integration in the EC will give enterprises from all member countries access to the same financing opportunities, the approximation effective company tax rates would go a long way towards meeting the conditions for investment neutrality. 1/ Given the difficulty of enforcing the residence principle for the taxation of portfolio income in the EC--see below--the equalization of effective company tax rates would be necessary for complete neutrality. The merits of harmonization or approximation of company tax systems should be assessed by the likely gain in the allocative efficiency for EC member countries.

The approximation of effective rates of company taxation is likely to produce some efficiency gain, but its quantification remains highly controversial given the ambiguous empirical evidence on the allocative effects of tax rate differentials across countries and in federal systems. 2/ In principle, investment flows across jurisdictions should respond to tax-induced changes in the net rate of return in the same way as they do to changes due to other economic factors. Statistical investigation of the effect of taxes on direct foreign investment by multinational enterprises indicates that capital flows are in fact responsive to tax burden differentials, although some studies fail to find statistically significant effects. 3/ Similarly, tax rate differentials appear to have the expected effect on dividend remittance or retention of earnings of foreign subsidiaries. 4/ Evidence from cross-states differences in effective tax rates in the U.S. indicates that state taxes do affect the geographical pattern of business location, although, again, the effects are usually small. 5/ Some observers have argued that competition among tax authorities prevents taxes from diverging sufficiently to have a statistically measurable

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1/ With inflation differentials and different tax rates applicable to foreign exchange gains and losses, firms of different member states could alter their cost of financing by assuming foreign exchange debt. Where discriminatory provisions on the financing side favor domestic over foreign enterprises--preferential credit, tax incentives for the purchase of domestic assets--capital export neutrality would be maintained if the tax benefits are entirely absorbed by domestic (inframarginal) savers, or, in the case in which they reduce the cost of capital to the firm, if the same tax conditions for financing prevail regardless of whether the enterprises invests at home or abroad.

2/ For a description of the Canadian and U.S. corporate tax systems, see Appendix I.

3/ See Snoy (1975), Kopits (1976), Caves (1982) and Alworth (1988). For empirical studies on the effect of taxation on foreign direct investment in the U.S. and a review of the literature, see Slemrod (1989).

4/ See Kopits (1972), Hartman (1981).

5/ See Papke and Papke (1986) and Papke (1988).

impact to location decisions. 1/ In their view, the phenomenon of tax competition suggests indirectly that tax rate differentials do influence businesses in making locational choices. In all, tax factors appear to have the expected effect on capital flows, though the statistical weakness of the empirical results may reflect the fact that more significant differences in a host of other factors affecting capital movements exist among countries or within federal systems. The omission of any such factor would bias the empirical results obtained. One factor that is difficult to capture empirically is the level of tax-financed benefits that enter the production function. To the extent that taxes are benefit charges, a measure of net tax burden would be necessary in modelling the locational choice of enterprises.

Some estimates of the potential steady state effects of differential effective tax burdens on the allocation of capital in the EC and the attendant efficiency loss have been derived using the tax wedge measures presented above (Table 6). 2/ The simulations are based on very simplified assumptions of fixed and immobile labor endowment, a neoclassical constant returns-to-scale production function, profit maximization of enterprises, non-benefit and non-shifted company taxes. Simulations are carried out under two different assumptions about the supply of capital: (a) a fixed but mobile capital stock within the EC, assumed to be a closed economy; (b) a fixed but mobile world capital stock (consisting of the EC, Japan and the U.S.), with the EC treated as a large open economy. The equilibrium levels of output and of the capital stock are expressed as indices. The base case 1 (= 100) corresponds to the equilibrium allocation of capital under current or proposed effective tax rates in the EC (Table 5). 3/

Changes in the capital stocks, output indices, and interest rate are determined solely by the changes in effective tax rates in the EC. Because factor supplies are assumed fixed, albeit mobile in the case of capital, the aggregate output index--EC output when Japan and the U.S. are left, world output when they are included--provides a measure of the efficiency gain ensuing from harmonization.

As discussed in the previous section, harmonization of the base, as described under scenario Case 2, does not significantly reduce the dispersion of effective tax rates and consequently produces no

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1/ See Benson and Johnson (1985).

2/ A complete description of the methodology and the results is provided in de la Fuente and Gardner (1989).

3/ Effective tax rates for Japan and the U.S. are defined endogenously so that the allocation of capital among the EC, Japan and the U.S. in the base corresponds to the actual distribution.

efficiency gain--the ouput index remains unchanged. 1/ Harmonization of rates, scenario Case 3, contributes to the convergence of effective tax rates and results in some, albeit small, efficiency gain. 2/ The average effective tax rate of the EC is reduced in both cases, resulting in an increased demand for capital. 3/ Under the closed economy assumption, the increased demand for capital causes the interest rate to adjust upward. Under the open economy assumption, the rise in the interest rate spills over to the other two countries forcing a reallocation of capital towards the EC.

The direction of the effects on EC member countries is related to the changes in their relative tax position. When the EC is taken as a closed economy, tax base harmonization produces the largest loss of capital in Denmark (-7.9 percent) and Luxembourg (-7.7 percent), and the largest gain in France (+4.4 percent). The added harmonization of statutory rates (and elimination of local, wealth and net worth taxes) produces the largest cumulative loss of capital in Ireland (-18.9 percent) and the largest cumulative gain in Germany (+16.9 percent). The gains are magnified (Germany +22.5 percent) and the losses reduced (Ireland -15.0 percent) when Japan and the U.S. are taken into account, because of the attendant reallocation of capital towards the EC (EC capital stock rises by 4.7 percent under case 3). Bearing in mind the simplistic assumptions underlying the model, the results indicate in broad terms that the efficiency gain from harmonization appears to be small, especially in light of the degree of adjustment required of some EC member countries.

While the harmonization of the rules of computation of company taxable income (case 2) may not contribute directly to allocative efficiency, the results of Table 7 do not take into account the possibly significant efficiency gain resulting from increased transparency and reduced tax compliance costs of multinational firms. The harmonization of the rules of computation of company taxable income may also enhance the locational sensitivity of investment to tax rate differentials, thus increasing the pressures towards convergence of statutory tax rates.

(iii) Revenue and distributional effects

Government revenues from corporate income taxation account for about 6 percent of total revenues on average in the EC (Chart 1), with

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1/ The average wedge and the standard deviation of wedges in the EC differ from those of Table 6, because of the endogenous change in the interest rate.

2/ The size of the output change is determined entirely by the assumed parameters of the production function.

3/ The statutory corporate income tax rate corresponds to the weighted average of Case 1, but the added elimination of wealth and net worth taxes reduces the average wedge.

considerably larger shares in Luxembourg and the United Kingdom. 1/ In any case, because of the necessary link that must be maintained between corporate and personal income taxation, any reduction in effective corporate tax rates may undermine the tax base of those countries relying on relatively high rates of personal income taxation. 2/

The Commission's proposal for the elimination of double taxation of inter-company dividends would limit the scope for the taxation of direct investment income. 3/ On the one hand, capital-importing countries would be prevented from extracting excess taxes out of capital income accruing to non-resident parent companies (in the form of withholding taxes on remitted interest and dividends). On the other hand, capital exporting countries would be forced to grant full relief against double taxation (in the form of full credit or exemption). The net budgetary effect of this proposal on each country depends on its net foreign asset position (net capital exporter versus net capital importer) and on the effective tax treatment of direct investment income embedded in its bilateral treaties.

Related to the issue of base harmonization is the question of apportionment rules for the attribution of the tax base of multinational enterprises among competing jurisdictions. As noted, EC countries presently adopt separate accounting to determine corporate tax liability. However, in light of the experience of Canada and the United States, the EC may find it difficult to maintain separate accounting in the face of the increasing degree of integration of firms operating

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1/ The relative importance of corporate tax revenues does not necessarily reflect the ordering of countries by the tax wedges presented above because of a number of factors--difference between marginal and average rates of taxation, taxation of the financial sector, discretionary tax practices, etc. Therefore, the effects of harmonization proposals on tax wedges cannot be easily translated into a budgetary effect. Even the average decline in the tax wedge shown under the two harmonization proposals, depends on hypothetical assumptions about the direction of harmonization.

2/ Some observers have proposed to harmonize company tax systems by assigning the corporate tax to the central level. Centralization could imply that a central EC tax authority would collect the corporate tax and return revenues to member countries on the basis of a formula reflecting the source of the revenues (so-called tax sharing). This would be equivalent to a system of national taxes levied on a uniformly defined base at a uniform rate by each country's tax authority under the source principle. Alternatively, revenues could be shared with member countries under a revenue sharing arrangement under which revenues would be distributed on the basis of factors other than source. See, for example, Musgrave (1983) and McLure (1983). McLure (1983) also argues that decentralized levels are poorly suited to carry out stabilization and redistribution duties that may be associated with corporate taxes.

3/ Commission of the European Communities (1969a).

across national borders that is likely to emerge from the establishment of the internal market in the EC. The complete liberalization of capital movements may also increase the scope for tax avoidance or evasion through the shifting of deductible interest expenses to high tax jurisdictions, though this problem is likely to be less severe than the appropriate pricing of highly differentiated goods and intangibles. Continued application of separate accounting in the EC will thus require greater coordination among tax authorities--exchange of information, transfer pricing arbitration procedures, common accounting standards and controls on the assignment of deductible interest expenses across jurisdictions--necessary to uphold the territorial definition of the tax base, as addressed in part by the Commission's proposal for transfer pricing arbitration. Alternatively, some observers have pointed to the possibility of moving to unitary taxation of groups of affiliated firms. 1/ Such a step would protect revenues of EC member countries by reducing the elasticity of their corporate tax collections with respect to the national tax rate, preserving some degree of sovereignty over rates as multinational corporations would lose some of the opportunities for tax evasion or avoidance. However, as noted above, the legal and administrative complexities of administering unitary taxation among jurisdictions that do not share a common currency or common legal and accounting practices make this solution much less desirable in practice. Conflicts and costly negotiations between taxpayers and authorities about arm's-length transfer pricing would be replaced by conflicts over the appropriate assessment of the factors of apportionment. 2/

An assessment of the equity implications of corporate income taxation must take into account the question of short- and long-run incidence of capital income taxation. In general, the higher international mobility of capital relative to labor implies that differential rates of capital income taxation will be borne to some extent by labor in the form of lower wages. This would argue against the use of corporate income taxation for redistributive purposes, particularly in small open economies. Hence, any reduction in effective corporate tax rates resulting from harmonization or competitive convergence would not necessarily have adverse distributive effects. However, the degree to which labor will effectively bear the burden of capital income taxation in steady state also depend on a host of other factors. 3/ Moreover, because the process of capital reallocation takes time, the steady state results of incidence may be inappropriate over

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1/ McLure (1989).

2/ The EC company statute may resolve some of these problems by giving multinational enterprises in the EC a supra-national legal status. For different views, see Bird (1988) and Mutén (1988).

3/ A major factor is the relative capital intensity of the traded and non-traded sectorse. See Harberger (1982).

shorter time horizons, and changes in corporate income taxation can have lasting effects on the distribution of income and the tax burden between labor and capital. 1/

(iv) Effects on non-EC member countries

Adoption of the proposals for direct tax harmonization in the EC would have a number of ramifications for non-EC member countries. The harmonization of the tax base of company tax systems would reduce the compliance costs of multinational enterprises in the EC. In the adjustment phase to the single market, multinational firms based inside or outside the EC would be better placed to take advantage of this reduction in compliance costs than national enterprises.

The more ambitious proposal for the harmonization of company tax systems could have an important effect on the pattern of capital flows between the EC and non-EC countries if the provisions for the integration of personal and corporate income taxes are not extended to investors from non-EC member countries or to dividends paid out of non-EC income. In this case, the total tax burden on intra-EC investment would clearly fall relative to other investments. The distribution of the reduction in the tax burden between the corporate and personal sectors depends on the degree of integration and the size of the EC capital market vis-à-vis that of the rest of the world. Under the small open economy assumption, with the return from capital determined in international markets and fully substitutable domestic and foreign capital, integration would have no effect on international market returns and EC investment and would be captured solely by higher after-tax rates of return to EC-savers. Saving incentives would rise in the EC, but integration would not alter the pattern of investment. Under the more realistic assumption of the EC as a large open economy, integration within the EC would also reduce the cost of EC investments, thus raising both saving and investment incentives in the EC.

b. Interest income taxation

(i) Allocative effects

Differences in the level of source taxation of financial investment income will affect the portfolio composition of financial capital, its allocation among countries, interest rates and tax revenues, if the residence principle is not enforced both in principle and in practice. In some member countries, barriers to capital flows have limited the use of low source taxation accorded to non-residents in other countries for tax evasion purposes. Accordingly, the liberalization of capital flows in the EC will affect some countries more than others. Long-term portfolio investments (equity and debt

1/ An analysis of long-run and short-run incidence in the context of a growth model can be found in Boadway (1979) and Turnovsky (1982).

instruments) are already largely liberalized in the Community, though a few countries have yet to eliminate restrictions. These barriers, as well as the greater number of restrictive practices that apply to short-term and monetary flows, are to be repealed by mid-1990, with postponements granted to Spain, Greece, Portugal, and Ireland, for certain capital flows. Even countries that have recently eliminated restrictions on portfolio flows (France and Italy, most notably) have not yet been fully exposed to tax-induced capital flows. While the elimination of the restrictions has permitted residents to acquire foreign securities, impediments remain to the placement of investments abroad, which is necessary for tax evasion or fraud. Such impediments take the form of restrictions on foreign deposits--which prevent the transfer of capital abroad for the purchase of securities, or for the repatriation of interest and dividends received abroad--or of the outright requirement that foreign assets be held through domestic financial institutions. Hence, the scope for tax evasion will only be fully realized by the removal of restrictions on short-term and monetary flows and may be given further stimulus by the process of financial integration, which will allow financial institutions from low-tax jurisdictions to provide cross-border financial services anywhere in the EC. However, as mentioned before, countries will still be allowed to require domestic financial institutions to report (automatically or upon request) income and asset holdings, thus improving the chances of detecting and controlling tax evasion through capital outflows.

In all, capital liberalization will exercise upward pressures on the rates on return of highly taxed assets that are currently protected by capital controls or by the high cost of access to substitutable foreign financial instruments. Conversely, the rates of return on the assets that serve as a conduit to tax evasion--particularly bearer securities that protect the anonymity of the taxpayer--will be subject to some downward pressures. The extent of such interest rate adjustments will depend on the interaction of investors for whom capital liberalization increases tax evasion and those for whom it does not, namely tax-exempt investors, non-EC investors, and honest investors complying with the residence principle of taxation. The larger the size and the interest elasticity of financial asset demand of the former group the greater the necessary interest rate adjustments.

Tax evasion--absent obligatory disclosure--through capital flight clearly displaces intermediation from high tax countries to countries offering a more favorable tax treatment to non-residents, inside and outside of the Community. 1/ Because of the generally more favorable withholding tax treatment of interest over dividend income, tax evasion through capital fight induces an inefficient allocation of economic risk

1/ Much of this capital outflow may flow back into the high-tax country as tax exempt non-resident investment.

in the Community, with individual investors holding more debt-instruments free of withholding--particularly government paper and Eurobonds--than they would in a neutral tax environment.

Tax-induced capital fight and the attendant loss of domestic financial intermediation may also force some countries to allow more scope for domestic tax-avoidance measures, such as tax-exempt retirement accounts and capitalization of interest and dividend income through mutual funds, or even to tolerate the emergence of income capitalization schemes through instruments whose tax treatment remains ill-defined--swaps, repurchase agreements, etc. Under the competitive pressure of foreign financial markets and intermediaries these measures and schemes help high-tax open economies retain some of the domestic financial intermediation that would otherwise be lost to low-tax jurisdictions. At the same time, however, such schemes further contribute to the erosion of the tax base. Therefore, the position of some high-tax countries on such schemes has been rather ambiguous.

Investment unit trusts or mutual funds that capitalize the financial income they receive in the value of their shares, constitute an important channel of tax avoidance. First introduced in Luxembourg in the early 1980s, and subsequently marketed in neighboring countries by local commercial banks that feared a loss of market share, these trusts operate freely anywhere in the Community since October 1, 1989. 1/ In response to the threat of a displacement of financial intermediation to Luxembourg, France has recently decided to permit the establishment of such institutions in France, rather than simply their marketing there. Similar proposals have been advanced in Belgium.

The aim of the proposed minimum withholding tax, or of measures to strengthen administrative cooperation, including exchange of information, is to reduce allocative distortions ensuing from capital liberalization by removing or reducing the implicit tax advantage accorded by most member states to the residents of other EC countries. Notably, most EC member states, with the exception of Italy, Portugal and Spain, exempt non-residents from withholding on some form of interest income. However, because of the limited coverage that any proposal at the EC level would have in a global financial market--with Eurobonds and third country assets remaining outside the scope of the withholding tax--allocative distortions and budgetary leakages are inevitable.

Since in principle the proposed withholding tax or alternative measures in this area do not change the tax liability of savers, their effect on asset demand and interest rates depend on the extent of (potential or actual) tax evasion. According to some estimates, in Germany taxes are evaded on three quarters of financial investment

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1/ Countries will retain control over the laws regulating their advertisement.

income, 1/ while in Belgium the proportion was close to 90 percent in 1978, before the withholding tax became a final tax. 2/ In light of these estimates, the introduction of a withholding tax or of reporting requirements is likely to have significant allocative and interest rate implications for those countries that do not at present impose them. The gross-up effect of such measures on the interest rates of taxable assets would be limited, however, by the presence of investors not affected by it--non-EC residents and tax-exempt institutional investors. The magnitude of the gross-up effect is in fact inversely related to the share of assets held by such investors and the interest elasticity of their asset demand. Where asset prices (interest rates) *do not adjust sufficiently to the induced changes in asset demands*, net capital outflows will also come about. The cases of Belgium, Germany and the Netherlands provide useful examples of the potential effects of withholding taxes for the first two, or of reporting requirements in the case of the Netherlands.

Germany introduced a 10 percent withholding tax on interest income at the beginning of 1989 and repealed it as of July 1989. In reaction to the announcement of the withholding tax on October 1987, long-term interest rates on public bonds rose by as much as 50 basis points relative to comparable Euro-DM issues, and long-term capital outflows nearly trebled from their 1987 level. While the precise contribution of the withholding tax to capital outflows cannot be easily determined, the pressures engendered by it in the presence of widespread tax-evasion, investor anonymity and easy access to neighboring tax havens were obviously considerable. The effect of the withholding tax was further enhanced by its wide coverage over asset holders, affecting both residents and non-residents. 3/ In the Netherlands, the introduction of a reporting system on interest payments to domestic residents by Dutch banks in January 1988 also induced a drop in domestic savings deposits and large short-term capital flight--short-term capital exports increased by 1.4 percent of GDP in the period following the announcement of the reporting system in July 1987. 4/ Belgium has long suffered the effects of a high withholding tax on interest income of residents on capital flight. In this case, however, the gross-up effect of the withholding tax on interest rates has been considerably eroded over time--down to about a third of the full effect, according to some estimates. The reduction of the gross-up effect can be traced to the expansion of the holdings of tax-exempt investors, principally non-residents and domestic financial institutions who in turn can pass on the tax advantage to resident savers in the form of tax-exempt saving

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1/ Conseil National du Crédit (1988).

2/ Delporte (1987).

3/ For an analysis of the quantitative impact of measures concerning the taxation of interest income on interest rates, domestic savings and capital flows see Italianer (1989).

4/ See Italianer (1989).

deposits and individual retirement accounts. This effect illustrates how the interest rate effect is diluted when the coverage of the tax is limited across asset-holders. 1/

Violations of the residence principle at the personal level, as manifested by tax-induced capital flight, does not interfere with capital-export neutrality as long as such funds can finance domestic and foreign investments on the same terms. Capital exported to the Euromarkets obviously meets this criterion. In fact, the virtual absence of private bond issues in Belgium is an indication that the Belgian withholding tax is not borne by large domestic enterprises. Similarly, the intermediation of domestic savings through foreign markets does not have significant balance of payments effects. Capital outflows are easily repatriated in another form, as evidenced by the apparent direct roundtripping of short-term capital through the interbank market in Belgium and the Netherlands. Complications may arise if foreign intermediation, for institutional or other reasons, also involves currency substitution.

In all, opposition to the Commission's proposal for a minimum withholding tax stems in large part from concerns over the potential adverse effects on interest rates and capital flight given the continued presence of channels of tax evasion or avoidance, notably through third countries, off-shore markets, and possibly interest capitalization through investment unit trusts. Attempts to limit these effects by restricting the coverage of the directive simply exacerbate the tax-induced distortions on the assets that bear the tax. An additional argument against the Commission's proposal is the probable compliance costs of a measure that might be largely ineffective--unless buttressed by increased cooperation and exchange of information among tax authorities.

Indeed, the case for a common withholding tax would be strengthened considerably if its coverage were to be extended to a wider range of financial assets and a broader group of countries, say OECD member countries. It should also be noted, however, that distortions would continue to exist if the withholding tax at source were not considered to be a final tax by the country of residence, or if residents continued to be subject to a higher rate of withholding than non-residents. In this case, tax-induced capital flight would continue to prevail.

The debate over tax evasion in the EC has highlighted the fact that effective measures against tax evasion can be most effectively pursued at a global level, through the use of a universal withholding tax or through some limitations on bank secrecy provisions and improved cooperation. A number of bilateral and multilateral conventions have addressed the issue of administrative assistance among tax

1/ See "Belgium: Recent Economic Developments," (SM/89/68, May 1, 1989), Appendix III.

authorities. Most notable at the multilateral level, besides the EC directive and proposed suggested amendment mentioned above, 1/ is a Council of Europe-OECD draft convention on mutual assistance for the exchange of information and recovery of tax claims. 2/ The convention has been signed in part by the U.S. but has found considerable opposition in several other countries. To the extent that measures pursued in the Community provide reinforcement for agreement in a wider context such as the OECD, they could have important implications for limiting capital flight worldwide.

(ii) Budgetary effects

The net budgetary effect of liberalization under the present tax systems depends on both the direct change in tax revenues and on the interest rate effects on public debt servicing. In general, liberalization is bound to cause a net budgetary loss to those countries where the potential for tax evasion has not yet been fully exploited because of remaining barriers to capital movements. In these countries, the budgetary loss, in the form of reduced taxable base and higher domestic interest rates, will be proportional to the size of potential flight capital, and to the interest elasticity of asset demand of tax-evading investors facing a more favorable tax treatment abroad. Reveues from withholding taxes on interest and dividends (shown in Chart 1) accounts for only a part of that total tax revenue from interest and dividend income--except where withholding is final (Table 4). Hence, the tax loss in those countries exposed to increased tax evasion could be large and would not be directly offset by tax gains elsewhere, since capital flight would seek markets with complete tax exemption.

The budgetary loss of those countries facing existing or potential new competition from low tax jurisdictions would possibly be contained under the adoption of a common withholding tax on interest income, though it is very difficult to establish the size of the budgetary effects of liberalization and of a common withholding tax relative to the present system. The same considerations would apply to the adoption of EC-wide reporting requirements. The following discussion of the budgetary effects of the withholding tax subsumes, therefore, the analysis of the effects of alternative tax-enforcement measures. The extent to which a withholding tax would contain the budgetary loss of high tax countries depends on the availability of other channels of tax evasion or avoidance (through the holding of Eurobonds, tax exempt small size bank deposits, tax haven investments, capitalization schemes), on the relative elasticities of investors for whom the withholding tax would constitute a net tax burden and those for whom it would not, and the relative size of each of these type of investors. Because of the proximity of financial centers outside the EC (Switzerland, Channel Islands), and because of the exclusion of Eurobonds from the proposed

1/ Commission of the European Communities (1977) and (1989a).
2/ Council of Europe-OECD (1987).

directive, the minimum withholding tax proposal would do little to stem the budgetary loss resulting from tax evasion on portfolio investments. The proposed withholding is likely to have more of an effect on tax evasion on short-term deposits, since such evasion would have to rely primarily on the easy access to such deposits that would result from the closer integration of financial markets within the EC. 1/ Countries that have the administrative set-up and legal tools for the verification of capital transfers abroad--most notably Denmark, France and Spain--may be more successful in detecting and deterring tax evading capital outflows.

All EC member countries, with the exception of Germany, Greece and Luxembourg, have either a withholding tax or interest reporting requirements (or both), which create incentives for tax evasion through capital outflows and for tax avoidance through domestic asset substitution, although tax evasion through foreign investment is contained in Greece by capital controls. The extent to which such tax evasion has occurred (or could potentially occur) will also depend on a number of other country-specific factors--such as tax morality and proximity to tax havens.

Some of the countries whose tax regime already incorporates a withholding tax and where tax evasion is widespread or potentially high (Belgium, France, Italy, and, eventually, Portugal, and Spain) would stand to gain from a common withholding tax or reporting requirements, especially upon the full removal of capital controls. The effect on the remaining countries of this group is likely to be ambiguous. Denmark does not, at present, impose a withholding tax but its reporting system is relatively extensive. A common withholding tax would probably not constitute an additional tax burden and may prevent tax-induced capital outflows in a more integrated European capital market. Capital liberalization in Greece could have damaging revenue effects, that could be contained by a withholding tax. That effect would be offset, however, by the possibility of a tax induced gross-up of interest rates (see discussion on Germany below). Ireland still maintains some restrictions on short-term and monetary capital flow and imposes a withholding tax with a more limited coverage than that envisaged under the EC proposal. A common withholding tax with broader coverage may stem potential tax evasion when capital restrictions are lifted, but may also worsen the attractiveness of Ireland vis-à-vis non-EC tax havens if the withholding tax is extended to previously exempt assets, such as government bonds.

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1/ The tax exemption of non-resident deposits in other member countries would be disallowed under the current proposed directive. Restrictions on short-term deposits in non-EC countries could still apply.

The Netherlands introduced interest reporting requirements on its financial institutions as of 1988. The common withholding tax may constitute a new form of taxation, particularly of interest from bearer securities. If so, it would worsen the attractiveness of some domestic assets vis-à-vis assets held in non-EC tax havens. However, it would also reduce the relative attractiveness of bank deposits in neighboring countries.

The United Kingdom already faces conditions akin to those envisaged after 1990. In spite of a withholding tax on interest paid to residents, the elimination of exchange restrictions in 1979 did not, allegedly, motivate tax-induced capital flows to the extent experienced by Belgium or Germany in 1988. From the viewpoint of the United Kingdom, the withholding tax thus appears to have no direct adverse effects.

The net budgetary impact of the proposed withholding tax system on countries that have already liberalized all capital flows and do not impose withholding taxes or reporting requirements--Germany and Luxembourg--is ambiguous. The withholding tax would enlarge the taxable base to include tax-evading investment income, but this effect would be offset by outflows of taxable capital and upward pressure on interest rates. If the interest elasticity of tax-evading investors is sufficiently large relative to other investors, the introduction of a withholding tax could even lead to an adverse budgetary outcome (see Appendix II).

(iii) Distributional effects

As with corporate income taxation, the equity implications of capital income taxation at the personal level must account for the incidence of the tax. In a closed economy, the taxation of portfolio income reduces capital formation in the same way as corporate income taxation, with the same incidence implications. In a small open economy, a tax on the portfolio income of residents will not affect the cost of capital or the domestic capital stock if either the residence principle is enforced, or lacking that, if domestic and foreign capital can be financed in the world market on the same terms, for instance through the Eurobond market. Under these conditions, the tax on portfolio income is borne entirely by domestic asset holders. If the residence principle is not enforced, tax-induced portfolio outflows will have a direct redistributive effect, reducing the tax burden of asset holders and, should compensating revenue measures be necessary, raising the tax burden of labor--whether through commodity or labor income taxation.

In a large open economy or in an economy with a closed capital market, the taxation of portfolio income is borne in part by labor because it affects the supply of financial capital and hence the financing cost of enterprises. The same holds true in a small open economy that imposes a tax on the portfolio income of residents and non-residents alike, if the latter cannot credit it against their domestic tax liability. 1/

Hence, the reduction in the average effective tax burden of asset holders likely to result in the absence of increased cooperation or harmonization of tax policies in the EC, will largely benefit asset holders. Because of the relatively large size of the EC and the imperfect substitution of EC and non-EC capital, lower taxation of portfolio income could increase the supply of financial capital to EC enterprises with positive effects on capital growth, labor productivity and real wages. This would offset in part the adverse income distribution effect of lower portfolio income taxation. As mentioned before, because of the time lags inherent in the process of capital formation, these steady-state effects are of limited relevance in a medium-term policy context.

The potential reallocation of financial intermediation induced by a common withholding tax on interest income in the EC would clearly benefit non-EC countries, and neighboring ones in particular. While this reallocation would displace some of the financial intermediation activity in the EC, it would have an ambiguous effect on gross saving, and on the external balance of the EC vis-à-vis the rest of the world.

## III. Commodity Taxes

### 1. Theoretical considerations

#### a. Origin versus destination principle

The criterion that production should be located according to comparative advantage has guided, for the most part, the process of harmonizing indirect taxation. From this perspective, an efficient allocation of resources requires that commodity taxes should leave the relative costs of home and foreign-made goods unaffected.

The destination principle ensures that indirect taxes do not discriminate between foreign and domestic producers. According to this principle, commodities are taxed in the country of destination, that is, where they are consumed, regardless of where they are produced. It requires border adjustments so that imported commodities attract the same tax rate as comparable domestic goods in the importing country. Exports are typically exempt from domestic tax, while imports are subject to the tax collected on domestically produced goods. The destination principle is consistent with the provisions of the General Agreement on Tariffs and Trade (GATT).

1/ See Brean (1984) for an analysis of the effects of the Canadian withholding tax on non-resident income.

An alternative to the destination principle is the origin principle, which holds that commodities should be taxed on the basis of their place of production, regardless of where they are consumed. Accordingly, imports are not taxed and no rebate is given with respect to exports. Under the destination principle, the tax rate in the country where the consumption takes place determines the final tax burden on the consumer. Under the origin principle, in contrast, the final tax burden at consumption is a weighted average of the effective tax rates in the countries where production occurs.

Economic theory provides efficiency arguments in favor of the origin principle, albeit under restrictive assumptions. Shibata (1967) demonstrated that replacing the destination by the restricted origin principle 1/ would not affect production efficiency. Tax rates could differ across countries without violating locational neutrality because changes in exchange rates and market prices would leave relative prices unaffected. However, the assumptions underlying this theorem, such as the absence of international factor mobility and the flexibility of either factor prices or nominal exchange rates, are too restrictive to be met in practice. 2/ The theorem also requires a truly comprehensive tax and a completely uniform tax rate within each country, yet most countries apply differentiated commodity tax rates and exempt certain goods and services. Whereas differential tax rates across goods and services tend to distort mainly consumption patterns under the destination principle, they would primarily distort production patterns under the origin principle--the actual distortion being determined by price elasticities of substitution in consumption and production, respectively. 3/

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1/ Under the restricted origin principle the origin principle applies only to trade among the members of a customs union. For trade with nonmember countries, the destination principle would apply.

2/ Cnossen and Shoup (1987) examine these assumptions in more detail. Berglas (1981) demonstrates that replacing the destination principle by the restricted origin principle would transfer income among member countries if trade with the rest of the world is not balanced.

3/ Hence, under the origin principle, a differentiated commodity tax could become a tool of selective industrial policy--much like industry-specific investment tax incentives in a number of countries. Laux-Meiselbach (1988) argues that this may cause new distortions in international trade because domestic producers may demand lower tax rates for protection purposes.

The restricted origin principle is difficult to administer under a credit-type value-added tax (VAT), 1/ although the origin principle has been regarded as superior to the destination principle because it can be applied without border controls. 2/ Under the origin principle, underinvoiced exports save tax paid to the country of origin while overinvoiced imports save tax paid to the country of destination by raising the notional tax credit available upon further processing. This encourages firms to manipulate prices if tax rates differ between countries. 3/ Moreover, valuation would be a highly contentious matter under the origin principle because it would affect the intercountry distribution of tax revenue. An administrative advantage of the destination principle is that the valuation of exports and imports does not affect the tax liability. As exports are zero rated, they do not bear tax, irrespective of valuation; underinvoiced imports, while reducing the tax paid at the border, also reduce the tax credit the importing firm can claim.

Benefit considerations may also affect the choice between the origin and destination principles. According to the benefit criterion, the incidence of the benefits from public expenditures should determine whether consumption or production should constitute the basis for taxation. 4/ In particular, consumers should bear the tax burden according to the destination principle if consumers rather than producers are the main beneficiaries of government services financed by the tax. 5/

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1/ Tait (1988) discusses the various ways of levying the VAT and concludes that the credit or invoice method is the only practical method. This method applies the tax rate to outputs and determines the net liability by allowing sellers to claim full credit for taxes invoiced by suppliers. Laux-Meiselbach (1988) argues that the direct subtractive method is the best way to implement the origin principle. Under the direct subtractive method, the tax is applied directly to the difference between total sales and purchases from other firms.

2/ This latter aspect was recognized by the Neumark Committee (1963).

3/ See Cnossen (1986) and Laux-Meiselbach (1988).

4/ Efficiency considerations support the benefit principle because locational distortions due to differential tax burdens on mobile factors depend on net tax burdens, that is, tax burdens net of benefits from public expenditures.

5/ Terra (1988, Chapter X) uses these benefit arguments when arguing in favor of the destination principle for the VAT. Cnossen and Shoup (1987), in contrast, maintain that the VAT does not closely match the benefits from public expenditures.

b. Application of the destination principle

(i) The turnover tax

The border tax adjustments required by the destination principle are difficult to implement under a turnover tax. A turnover tax typically applies to all stages of production and distribution with no rebate for tax paid at earlier stages. Consequently, exact border tax adjustments depend on the number of production stages and the value added at each stage. Hence, tax authorities can only approximate notional border tax adjustments because these factors cannot be reliably ascertained. Moreover, countries may be tempted to use border tax adjustments for the purpose of protecting domestic producers of import substitutes and of providing incentives to exporters.

(ii) The value-added tax

In contrast to the turnover tax, the VAT provides a precise method for eliminating the tax on exports and for levying an equivalent compensatory tax on imports because the tax is levied on the incremental value added at each stage in the production of goods. In fact, if the tax is levied according to the tax credit method--as is the case in EC member countries--invoices explicitly state the total tax paid at previous stages. As a result, tax authorities can exactly measure the tax incorporated in exports and rebate it by applying a zero rate, while imposing an equivalent compensatory tax on imports. Even if import values are under- or overstated, the tax credit mechanism corrects inappropriate valuation at the first inland stage.

Although more neutral, and thus efficient, than the turnover taxes they replaced, the VATs levied by EC member countries still lead to distortions in production, consumption--besides the distortion of the labor-leisure choice, associated with any consumption tax--and international trade. Several types of distortions arise in connection with the VAT, as discussed below: distortions induced by exemptions, differences in tax rates within and across countries, and border adjustments.

A number of sectors are usually exempt from the VAT, including small businesses, financial institutions, and public and nonprofit institutions. In addition, production in the household and informal sectors is exempt either because of statutory provisions or because of enforcement difficulties. 1/ Exempting activities differs from zero rating in that exempt traders are not entitled to claim credit for the VAT imposed on their inputs. Exempt items, therefore, incorporate the VAT imposed on goods and services bought by the tax-exempt producers.

1/ Nonpayment of VAT due to tax evasion is formally equivalent to nonpayment of VAT on account of an exemption. In some EC countries a substantial part of the VAT is evaded. See, for example, Pedone (1981).

The larger the value of taxed inputs relative to the value of output, the higher the tax burden on an exempt enterprise. Depending on elasticities and market structure, part of this tax burden may ultimately be passed on to consumers through prices of final goods and services. Through this channel, exemptions may distort consumption decisions.

Exemptions distort the pattern of production for two reasons. First, the tax paid by exempt traders is not refunded if domestic taxable producers buy exempt inputs. 1/ Hence, just as under a turnover tax, some cascading may arise under a VAT. Second, input decisions of exempt institutions are typically distorted. In particular, these institutions are encouraged to have services performed by their own employees instead of buying them on the market. Exemptions may also induce trade distortions--especially if tax rates differ across countries. When exempt businesses or businesses buying exempt inputs in high-tax countries sell abroad, they are likely to be undercompensated at the border because they do not obtain refunds for taxes on inputs. 2/

Differences in intracountry tax rates typically distort consumption patterns 3/ and the input decisions of exempt entities. Nonuniform intracountry rates can also be used for protective purposes by imposing higher rates on importables and lower rates on exportables and

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1/ In the case of taxes that represent user charges for services provided by the government, taxes correspond to the price paid for production costs that would otherwise have been incurred, and, therefore neither tax-exempt nor taxable producers should be allowed to credit these taxes.

2/ To illustrate, Davis and Kay (1985) observe that the zero rating of new construction in the United Kingdom gives resident financial institutions, which are tax exempt, a competitive advantage over continental competitors because the latter cannot claim refunds for the VAT they pay on new construction. Exemptions also violate the principle that tax revenue should accrue to the country of destination. Similar distortions occur if countries differ in the type of expenditure that qualifies as business expense and, therefore, can be credited as input VAT.

3/ Differential rates are sometimes justified on the basis of externalities and differences in demand elasticities. Kay and Keen (1987), however, use efficiency arguments when they argue in favor of uniform taxation. Nonuniform taxes may also encourage unproductive activities ("rent seeking") by interested parties who seek preferential treatment. Uniform taxes, in contrast, may signal that the government will not yield to such pressures for preferential treatment.

nontradables. 1/ This may affect the intercountry pattern of production and consumption, as well as the international distribution of welfare, by changing the terms of trade. 2/

International differences in commodity tax rates reduce the efficiency in exchange because they drive a wedge between the marginal rates of substitution faced by consumers residing in different countries. Accordingly, welfare could be enhanced if households were to engage in international trade by increasing their demand for goods that are relatively heavily taxed in their own country relative to other countries and reducing the demand for those goods that are relatively lightly taxed by international standards. Cross-border shopping, while mitigating these consumption (or exchange) distortions, causes international differences in consumption tax rates to distort trade and production. 3/

Border controls help to enforce VAT on cross-border shopping and play an important role in administering the border tax adjustments under the destination principle. However, the compliance burden associated with border procedures and associated paperwork imposes transaction costs and, therefore, at the margin border controls discourage trade. 4/

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1/ Feldstein and Krugman (1989) argue that exemptions from VAT generally fall on nontradable rather than tradable goods and services. Hence, VATs discourage trade and raise the consumption and production of nontradables. Gordon and Levinsohn (1989) suggest that industrial countries distort and discourage trade not only through nontariff barriers but also through a combination of production subsidies and nonuniform consumer tax rates.

2/ Rose (1987) shows that countries with market power in world markets can improve their terms of trade at the expense of their trading partners--even if they apply the destination principle--by levying the highest commodity tax rates on importables and the lowest tax rates on exportables and nontradables.

3/ In order to limit this trade, individuals are required to pay VAT above a free allowance of ECU 350. Also, some member countries (Denmark and Ireland) require individuals to stay a minimum period abroad before they can benefit from these allowances. Of the EC countries, Denmark and Ireland, which levy relatively high VAT rates, face some of the most serious adverse effects from tax-induced cross-border shopping along the borders with, respectively, Germany and the United Kingdom. In fact, Ireland has been obliged to reduce tax rates on several consumer durables and on petrol in response to substantial tax-induced cross-border shopping. In addition, it is conceivable that, unless reflected in public services enjoyed by mobile types of labor, commodity tax rate differentials may encourage labor migration from high-tax to low tax-rate countries.

4/ Cecchini (1988) estimated that the removal of border controls would reduce costs to the private sector by ECU 7.9-8.3 billion (at 1988 prices), which amounts to 1.6-1.7 percent of the value of intra-EC

Trade is also discouraged by the way the current system of border tax adjustments imposes a compensatory VAT on imports. On domestic transactions between taxable persons, the supplier pays and the purchaser deducts the VAT at about the same time. On international transactions, in contrast, as the payment of the import VAT usually precedes the right to deduct, the importer provides an interest-free loan to the government by forgoing the interest on the prepaid tax. 1/

c. Excise duties

Excises are collected only once in the production and distribution process--in most cases at the manufacturers or importers level--in the country of sale, according to the destination principle. The only major exception is the duty on fuel oil used by industry. In this case, producers use an excised good as an input and cascade-type effects may occur because the duty is nonrefundable. These effects are similar to those experienced by the VAT-exempt producers that buy inputs on which VAT has been levied. Consequently, international differences in excise duties on fuel typically distort the international pattern of production and competitiveness. 2/ Just as in the case of VAT, excise tax rate differentials within and across countries may give rise to distortions in consumption and exchange and to tax-induced cross-border shopping.

## 2. Harmonization of the value-added tax

### a. *Background*

After eliminating tariffs on international trade as of July 1968, the EC proceeded first with harmonizing the types of domestic commodity taxes and then with harmonizing the tax bases of these taxes. In 1967, the EC Council of Ministers decided that all member countries should substitute the VAT for turnover taxes, partly to prevent member countries from using indirect taxation to favor domestic over foreign producers by manipulating border tax adjustments under the turnover tax. By 1973 nine member countries had introduced the VAT. After becoming members, Portugal and Spain followed in 1986, and Greece in 1987 (Table 7).

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trade. In addition, the public sector would save between ECU 0.5 billion and ECU 1.0 billion in administrative costs. According to the United Kingdom (1988), fiscal controls account for less than half of the costs of border controls.

1/ In several EC countries, the tax on imports is not due until 4-6 weeks after importation. Hence, the difference between the tax treatment of inter- and intra-country transactions may be quite small in some cases.

2/ However, if tax differentials reflect intercountry differences in the quality of public services or in the costs of supplying these services, they do not distort resource allocation.

The Sixth VAT Directive, adopted in 1977 and implemented by all member countries in 1979, represented a major step toward a uniform basis of assessment. 1/ This Directive defined taxable transactions, persons, and amounts. It permitted special schemes for small businesses and farmers and specified a list of the activities that could be exempted, including insurance, banking, and other financial transactions, as well as services in the public interest, such as postal services, medical care, educational and cultural activities, noncommercial radio and TV broadcasting. Also, it included special arrangements that allowed countries to deviate from the common tax base in several areas, with the understanding that these deviations should eventually be eliminated.

In spite of the broad harmonization of the base, VAT rates still vary widely between member countries (Table 7). The standard rate ranges from 12 percent in Spain and Luxembourg to 25 percent in Ireland. Denmark is the only country that imposes a single tax rate on almost all taxable goods and services. 2/ All other member countries apply one or two reduced rates on items broadly regarded as necessities, such as food, books, newspapers, utilities, and public transport. Belgium, France, Greece, Italy, Portugal, and Spain collect increased tax rates on various luxury goods, such as cars, jewelry, cosmetics, and electrical equipment. Whereas the coverage of the increased rates is small, a sizable portion of the tax base is subject to reduced rates. A zero rate applies to a large basket of goods in Ireland, Portugal and the United Kingdom. In Ireland and the United Kingdom, about 30 percent of private consumption of goods and services is zero-rated.

b. Proposals for tax administration

The envisaged removal of border controls used for implementing the border tax adjustments for the VAT and excises has important implications for the manner in which commodity taxes are administered. The EC has examined two alternative ways to abolish border controls. One possibility is the simple elimination of border tax adjustments. 3/ This alternative would prevent the VAT claim to be interrupted at intra-EC borders, while allowing goods to reach the final consumer bearing the VAT rate of the country of consumption. To protect the revenue claim of the country of final consumption, the Commission proposed the

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1/ The decision of the Council to compute part of each member's contribution to the EC budget as a proportion of a common VAT base gave some impetus to base harmonization. EC budget resources comprise mainly agricultural levies, import and customs duties, and a 1.4 percent levy on a uniform VAT base.

2/ Unlike most other EC member countries, however, Denmark levies a large number of environmental excise duties in addition to excises on a number of luxury products, such as major household appliances and cosmetics.

3/ As provided for under Article 4 of the First EC Directive on VAT.

establishment of a clearing house system (CHS) which is still under review and is discussed below. As an alternative, the Community could eliminate border controls while maintaining the zero-rating of exports by computing border tax adjustments on the basis of books of accounts and verifying them through written records. The postponed accounting system (PAS) was proposed as part of this approach. 1/

The Sixth Directive suggested that a PAS (also known as deferred payment scheme) should be developed as a means to eliminate border controls. In 1982, the draft Fourteenth Directive proposed a version of the PAS. 2/ The Benelux countries have been operating a PAS for most cross-border transactions since 1969. Ireland and the United Kingdom applied similar arrangements until November 1, 1984. The PAS shifts or defers the collection of import VAT to the first taxable entity in the importing country. 3/ Hence, customs no longer needs to physically check imports at the border and collect the compensating import tax. 4/ As regards exports, instead of physical clearance at the border, documentary evidence establishes entitlement to export rebates.

Whereas the system envisages a substantial reduction of border formalities, it would be rather susceptible to fraud, especially if applied to all intra-EC trade between taxable persons. Zero rating of exports threatens the self-policing character of VAT because it implies that the tax chain between consumer and producer is broken. Registered traders may obtain zero-rated imports and conceal their business from revenue authorities; likewise, exempt traders may also be able to acquire zero-rated imports. In order to avoid such tax fraud, EC tax authorities would most likely want to maintain some forms of border

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1/ Van Zanden and Terra (1987) and Terra (1988) argue in favor of a third alternative, which is closely related to a PAS, namely, making exports of registered businesses liable to tax at the rate prevailing in the country of the purchaser. Although this alternative may be attractive for direct mail order sales, it does not seem to be appropriate for other sales because it is difficult to police and rather complicated. See Cnossen and Shoup (1987, p. 80).

2/ In the 1985 White Paper (Commission of the European Communities (1985)), the Commission suggested that this approach should be introduced, awaiting the introduction of a common clearinghouse system. However, the proposal was withdrawn in 1987 when the Commission proposed implementing the clearinghouse mechanism by 1992. In October 1989, however, ministers of finance of the EC countries have suggested that this approach could still be adopted as a transition measure after border controls are abolished at the end of 1992.

3/ This procedure implies that VAT on imports is paid when the importing taxable entity sells the imported goods.

4/ Removing these barriers to trade involves a one-time loss in budgetary revenues at the time the system is introduced because of the loss of the float arising from the interest-free credit extended to governments by importers.

control for certain transactions. 1/ Alternatively, a tight control system might avoid serious fraud. However, such a system may impose cumbersome procedures on firms which may discourage intra-EC trade. 2/

The disadvantages of the PAS led the Commission to propose, in 1987, the elimination of export rebates and the adoption of the clearing house system (the combination of both measures henceforth referred to as CHS). This system would treat sales across intra-EC borders in the same way as those within EC countries. Exports would no longer receive a rebate, but would instead bear the exporting country's rate of VAT. The importer would be allowed to credit this tax, even though it was paid to the exporting country. Hence, importation would no longer be a taxable event and the importer would need to report taxes paid abroad.

The pattern of VAT receipts among member countries would not necessarily correspond to the pattern of consumption if the exporting country were to collect taxes on exports. Compared with the existing system, net importers from other member countries with relatively low rates would tend to lose revenue, while net exporters and high tax countries would gain (Table 8). The CHS would prevent such a redistribution of revenue by requiring exporting countries to reimburse input refunds on their exports to importing countries.

In the first outline of the CHS, the Commission proposed that importers submit a breakdown of the value of goods obtained from each member country and the amount of tax paid thereon. This would enable tax administrations to bilaterally reconcile their revenue flows. One drawback of this proposal was that it was likely to give rise to costly bilateral disputes. Moreover, the system would impose significant compliance requirements on traders and a heavy administrative burden on tax authorities. Under a revised proposal, 3/ registered traders would only have to report the export and import VAT on intra-EC trade as a whole 4/ and the CHS would no longer operate on the basis of bilateral flows. Rather, each member country would calculate its net position vis-à-vis the Community as a whole and rely on its own administrative procedures. According to the Commission, the proposed central clearinghouse--in charge of netting excess tax positions of member

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1/ Commission of the European Communites (1985c).

2/ Tielemans (1987) argues that, instead of using border checks, the tax authorities can alleviate the potential for tax fraud by providing mutual assistance and by taking advantage of automation possibilities. However, this so-called zero-rate notification system requires extensive administrative controls to combat fraud; see European Parliament (1987).

3/ Commission of the European Communities (1987d).

4/ This requirement may involve only a small additional cost for intra-EC trade compared to domestic sales. Traders would have to retain records of each transaction, including the exchange rates used, because the Commission's proposals require that each member state should be able to itemize each VAT return.

countries--would be expected to run a small surplus--to be returned to member countries--because some exports would be sold to tax-exempt traders and private individuals who cannot claim refunds. 1/

In view of the large revenue at stake, control measures must assure that the tax yield is safeguarded not only for each member country but also for the Community budget. In this connection, the elimination of the zero rating of exports, which is susceptible to fraud, would strengthen the self-policing character of the VAT. Moreover, changes in the surplus accumulated by the clearinghouse could be used as an indicator of fraud. The Commission also proposed standardized audit trails and information requirements, improved control and cooperation between tax administrations, and central supervision at the Community level. 2/

The CHS requires trust among member governments in each other's VAT administration. Concern has been expressed that the CHS allocates incorrectly the incentives and responsibilities for enforcing VAT on intra-EC trade. 3/ In particular, effective enforcement requires that the tax authorities carefully check the claims for refunds on imports. 4/ However, the CHS dilutes the incentives for tax authorities to identify dubious claims for input refunds on imported goods because they can recover the cost of such claims from the central clearinghouse. Moreover, other countries do not face incentives to detect the fraud because the gains from doing so are distributed over all EC countries. Van der Zanden and Terra (1987) suggest that mistrust among member countries and attempts to combat fraud may lead to additional onerous obligations on business, such as the separate declaration of creditable input taxes paid to different member countries. This would also raise the public costs of administering the system. 5/

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1/ Mail-order sales would comprise the bulk of the exports to private individuals that would give rise to the surplus because over-the-counter retail sales would be excluded from the clearing operations. Hence, VAT on retail sales to final consumers would accrue to the source country.

2/ Commission of the European Communities (1987d).

3/ See, for example, Pearson and Smith (1988a).

4/ The proposed elimination of zero rating of exports may well enhance the security aspect of the VAT. The proposed system collects tax in advance from the exporter rather than afterwards from the first inland trader. Unlike under PAS, imports bear at least the tax of the exporting country even if imports are not reported.

5/ UNICE (1988) has asked for guarantees that the clearinghouse would not eventually result in added administrative burden on business. Others have expressed concern that the central clearinghouse may shift excessive authority from sovereign EC countries and their tax administrations into the hands of the EC bureaucracy. See, for example, Culp (1989).

The clearing account would operate exclusively in terms of the ECU. Van der Zanden and Terra (1987) argue that the need to convert mutual flows in various currencies adds yet another burden on traders and tax administrations. Moreover, fluctuations in exchange rates may cause the CHS to distort trade and change the allocation of revenues across countries (van Thiel (1988)). However, Timmermans (1988), maintains that the exchange rate problem is not a serious one.

The obligation of exporters to collect VAT raises the exporters' exchange rate risk. Payment risk is also increased because exporters would be liable to VAT even if the importer defaults on payment. 1/ The clearinghouse may also redistribute the discounted value of revenues across countries by changing the timing of tax receipts. Without special arrangements, net importing countries would provide an interest-free loan to net exporting countries.

In May 1989, the Commission suggested amendments to the CHS proposal to further simplify the procedures for both tax authorities and taxpayers. 2/ Instead of VAT returns, trade statistics would constitute the basis for the clearing operation to calculate member countries' debits and credits. 3/ This approach does not require a central clearing fund, but would involve only an accounting exercise, and is not expected to yield a net surplus. 4/ Moreover, tax authorities would have a stronger incentive to discover fraudulent VAT input claims on imported goods because they would no longer be able to pass claims for input tax refunds on to other member countries.

Depending on the coverage of other special arrangements, the application of either this modified CHS or the PAS could be reduced to less than one half of intra-EC trade. The bulk of intra-EC trade may be governed by special regimes. According to the most important special arrangement, the VAT liability on intra-EC trade between firms within an approved group of related enterprises would be suspended until the

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1/ Cnossen and Shoup (1987) suggest that in some cases a zero-rate notification procedure, which would be very similar to the procedures under PAS, could be used to avoid this problem. Payment risk on international trade may well exceed that on domestic transactions; traders may have less legal recourse in case of nonpayment while they may have less information regarding the creditworthiness of their trading partners. CEPS (1989) argues in favor of providing reliefs for bad debts in order to prevent the tax system from discouraging intra-EC trade.

2/ Commission of the European Communities (1989c).

3/ A major problem facing this proposal is that trade statistics are rather imprecise. Removing the border controls may make these statistics even less reliable. Moreover, countries would face incentives to understate their exports and to overstate their imports.

4/ Table 8, which is based on trade statistics, illustrates this point.

commodities are sold to an unrelated buyer. 1/ Under another special arrangement, mail-order sales by large specialized firms would be taxed at the VAT rate of the country of destination. On the sales of motor vehicles, VAT would be charged in the buyer's country of residence, determined by the place of registration. Purchases by certain exempt or nontaxable public and private institutions would be taxed at the VAT rate in the country of establishment. 2/

c. Proposals for rate approximation

In principle, VAT rate differentials do not distort production location decisions as long as the destination principle is upheld. The Commission has argued, however, that the elimination of border controls requires convergence of tax rates because of the difficulty of enforcing the destination principle without border controls. 3/

International tax rate differentials may distort trade through various channels. Certain tax-exempt entities (such as financial institutions, small traders, etc.) face tax incentives to import commodities from countries with the lowest tax rates because they are unable to reclaim VAT. This may encourage corporations to move their distribution centers to countries with low tax rates in order to benefit from demand by tax-exempt entities. 4/ Another source of trade distortion would be cross-border shopping by individuals, which would become unrestricted after the border controls are abolished. These transactions would, in fact, be taxed on the basis of the origin principle and therefore be affected by VAT differentials. Countries with the higher rates would suffer from cross-border shopping because they would lose revenue and retail business. 5/ The Commission has stressed that tax induced cross-border shopping is a serious issue because heavily populated areas surround borders in several parts of the EC. In its view, the importance of this issue is illustrated by the current modest travelers' allowances and the difficulties in obtaining the agreement of member countries to raise these allowances. 6/

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1/ CEPS (1989) proposes to extend tax-free trade to trade between "authorized" traders who would need to satisfy tax authorities regarding the quality and honesty of their accounts.

2/ See Commission of the European Communities (1989c).

3/ See Commission of the European Communities (1987a).

4/ Casey, King, and Watson (1988) describe how VAT differentials distort input decisions of exempt businesses. The Commission has recently suggested that certain tax exempt entities be required to pay tax at the domestic rate to mitigate these distortions. See below.

5/ Selected sectors in countries with lower tax rates that do not benefit from cross-border shopping may also suffer because general equilibrium adjustments in the exchange rate and domestic costs may crowd out these sectors.

6/ See Commission of the European Communities (1985c).

The existence of tax-exempt traders and public and private institutions provides another argument for the harmonization of tax rates, even if the EC would succeed in enforcing methods requiring some exempt traders to pay the domestic VAT rate on inputs purchased abroad. The reason is that the output of exempt sectors is not relieved from VAT. Consequently, intercountry tax rate differentials distort competition between tradable goods sectors that use the goods of tax-exempt producers as inputs, as well as between exempt sectors that produce tradable goods. Financial institutions and some small businesses and farms are the most important examples of exempt enterprises that export directly.

Another reason for the harmonization of tax rates is that, in the absence of border controls, a wide divergence of rates may cause fraud and evasion. 1/ In particular, traders in a country levying a high rate are encouraged to import goods from a low-rate country and hide the transaction from the tax authorities, so as to earn not only the tax on its own value added but also the differential between the domestic and foreign input tax rates. These practices would both discourage production and reduce tax revenue in high-rate countries. Harmonization of tax rates is also likely to enhance the efficiency in exchange by reducing intercountry differences in rates of substitution between goods. 2/

Whereas the Commission has argued that the process of market integration requires some approximation of tax rates, others maintain that member countries may still be able to impose rates that diverge substantially from those in other member countries. Some suggest that taxing cross-border shoppers on the basis of the origin principle would merely legalize the existing situation because border controls are currently not effective in policing these transactions. 3/ Further, the view that intercountry differences in VAT rates explain only a small fraction of intercountry price differentials 4/ suggests that nontax barriers are more important in distorting trade and factor movements. However, tax differentials may become more important in determining price differentials upon removal of most nontax barriers to intra-EC trade.

In certain respects, tax authorities could further reduce tax-motivated cross-border shopping for some large and expensive durable goods. In particular, registration requirements could be used to impose compensating user charges if the importing country levies a relatively

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1/ See, for example, European Parliament (1987).

2/ Keen (1987) shows that harmonizing tax rates toward an appropriately weighted average of EC rates indeed enhances welfare. For a more elaborate discussion on the welfare effects of tax rate harmonization, see Section 5.a. in this chapter.

3/ See, for example, Cnossen (1986), and Bos and Nelson (1988).

4/ See, for example, United Kingdom (1988).

high tax rate, along the lines of the recent EC proposal that the country of registration should charge commodity taxes on cars. As regards other commodities, some intercountry differentials could also be allowed, depending on the likely scale of tax-induced cross-border shopping, as determined by geographical factors and the nature of the goods. 1/ Accordingly, the Commission suggested that member countries could regulate differences in tax rates bilaterally on the basis of mutual agreement among directly concerned countries, without requiring agreement among all member countries. The recently proposed special arrangements for mail-order companies and tax-exempt businesses, such as small traders, public authorities, and financial institutions, may further reduce the sensitivity of cross-border sales to tax rate differentials, 2/ by requiring nontaxable entities to declare their imports and pay tax at the domestic tax rate, 3/ and mail-order firms to collect the tax at the rate of the destination country.

Several observers 4/ as well as the Commission have adopted the view that it is only necessary to specify minimum tax rates in order to limit the extent to which low-tax countries can impose negative externalities on neighboring high-tax countries, consisting of revenue losses and reduced retail business. A maximum tax rate would not be necessary because high-tax countries would bear the costs associated with diverging rates themselves. The U.K. Government has argued that minimum tax rates would not be desirable either. 5/ Competitive pressure would naturally lead to tax harmonization and would offset undesirable pressures to raise inefficient public spending. Moreover, a tax structure requiring unanimous agreement to change tax rates would not be sufficiently flexible to respond to changes in the economic environment. It can be argued, however, that without imposed minimum and maximum rates, countries levying high rates will be tempted to take measures interfering with free intra-EC trade in order to protect their own revenue base. Moreover, some sectors in low tax countries that do not benefit from cross-border shopping may suffer from high tax rates in other countries on account of exchange rate and cost adjustments.

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1/ Most of the items that the EC proposal subjects to reduced rates are unlikely to be traded across national borders on a large scale. See also Economic and Social Committee (1988a), Pearson and Smith (1988a), and CEPS (1989). Cnossen (1983) indicated that tax authorities might levy concessional tax rates in populous border areas.

2/ However, in the case of small traders, enforcement of the destination principle would be difficult. Bringing tax-exempt institutions in the tax net also helps to alleviate the trade distortions induced by intercountry rate differentials.

3/ See also Cnossen (1983), Bos and Nelson (1988), Timmermans (1988), and Economic and Social Committee (1988a).

4/ See, for example, Pearson and Smith (1988a), Timmermans (1988), and Van der Zanden and Terra (1987).

5/ See United Kingdom (1988).

In 1987 the Commission proposed that member countries should adopt a dual rate structure with a standard rate of between 14 percent and 20 percent and a reduced rate of between 4 percent and 9 percent, while all increased rates should be abolished. 1/ Most countries would be able to retain their standard rates except for Luxembourg and Spain, which would have to raise their standard rate, and Denmark and Ireland, which would be required to reduce it. The elimination of the increased rate band would affect only a small number of luxury goods.

In May 1989, however, the Commission suggested a more flexible approach, whereby the standard rate would be subject only to a minimum rate, set at not less than 14 percent. 2/ At the same time, it continued to support the reduced rate band. Without a maximum standard rate, individual countries would have to assess the costs of maintaining high rates, by taking into account competitive pressures stemming from lower rates in neighboring member countries.

The Commission specified in the 1987 proposals that the reduced rate should apply to approximately one third of the aggregate tax base, comprised of the following commodities: foodstuffs (with the exception of alcoholic beverages), energy products for heating and lighting, water supply, pharmaceutical products, books, newspapers, periodicals, and passenger transport. This list was designed to conform closely to existing tax practices in the various EC member countries. 3/

The proposals represented a compromise between the objective of realizing an internal market without trade distortions, on the one hand, and avoiding disruptive budgetary consequences for outlying member countries, on the other hand. It was argued that, compared to a single rate system, a dual rate system would allow more fiscal discretion and could be designed so as to impose less budgetary adjustments for most countries. Relative to a three rate system, a dual rate system would be simpler and less costly to administer. Moreover, the classification of products would cause less difficulties of interpretation.

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1/ Commission of the European Communities (1987a). In addition, France would have to terminate the ceilings which currently apply to the deductibility of VAT on certain business expenses, such as fuel and cars.

2/ See Commission of the European Communities (1989c).

3/ Van Thiel (1988) suggests that most member states will be forced to make substantial changes in order to comply with the proposals because their existing reduced and zero rates have a much wider application than that proposed by the Commission. The United Kingdom, for example, applies zero rates to some items, such as children's clothing and the construction of buildings, that are not included in the reduced rate band proposed by the Commission.

In the 1987 proposals, the Commission opposed zero rating for certain income inelastic products, as currently practiced by Ireland, Portugal, and the United Kingdom, since previous Directives had allowed for zero rating as a temporary measure, to be eliminated upon completion of the internal market. Moreover, it noted that zero rating was a less efficient way to protect low-income groups than granting targeted subsidies. The Commission relaxed its position in May 1989 and suggested that, as part of an overall compromise, it could accept zero rates on a limited number of goods in countries currently practicing zero rating.

The proposed tax approximation is targeted to become effective no later than December 31, 1992. Also, it has been proposed that travelers' allowances be raised gradually and substantially before they would become unrestricted on that date. As competitive pressures would gradually intensify, this would provide incentives to countries to align their tax rates during the transitional phase. By the same token, rate approximation during the transition would alleviate potential disruptions when border controls would be abolished at the end of 1992.

## 3. Harmonization of excise duties

### a. Background

The EC has attempted to harmonize excises in order to prevent them from segmenting the internal EC market. However, the progress has been slow. The Commission first put forward a framework for harmonizing excises in 1972. It identified the excises on manufactured tobacco, alcoholic beverages, and hydrocarbon oils, as the excises to be retained and harmonized. All other excises affecting tradable commodities were to be eliminated. The EC has established a limited degree of harmonization as regards excises on tobacco by agreeing on common definitions of manufactured tobacco products and establishing a range of relationships between the specific and ad valorem components. As regards alcoholic beverages and hydrocarbon oils, however, little progress has been made.

The Court of Justice has eliminated the most obvious forms of discrimination against foreign products by enforcing Article 95 of the Treaty of Rome, which prohibits imposing taxes that discriminate between foreign and domestic products. The Court has ruled, for example, that France and Italy, which imposed substantially higher excises on mostly imported cereal distillates than on mostly domestically produced spirits distilled from grapes, should remove this form of implicit discrimination against foreign goods. Similarly, the Court prohibited such practices by Denmark (42 percent lower tax rate on akvavit than on other spirits) and the United Kingdom (excise rate on wine five times higher than that on beer).

Tables 9-12 indicate that excises still differ significantly across EC countries. Moreover, several EC countries levy excises on commodities other than alcoholic beverages, tobacco, and mineral oils, including nonalcoholic beverages, sugar products, coffee, tea, electricity, and cars (Table 12). Denmark collects environmental duties as well as excises on a large number of luxury commodities. Indeed, harmonization of excise rates has proved to be a difficult and slow process. This can be explained partly by protectionist pressures but also by differences in consumer tastes and cultural attitudes toward drinking and smoking, as well as divergent social (regarding, for example, the distribution of income), environmental, energy conservation, and health policies. 1/

b. Proposals for tax administration

The planned removal of border controls affects the administration of excise duties because EC countries use border controls to police the movements of some dutiable goods under the bonded warehouse system. This system involves suspension of the duty; goods are liable to excise duty only when they leave the warehouse to be sold on the domestic market. Duty on exported goods is cancelled after proof of export, which typically involves a check at the border. As regards imports, border controls establish the tax liability at the point of entry.

The Commission has proposed a linked bonded warehouse system in the various member countries to control the movement of dutiable goods after border controls have been abolished. 2/ Under such a common system, dutiable goods would cross intra-EC borders under seal while the payment of duty would be suspended. The tax authorities in the country of destination would tax the goods only when the commodities would leave warehouses for delivery to traders. No clearinghouse mechanism would be required because the country of destination would collect the revenue.

Lee et al. (1988) argue that the EC proposal does not ensure that tax revenue accrues to the country where the goods are consumed because an integrated European market will encourage international producers to centralize their warehouse and distribution facilities. Hence, the location of distribution facilities, rather than the pattern of consumption, would determine the interjurisdictional distribution of

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1/ Shoup (1983) argues that excises can be unified only after increased intra-EC mobility of persons and goods has resulted in more uniform social attitudes toward dutiable commodities.

2/ See Commission of the European Communities (1987a). The Commission has not yet put forward detailed rules and regulations regarding the linked warehouses. Several observers, including Economic and Social Committee (1988bc), regret this and have stated that they cannot express a definite view on the excise proposals until the Commission provides more details of the proposed warehouse systems.

excise revenues. A legal prohibition on the movement of goods once duty had been paid would be difficult to enforce unless some type of frontier control would remain, which would be inconsistent with the mandate to remove such controls. 1/ European Parliament (1987) observes that a linked warehouse system would not be consistent with a genuine internal market because the movement of dutiable commodities would still be rather restricted.

The bonded warehouse system could be supplemented with physical marking to enforce a prohibition on the intercountry movement of duty-paid goods. 2/ This would prevent goods with duty paid to a particular member country from being sold in another country. Moreover, physical marking may be a less costly alternative to the warehouse system in markets with many small-scale producers. 3/ Another advantage of marking duty-paid goods is that it may allow member countries to retain differences in duty rates for some products; retailers could only sell goods shown to have been taxed at the appropriate rate. Indeed, in its 1989 suggested amendments to the 1987 proposals, the Commission suggested that tax stamps could be used to prevent fraud stemming from differences in duties between member countries.

On the negative side, however, separate physical marks for each country may be rather inflexible and raise compliance costs. 4/ Hence, it may inhibit the formation of a truly integrated market for dutiable

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1/ Lee et al. (1988) suggest that frontier controls might still be required to combat drug trafficking. Accordingly, tax authorities could use these border controls to police large imports of alcohol and tobacco.

2/ See, for example, Cnossen (1983) and Lee et al. (1988). Several EC countries, including Belgium, Denmark, Germany, Italy, and the Netherlands, use physical marking in controlling excises on cigarettes. Some countries apply stamps to alcohol. Physical marking allows tax authorities to tax similar goods differently depending on the end use.

3/ Economic and Social Committee (1988b) argues that a system of warehouses, which requires close supervision of the movements of goods until they reach the retail stage, would be wholly impractical for some dutiable commodities, such as wine.

4/ The system would be inflexible if producers would have to keep a supply of stamps for each country in which they sell their products. Such a method would also adversely affect the cash-flow position of producers. However, these disadvantages could be mitigated by applying the physical marks late in the production chain. Goods could receive a distinguishing mark on leaving the warehouse by stamping individual packs and bottles or by making a revenue meter impression.

commodities. 1/ Furthermore, in the absence of border controls, it cannot deter cross-border shopping by households, which is likely to grow substantially if sizable excise differentials persist.

c. Proposals for rate approximation

In putting forward its 1987 proposals, the Commission argued that, in contrast to VAT, excise rates on alcoholic beverages, tobacco products, and mineral oils would need to be completely harmonized across the EC because intercountry differences in VAT, imposed on top of the duty-inclusive price, would compound differences in excises, and would result in tax-induced price differentials well in excess of 6 percent. 2/ Hence, small excise differentials would magnify retail price differentials, thereby exacerbating the incentive for cross-border shopping and fraud, especially for dutiable goods that are easily transported.

Other arguments also make excise rate unification even more urgent than harmonizing VAT rates. 3/ First, contrary to VAT, excises involve the one-off payment of nonrefundable taxes. This gives traders a powerful incentive to buy their supplies in a low tax country after duty has been paid and to sell the commodities in a high tax country without paying the higher domestic duty. Thus, in addition to final consumers, retailers may be induced to exploit tax differentials if border controls are eliminated, especially if separate physical markings for each country are not applied. Second, if excisable goods enter the production process as inputs, unification would reduce the intercountry

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1/ However, by allowing border controls to be removed, it would contribute to the creation of a single market for nondutiable commodities. In the United States, interstate differences in excises have resulted in interstate restrictions on movements of dutiable commodities.

2/ See Commission of the European Communities (1987a). All other excises involving border tax adjustments would need to be phased out. In May 1989, the Commission suggested some amendments to the 1987 proposals by suggesting that, in the case of duties on alcoholic beverages and tobacco, the EC would have to impose only minimum rates. See Commission of the European Communities (1989c). See also below. The Commission does not consider it necessary to harmonize excise taxes on the registration of vehicles as a part of the 1992 program because the country of registration could enforce its own tax rate by using registration requirements.

3/ Just as reducing intercountry differences in VAT rates, harmonizing excises across countries improves the efficiency of exchange.

distortions due to tax-induced differences in cost structures. 1/ Third, harmonization would prevent countries from using excises as protectionist devices. Fourth, it may substantially reduce the cost of administering and complying with excises because it may make close supervision of the movements of goods no longer necessary. 2/ Fifth, excises represent a large part of the prices of dutiable goods. Accordingly, tax base flight through cross-border shopping and fraud generates more serious revenue losses for high tax countries in the case of excises than in the case of VAT.

(i) Alcoholic beverages

The negative externalities arising from the consumption of alcoholic beverages and the addictive properties of alcohol are typically used as arguments for excises on alcoholic drinks. However, in several EC countries the structure of alcohol taxation primarily reflects the interests of domestic producers; instead of taxing beverages on the basis of alcoholic strength, these countries levy higher excises on alcohol products that are mostly imported than on alcohol products produced domestically. 3/ To illustrate, several countries producing wine, such as Italy, Germany, Greece, Portugal, and Spain, do not levy any excise tax on still wine (Table 9). Countries protect national vinicultures also by using rate structures that distinguish between still and sparkling wine and between ordinary and fortified wines. Table 9 shows that the excise duty per unit of alcohol is generally highest for spirits. Denmark, Ireland, and the United Kingdom impose the heaviest tax burden on alcoholic drinks, while the Mediterranean countries levy the lowest excises.

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1/ Timmermans (1988) observes that, given the existence of other distortions, the unification of just one cost component may not necessarily improve efficiency. In this connection, he argues for complementing the harmonization of excise duties on fuel with that of other transport policies. More generally, other nontax policies, such as product regulations, standards for health and safety reasons, environmental and consumer protection, may distort competition as well. Indeed, the Commission has proposed to remove most of these nontax distortions.

2/ If excise rates were uniform across the EC, Van der Zanden and Terra (1987) and Terra (1988) favor allocating tax revenue to the member states on the basis of data concerning the national consumption of the dutiable goods. This would not require a supervisory system based on bonded warehouses, thereby reducing administrative and compliance costs. Duties could be collected at the manufacturing stage or when the goods enter the EC. Timmermans (1988) also maintains that, given the unification of excise duties, linking bonded warehouses, which may well be costly, is not strictly necessary.

3/ The Court of Justice has eliminated the most flagrant forms of discrimination against foreign producers.

The relative tax rates on spirits, wine, and beer are a contentious issue in view of the interests of the producers in different countries. 1/ In formulating its 1987 proposals, the Commission concluded that taxing these three types of drinks by reference to a common criterion, such as alcoholic strength, volume, or value, would not be feasible. 2/ Such a consistent system would excessively disrupt the distribution of revenue and change the tax burdens on various drinks. As an alternative, the Commission proposed that spirits would be taxed on the basis of alcohol content, wine on the basis of volume, and beers according to their original gravity. The level of tax on spirits was determined as the arithmetic mean of member countries' existing duty rates, that is, ECU 1,271.14 per hectoliter of alcohol. In the case of wine and beer, however, both the arithmetic average and the average weighted by consumption produced results that would yield excessively large changes in consumer prices and revenues in several member countries. Therefore, the Commission proposed that beer of average strength and wine should bear equal taxes per volume of product while, assuming unchanged consumption patterns, jointly producing the same revenue as at present. Accordingly, still wine and average beer would be taxed at a rate of ECU 17 per hectoliter of product. This corresponds to a charge for beer expressed per degree Plato per hectoliter of product of ECU 1.32. 3/ Under these proposals, Denmark, Ireland, and the United Kingdom would experience sharp reductions in duty rates. Five EC countries would have to introduce a duty on still wine.

Some member countries are likely to reject the EC proposal to completely harmonize excises on alcohol in view of the dramatic implications for the prices of alcoholic beverages in these countries. Member countries could be allowed to retain some differences in excise rates by harmonizing excises only at the manufacturing stage and allowing differential rates at the retail stage. 4/ Stringent licensing requirements for retail outlets may enable high excise countries to prevent retailers from evading taxes by buying their supplies in low tax countries. Lee et al. (1988) propose a transitional arrangement involving three duty jurisdictions for spirits, each with harmonized

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1/ The taxation of alcoholic beverages is related to the Common Agricultural Policy (CAP) because CAP subsidizes the production of grapes.

2/ Commission of the European Communities (1987i).

3/ The rate on sparkling wine was determined by increasing the rate for still wines by the average of the current proportional differentials in those member countries that currently tax both still and sparkling wines.

4/ See, for example, Cnossen (1983).

rates. 1/ Commercial movements of goods between those three areas would have to be restricted by some form of border control or physical marking or both.

In the 1989 communication, the Commission acknowledged that its earlier proposals might not give the member countries sufficient flexibility in setting their excise rates. As an alternative, it suggested that the EC would impose only minimum rates, with the original rates established in the 1987 proposal taking the form of reference rates for long-term harmonization. Assuming that some intra-EC differences may be permitted, Lee et al. (1988) argue that the EC should limit the country's discretion to vary the relative taxes on different alcoholic drinks in order to prevent countries from using the rate structure as an instrument to protect domestic producers. Kay and Keen (1987) maintain that such a structure should be systematically designed on the basis of the alcohol content in view of the medical arguments used to justify high taxes on alcoholic drinks.

(ii) Tobacco products

Just as in the case of alcoholic drinks, health considerations justify the taxation of tobacco products. 2/ Relative to the harmonization of excises on alcoholic drinks, the EC has made more progress in the process of harmonizing the various tobacco excises, in particular the excise on cigarettes. The excise on cigarettes, which accounts for over 90 percent of the EC manufactured tobacco market, is the main tobacco excise in the EC.

Cigarette tax harmonization has focused on the balance between the specific and ad valorem components of the excise tax. As a result of various Directives, member countries have reduced the specific rate element in the cigarette excise to a range between 5 percent and 55 percent of the total tax. However, whereas the overall level of cigarette taxation is quite uniform, the importance of the specific rate component still varies widely within the EC. In particular, Belgium, France, Italy, and Luxembourg rely predominantly on ad valorem taxation. Denmark, Ireland, and the United Kingdom, in contrast, apply a specific component close to the maximum permitted by the Commission. The countries levying low specific and high ad valorem components tend to use their excise structure to protect domestic producers who grow primarily low quality tobacco, which commands a price advantage over

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1/ The high duty jurisdiction would consist of Denmark, Ireland, and the United Kingdom. Greece, Italy, Spain, and Portugal would make up the low duty jurisdiction. CEPS (1989) suggests that the EC may be divided into duty zones also for cigarettes, wine, beer, and mineral oils. The zones could differ across dutiable goods.

2/ See Shoup (1983, p. 258-60).

imported tobacco. 1/ Compared to specific taxation, ad valorem taxation benefits low cost producers because it widens the absolute price differential in favor of these producers. Table 10 indicates that retail prices vary considerably among countries. These price differences are due mainly to differences in quality rather than to tax burdens.

The Commission proposed in 1987 that member countries harmonize on the arithmetic averages of the rates of tax in each member country. 2/ This proposal yielded a specific excise of ECU 19.5 per 1,000 cigarettes. The ad valorem component, combined with the VAT, would be equivalent to 52-54 percent of the retail price inclusive of all taxes. These tax rates are consistent with the Commission's health policy because they would increase the average tax burden by about 30 percent. The total tax burden would fall significantly only in Denmark, while nine countries would experience a higher tax burden on cigarettes. As in the case of excises on alcoholic drinks, the Commission stated in its 1989 suggested amendments that countries could be left free to set their own rates above certain minimum rates, with, again, provision for harmonization in the long term. 3/ EC countries could maintain limited differences in duty rates by marking goods leaving bonded warehouses with a fiscal stamp or a meter impression. 4/

Ad valorem rates may be preferred over specific rates because inadequate inflation adjustment of harmonized specific rates could result in an unintended redistribution of the tax burdens across

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1/ The Common Agricultural Policy subsidizes tobacco grown in various EC countries, thereby further increasing the price advantage of domestically produced tobacco.

2/ Commission of the European Communities (1987f). As regards total taxes on manufactured tobacco other than cigarettes, the EC also uses the arithmetic average as the mid-point for harmonization. The specific component of the tax burden on these types of tobacco is to be eliminated. See Commission of the European Communities (1987g).

3/ See Commission of the European Communities (1989c).

4/ See, for example, Lee et al. (1988). They maintain, however, that the EC should remove the national discretion over the ad valorem component because this component can be used to segment the internal market by protecting domestic producers.

individuals and tax revenues across countries. However, there are several authors who favor specific rates in view of administrative and theoretical considerations. 1/

(iii) Mineral oils

Taxes on motor fuel are levied mainly as user charges. The Commission has stated that fuel excises and motor vehicle taxes should bear some relation to the construction and maintenance costs of highways. Fuel taxes are also used to conserve energy, protect the environment, and reduce imports. Furthermore, concern about international competitiveness dominates the structure of fuel taxation; countries tend to levy high tax rates on fuels used mainly by final consumers while collecting lower tax rates on fuels used largely as an input in industrial production. Some countries exempt fuels for selected industrial uses entirely.

Excise duties on motor fuel diverge significantly across EC countries (Table 11). Countries differ not only in their rate structures but also in their treatment of individual products and in the range of exemptions. Denmark, Greece, Portugal, and especially Italy, which has attempted to discourage petrol consumption for balance of payments reasons, collect the highest duties on petrol. Compared to other fuels, petrol is relatively heavily taxed because it is used mainly by private consumers.

The EC proposals on mineral oils aimed at minimizing the disruptive effects on tax revenue and industrial cost patterns. 2/ Petrol was to be taxed at the arithmetic mean of present rates, that is, ECU 340 per 1,000 liters. Unleaded petrol would be taxed at a reduced rate because of environmental considerations.

The Commission based its proposal for the duty on diesel fuel on the average weighted by consumption in each country rather than on the arithmetic mean because the arithmetic mean would result in a lower tax rate corresponding to a fall in EC-wide revenue. Such a low rate would not be desirable because it would encourage motorists to substitute

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1/ If collected at the manufacturing stage, specific taxes are easier to administer because they do not require information about the ultimate selling price at the retail level (see, e.g., Lee et al. (1988)). Kay and Keen (1987) argue that commodities should be taxed on the basis of the characteristics that justify excises rather than their value. They maintain, therefore, that tobacco excises should be levied according to tobacco content, which is the characteristic that justifies excises on tobacco products. Imposing ad valorem excises multiplies cost differences between products that are not related to health considerations and also promotes degradation of quality.

2/ Commission of the European Communities (1987h).

diesel for higher-taxed petrol. 1/ This would both harm allocative efficiency and erode the tax base. Lee et al. (1988) observe that the competitiveness arguments for a lower rate on diesel largely disappear if the EC succeeds in harmonizing the tax structure across member countries. Moreover, a lower tax rate on diesel is consistent neither with the transport policy of the EC, which aims at using motor fuel taxes as user charges for the use of roads, 2/ nor with its environmental policies.

The 1989 suggested amendments to the 1987 proposals suggest that, compared to duties on alcoholic beverages and tobacco, the Commission is more hesitant to allow countries to freely set their duty rates on mineral oils (except possibly petrol) above certain minimum rates; intercountry differences in duties on mineral oils may give rise to more serious competitive distortions because mineral oils are used as inputs in the production process.

4. Lessons from federal systems

In the United States, 46 out of 50 states plus the District of Columbia and a large number of local governments levy retail sales taxes. These taxes differ from VATs in that the payment of tax is suspended until registered traders sell the taxed commodities to unregistered traders or consumers. 3/ Table 13 shows that state sales tax rates are lower than commodity tax rates levied by EC countries and that tax rates can differ significantly between bordering jurisdictions. For example, Washington (6.5 percent tax rate), Massachusetts (5 percent), and Pennsylvania (6 percent) share borders with, respectively, Oregon, New Hampshire, and Delaware--all states that do not levy any sales taxes. Most states levy uniform rates but some allow lower rates or exemptions for motor vehicles, foods, medicines, and producer goods. Whereas some states levy broad-based taxes and include services in the tax base, others allow many exemptions--

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1/ The Commission selected the weighted average over the arithmetic average in formulating its harmonization proposals for heating gas oil and heavy fuel oil because the weighted average would yield the lowest tax rate. A lower tax rate was preferred because it would discourage substitution to alternative heating fuels. In the case of heavy fuel oil, the Commission was also concerned about the adverse effect of a high tax rate on the international competitiveness of industries located in the EC.

2/ Timmermans (1988) and EPC (1988) argue that the EC should carefully coordinate its proposals for excises on motor fuels with other policies affecting road transport. Commission of the European Communities (1986) discusses fiscal policies distorting road transport.

3/ OECD (1988a, Chapter 6) evaluates the relative merits of retail sales taxes and VATs.

including services. These differences in coverage contribute to interstate differences in the relative importance of sales tax revenue in total state revenue (Table 13).

In the United States, there has been considerable concern with coordinating state sales taxes and, in particular, the tax treatment of interstate sales. Although, in principle, retail sales taxes are levied on a destination basis, in practice states cannot enforce taxes on over-the-counter retail purchases by its residents in other states. 1/ Several studies that have tried to estimate the effects of interstate tax rate differentials on cross-border shopping 2/ suggest that consumers are responsive to tax-induced price differentials of high value items but that cross-border shopping is fairly localized. Hence, whereas cross-border shopping can hurt retailers located in the border areas of high tax states, the overall efficiency losses appear limited--unless the size of the taxing jurisdiction is small.

Interstate purchases through mail-order firms have become the most serious problem concerning the interstate coordination of sales taxes after the U.S. Supreme Court ruled in 1967 that a firm does not have to charge sales taxes on sales to consumers residing in a state in which the firm does not have a nexus. As a result of this ruling, mail-order firms have become a channel for avoiding sales taxes altogether. Recent estimates put the average revenue loss as high as 4 percent of total sales tax revenue. Mail-order firms have resisted attempts to close this loophole; they argue that the cost of complying with the various tax laws of all state and local authorities would be excessive.

In Canada, all provinces, except Alberta, levy retail sales taxes. 3/ As regards tax rates, regional differences are wider and levels higher than in the United States (Table 14). However, local sales taxes do not exist and tax bases are somewhat more uniform than in the United States. Differential retail sales tax rates in Canada have not attracted much attention because of two reasons. First, Canada is sparsely populated and has few large border towns. Hence, over-the-counter border sales are not important. Second, provinces have reached agreements with out-of-province firms (including large mail-order firms) to collect taxes on sales to their residents (see Thirsk (1980)).

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1/ However, states enforce sales taxes on goods that must be registered, such as cars, by collecting the tax at the time of registration.

2/ See, for example, Fox (1986), and Walsh and Jones (1988).

3/ At present, Canada levies a manufacturer's sales tax at the federal government level. The Government plans to replace this tax by a multi-stage sales tax of the VAT type, which would be collected at each stage in the marketing and production chain.

The experiences of the United States and Canada suggest that rate differentials should not have to create large distortions, especially if the EC would succeed in enforcing the destination principle for cross-border sales by mail-order firms. The EC may find such a solution easier to achieve than the United States does because the tax base is more uniform across EC countries and the number of EC jurisdictions levying a separate VAT is much smaller than the number of states and local authorities in the United States levying their own sales taxes. The arrangements in Canada, which consist of about the same number of sales tax jurisdictions as the EC, seem to offer an attractive option.

As regards cross-border shopping, taxes levied according to the destination principle can be enforced only on a few durable goods for which registration requirements exist. Therefore, the EC will have to treat most over-the-counter border sales according to the origin principle. Hence, tax rate differentials will create some locational distortions. Whereas the overall efficiency losses may be small, the consequences for some retail businesses in border areas may be quite serious.

5. Effects of the Commission's proposals

a. Allocative effects

The Commission's proposals are likely to encourage intra-EC trade because the compliance costs associated with the new system of border tax adjustments are unlikely to exceed the costs of complying with the present system of border controls. Similarly, the proposed system is likely to reduce the cost of tax administration. 1/ Table 15 presents estimates of the costs of current border formalities borne by firms on bilateral trade flows. 2/ Trade would rise also because the harmonization proposals would curtail the ability of countries to tailor their tax structure to the interest of domestic producers.

The proposals, and in particular the approximation of excise rates, have potentially important implications for competitive conditions in several markets. Although the associated restructuring of production would adversely affect some producers in the short run, overall, the restructuring should be conducive to the long-term efficiency gains. Moreover, the producers of tradable goods might experience only small

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1/ Nevertheless, several commentators have suggested that the costs of complying with and administering the clearinghouse and linked bonded warehouse systems would be significant. In view of these concerns, Economic and Social Committee (1988a) urges the Commission to estimate the costs and benefits of the proposed new systems of border tax adjustments.

2/ Only part of these costs is due to fiscal formalities.

effects because the proposals are designed to minimize the effects on the overall level of taxation in the EC and, therefore, on producer prices.

On the consumption side, in contrast, changes in VAT rates, the reclassification of goods in different VAT bands, and especially the harmonization of excise duties, would generate significant effects on the structure of consumption in various member countries. Tables 16-20 present estimates from national studies regarding the effects of the Commission's 1987 proposals. 1/ Table 16 contains estimates by Symons and Walker (1989) on the structure of household consumption in the United Kingdom. Lower excises on alcoholic beverages would boost alcohol consumption significantly, while higher excises on mineral oils would reduce household demand for fuel by about 12 percent. Food consumption would fall by 3 percent, assuming the repeal of zero rating of food. Ireland and Denmark would also have to significantly lower their excises on alcoholic beverages (see Table 9) which is likely to increase alcohol consumption--just as in the United Kingdom.

Milana (1989) provides some estimates for Italy which are contained in Table 17. The main tax changes affecting consumption patterns are higher excises on alcoholic beverages and tobacco and lower taxes on energy. Table 18, which contains estimates for France, indicates that changing excise rates and imposing reduced and standard VAT rates of, respectively, 9 percent and 19 percent to conform to the Commission's 1987 proposals would reduce the volume of household consumption of alcoholic beverages and tobacco by, respectively, 6 percent and 4 percent. The volume of car expenses, motor fuel, and home energy consumption would rise as taxes on mineral oils would fall and the increased VAT rate on cars would be abolished. The elimination of the increased rate would also stimulate the demand for electronic appliances. In Germany the consumption of petrol is expected to fall by 5 percent as consumers shift to diesel, while higher excises on tobacco would decrease cigarette consumption by 10 percent (Table 19). In Belgium, prices for petrol and diesel would increase substantially, which is estimated to reduce the volume of expenditures associated with car travel by 7 percent (Table 20). At the same time, the elimination of increased VAT rates on cars, heating, and lighting would stimulate the consumption of these commodities.

To summarize, tobacco consumption would fall in most EC member countries, except Denmark. As regards alcoholic beverages, consumption would tend to decline in Mediterranean countries and rise in Denmark, Ireland, and the United Kingdom. While demand for petrol would decline

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1/ Although the May 1989 suggested amendments to these proposals would allow countries more flexibility in setting their tax rates, tax competition may well result in a tax structure close to the 1987 proposals--except for the allowance of the existing zero VAT rate on certain necessities.

in Belgium, Germany, and the United Kingdom, other member countries including Italy, France, Denmark, and Ireland, would experience a rise in demand for petrol and diesel. At the same time, demand for luxury goods would probably increase in most member countries (Belgium, Denmark, France, Greece, Ireland, Italy, Portugal, Spain) that currently levy increased VAT rates or specific excises on such commodities. Food consumption would fall in Ireland, Portugal, and the United Kingdom but only to the extent that they were to eliminate the zero VAT rate on such products.

As regards welfare effects, the Commission's proposals are likely to reduce inefficiencies in production and consumption. Comparative advantage rather than tax factors would increasingly determine the location of production within the EC. In particular, border controls would no longer inhibit intra-EC trade. Harmonization of excises would also help prevent member countries from using excise duties, even indirectly, for protectionist purposes. In an integrated EC market, companies would face incentives to improve production efficiency and to innovate as competitive pressures intensify. Moreover, they would be encouraged to realize learning-by-doing effects and the economies of scale attainable within a larger internal market.

General equilibrium models suggest that efficiency gains from economies of scale can be quite large and typically exceed the gains from trade calculated on the assumption of constant returns to scale. However, it is difficult to isolate the impact of commodity tax harmonization from the effects of reducing nontax barriers to intra-EC trade. Narrowing the differences in VAT rates would contribute to production efficiency by mitigating distortions arising from the effect of diverging VAT rate differentials on the cost structure of sectors that are exempt from VAT or that buy inputs from exempt sectors. The unification of excise rates on fuel would generate similar beneficial effects.

Consumption efficiency would improve because of two reasons. First, the harmonization proposals would generally lead to more uniform tax rates within most countries, especially in countries levying increased VAT rates (Belgium, Greece, France, Italy, Portugal, and Spain) and high selective excise rates on luxury goods (Denmark and Ireland), many of them to be dropped or lowered. This would most likely raise overall consumer welfare because it would reduce the effect of the tax system on how households allocate their consumption over various commodities.

Second, the proposals would reduce intercountry differences in tax rates. As a result, relative prices facing consumers residing in different countries would tend to converge, thereby improving the efficiency with which consumption spending is allocated across member countries. Most of the benefits would accrue to high-tax countries that would reduce their tax rate relative to the EC average; they would experience the largest expansion of transactions for which the social benefits, as reflected in the tax-inclusive price, 1/ exceed national costs, as reflected in the tax-exclusive price. The increase in these transactions would be especially large because lower foreign demand associated with higher tax rates in low tax countries would prevent higher domestic demand from raising market prices. 2/

The positive overall effects on efficiency need to be weighed against two potentially significant negative welfare effects. First, the harmonization process would increasingly constrain countries in selecting the tax structure that best meets their national social preferences. 3/ To illustrate, depending on social welfare functions, lower taxes on alcoholic beverages and tobacco may raise the marginal social costs above the private benefits of consuming these goods in Denmark, Ireland, and the United Kingdom. Further, if mobility of labor within the EC increases, taxes may become largely benefit charges. In that case, the VAT may be the only major tax that countries can use to finance differences in expenditures on public goods corresponding to different preferences because the VAT base (i.e., private consumption) may most closely match the benefits from public goods. 4/ Second, the removal of border controls might exacerbate distortions due to VAT rate differentials by encouraging individuals and exempt businesses that are not required to register for imports to engage in cross-border shopping. The overall efficiency losses associated with such behavior could, of course, be mitigated through spontaneous tax rate

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1/ This assumes the absence of externalities. In the case of alcohol and tobacco products, the tax-inclusive price is likely to exceed net social benefits.

2/ Low-tax countries raising their taxes to the EC averages might lose as the consumption of goods for which national benefits exceed costs would decline. However, in the case of alcohol taxation, alcohol producing countries in southern Europe that raise these taxes might also gain because the social cost of alcohol consumption might have exceeded the national benefit in the pre-harmonization tax system. At the same time, these countries would not suffer a serious terms of trade loss as a result of higher domestic taxes because demands from northern European countries rise as these countries would reduce their excises on alcohol.

3/ The Commission is willing to consider derogations that "do not affect the integrity of the internal market."

4/ More generally, increased mobility of factors within the EC may result in inefficiently low levels for those expenditures for which it is difficult to find taxes that match the benefits.

harmonization. Moreover, special arrangements for tax exempt institutions, mail-order firms, and direct car purchases should help contain the incentive effects of remaining tax rate differentials. 1/

b. Distributional effects

Relative changes in either consumer or producer prices that accompany the allocative effects might have major implications for the intracountry distribution of income. Focusing on the effects of changes in consumer prices, 2/ Symons and Walker (1989) found that, on balance, the Commission's initial proposals would slightly increase income inequality in the United Kingdom. Although low-income households would benefit from lower taxes on tobacco and alcohol, this would be more than offset by the regressive elements of the proposals, in particular, higher taxes on food, fuel, and children's clothing--assuming the abolition of the zero VAT rate.

In general, the proposals may widen income inequalities in most member countries. 3/ In particular, an increment in excise rates on certain income-inelastic goods (in Greece, Portugal and Spain) and abolition of increased VAT rates or selective excises on income-elastic commodities (Belgium, Denmark, France, Greece, Italy, Portugal, and Spain) will by themselves tend to reduce the progressivity of the tax system. A possible removal of the zero VAT rates (Ireland, Portugal and the United Kingdom) would compound this effect. Whether commodity tax harmonization would harm low-income households ultimately depends on the accompanying fiscal measures. While some of these measures would primarily deal with the revenue implications of the harmonization proposals, others--for instance, personal income tax changes or adoption of targeted subsidies--could be designed explicitly to protect the

1/ In addition, cross-border shopping may induce governments to opt for higher personal income tax rates and lower commodity tax rates than in the absence of these transactions in order to protect retail businesses located near the borders. This may harm efficiency because, at current rates, the VAT is likely to yield lower marginal welfare costs than income taxes. See Tait (1988, pp. 220-21).

2/ As regards tradable goods, the EC proposals are likely to generate larger effects on consumer prices than on producer prices because they tend to leave the average level of taxation in the EC largely unaffected.

3/ Moreover, the elimination of border controls is likely to enhance the mobility of selected factors, including various kinds of capital and labor. This tends to reduce the ability of governments to redistribute income because increased mobility of selected factors makes it more difficult to extract rents from these factors. It also should be noted that some of the commodity groups included in the proposed reduced VAT rate band under the 1987 proposals (such as energy products for heating and lighting) are income elastic items.

living standards of low-income households. 1/ However, in countries that do not have alternative policy instruments but rely mainly on differential commodity taxation to pursue their equity objectives, the fiscal system is likely to become less progressive as a result of the harmonization proposals.

The changes in relative producer prices might affect the income distribution--not only within a given country, but also among countries in the event that relative market prices would influence the terms of trade among member countries. 2/ However, an analysis of these effects would require a disaggregated model that accounts for the general equilibrium effects on relative prices. 3/

c. Revenue effects

Estimates of first-order revenue effects assume the absence of compensatory fiscal measures and ignore induced substitution and income effects although relative price effects and the resulting changes in the structure of demand may be significant for certain member countries--as indicated above. In fact, any initial revenue losses caused by a cut in excise rates may largely be offset over time by a broadening of the tax base. Moreover, additional macroeconomic responses may offset the initial impact on tax revenues through induced changes in the tax base. Changes in cross-border shopping by individuals and tax exempt entities may also affect revenue.

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1/ Davis and Kay (1985) show how one can design a package of expenditure measures aimed at offsetting the regressive effect of eliminating zero rating in the United Kingdom.

2/ Keen (1987) demonstrates that tax harmonization typically redistributes income across countries. Accordingly, tax harmonization might benefit all member countries only if the countries that gain from harmonization compensate those that lose.

3/ Jones and Whalley (1988) use an applied general equilibrium model to study the effects of federal tax policies in Canada on welfare of the various Canadian provinces. They find that federal taxes generate significant effects on the interregional distribution of income. To illustrate, removing all federal nonenergy taxes would reduce Quebec's regional income by more than 3 percent and raise Ontario's income by about 2 percent. However, these welfare effects include the effects not only of changes in regional terms of trade but also of interregional redistribution of tax revenues across provinces by the federal government. Hence, the intra-EC distributional effects associated with national tax systems, which keep most tax revenues within each EC country, are likely to be smaller.

Estimates of the revenue impacts of the Commission's 1987 proposals for VAT and excise rate approximation are presented in Table 21. 1/ Denmark and Ireland are likely to suffer the largest revenue losses. In Denmark, the reduction of the standard VAT rate to 20 percent and the introduction of a reduced rate at the maximum level of 9 percent would lead to an estimated fall in revenue of about 3 percent of GDP that may rise to as much as 6 percent of GDP with the elimination of all minor excises (namely, excises on commodities other than alcoholic beverages, tobacco and mineral oils) and the reduction of several major excises. 2/ The total revenue loss in terms of GDP in Ireland amounts to about 3 percent, reflecting primarily losses from excise revenue and especially a large reduction in taxes on alcohol. The removal of zero rating would partially offset the revenue losses due to a cut in the standard VAT rate from 25 percent to 20 percent. In any event, in the absence of frontier controls, it would be difficult for Ireland to maintain a standard rate much above the 15 percent U.K. rate.

On the basis of informal calculations--in the absence of published studies--it appears that Greece, Portugal and Spain would benefit from added revenue amounting to some 2 percent of GDP, chiefly from excise rate increments on products with a relatively low price elasticity of demand, and including a net contribution of less than 1 percent of GDP from changes in VAT rates in Spain.

For most other EC member countries, the estimated revenue impact amounts to less than 1 percent of GDP. In France, a fall in VAT revenue dominates a small reduction in excise receipts. However, as suggested by the range of estimates, the loss in VAT revenue may be mitigated by flexible implementation, such as maintaining the current level of taxation on automobiles as well as on heating and lighting products. The small fall in excise receipts corresponds to the net effect of a large decrease in revenue from taxes on oil products and a substantial increase in revenue from taxes on tobacco and alcohol. A small decrease in VAT revenue in Germany is anticipated, reflecting the offsetting influences of a small broadening of the VAT base on the one hand, and

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1/ Most of the studies make broadly similar assumptions about the VAT tax rates; in most countries, it is assumed that only the minimum changes are made to satisfy the VAT band. Most of the estimates in the studies cited are based on first-order revenue effects; however, the results reported in CEPS (1989) are drawn from various sources and may include some second-order effects. Some observers have argued that tax-induced cross-border shopping by individuals and tax-exempt institutions will force high-tax countries to reduce taxes even further than required by the 1987 EC proposals.

2/ The assumed elimination of all minor excises overstates the estimated revenue loss in that excises on some nontradables could be retained under the proposals. In particular, the excise on motor vehicles (for example in Denmark and the Netherlands) could be converted into registration fees.

the increased coverage of the reduced rate, on the other. Harmonization of excises in Germany would involve increased revenue from excises on oil products, tobacco, and beer. The abolition of some minor excise taxes would only partially offset these revenue gains. As regards Italy, it is not clear whether the rise in revenue from VAT and excises on tobacco and alcoholic beverages would compensate for a possible fall in oil excise receipts. For the United Kingdom, the estimated first-order revenue gain reflects the offsetting influences of two large effects: a large fall in excise receipts (especially those on alcohol and diesel fuel) as against a significant rise in VAT revenue arising from the elimination of zero rating. For Belgium, studies suggest a similar small gain in total revenue; a net fall in VAT revenue, which reflects lower taxes on cars and energy supply, is more than offset by a large increase in excise revenue, mainly from oil products. Luxembourg 1/--and to a lesser extent the Netherlands--is likely to gain from first-round revenue effects, which could rapidly vanish due to a shrinking tax base associated with cross-border shopping.

d. Macroeconomic effects

While several model-based simulations have been performed on the macroeconomic effects of the Commission's 1987 proposals, comparison of the results is made difficult by differing assumptions concerning the implementation of the proposals, alternative policy assumptions, and different model structures. None of the models used for such simulations thus far seems to approximate sufficiently closely the medium-term, multi-country and multi-sectoral computational framework that in principle would be required for such an exercise. In particular, the models for the most part do not model the allocative response to tax-induced price changes that underly the macroeconomic effects, which are likely to be the most significant over the medium term. Among the various models applied, the Commission's HERMES seems to contain the richest sectoral disaggregation, whereas the OECD's INTERLINK can capture in principle the transmission of the impact of exogenous changes among national economies. 2/

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1/ An informal calculation for Luxembourg indicates an immediate revenue gain totaling some 5 percent of GDP, most of which, however, would be quickly eroded by a sizable response of cross-border shoppers to the alignment of standard VAT and excise rates to the proposed minima.

2/ Both of these models have been developed to simulate the medium-term effects of various aspects of implementing the single market. See Commission for the European Communities (1988e).

Preliminary simulation results of medium-term macroeconomic effects of the VAT rate approximation under the 1987 proposals based on the INTERLINK model are given in Table 22. 1/ In the reported simulations, standard and reduced VAT rates are fixed at, respectively, 16.5 percent and 6.5 percent with a ± 2.5 percentage point variation around the central rates. Each member country is assumed to select its actual VAT rate so as to minimize the first-order revenue effects (including the effects of a fully harmonized VAT base). 2/ The simulations are based on a number of simplifying assumptions: fixed nominal exchange rates; fixed taxes other than the VAT; fixed real government expenditures; and fixed nominal money stocks for the four largest member countries, while nominal interest rates are fixed for the remaining member countries. The simulations account neither for spill-over effects from other countries nor for the effects of the removal of border controls.

Besides the main direct impact of VAT rate changes on prices, secondary price effects may also occur through the wage indexation mechanism that reinforces the effect of an initial price change on the price level and through activity effects, assuming a Phillips curve relationship, that may weaken the initial price effect.

The general picture that emerges is that, with the exception of four countries (Denmark, France, Portugal, and the United Kingdom), the static macroeconomic effects--subject to the above caveats--of the proposal would be negligible. Consistent with the earlier findings on the revenue effects from VAT harmonization and given the assumption that no compensatory fiscal action is taken, Denmark would experience the strongest macroeconomic response stemming from the initial strong deflationary effect on prices. Over the medium term, GDP in Denmark rises about 4 percent above its baseline level while prices fall about 7 percent below their baseline level. In Ireland, the price response to VAT harmonization would be small because the effects of the cut in the standard rate is offset by the effect of the assumed abolition of the zero rate. In France, the liberalized deductibility of VAT would lead to inflationary pressures induced by a stimulus to economic activity that offsets over time the initial fall in prices and, at the end of five years, prices exceed their baseline level by nearly 1 percent. In the United Kingdom, in which VAT rates rise, assuming repeal of the zero rate, a similar mechanism operates to yield a small decline in the price

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1/ See Commission of the European Communities (1987j). The model does not include Greece and treats Belgium and Luxembourg as one country.

2/ Under this set of assumptions, the standard VAT rate is set at 19 percent for most countries, except for Spain, Germany, and the United Kingdom in which the rate is fixed at 14 percent and for Portugal and Italy with rates of about 16 percent. Reduced VAT rates vary from 9 percent (Belgium, Denmark, France) to about 7 percent (Germany) and between 4-6 percent for the remaining countries. No allowance is made for grandfathering of the zero rate, as suggested in May 1989.

level of about one half percent in the medium term. In Portugal, the initial deflationary effect on the price level remains unchanged at about 0.6 percent. In all countries the effect on external current account balance is small because changes in international competitiveness and domestic absorption have largely offsetting impacts on the external account. In general, countries that on balance reduce VAT rates experience a modest deterioration in their external balance relative to its baseline level.

If VAT and excise approximation work in opposite directions, the overall macroeconomic effects tend to be weaker than implied in the foregoing results. The results shown in Table 23 based on simulations with alternative models illustrate this point in the case of Belgium and Italy. With regard to Italy, the simulation results based on the Bank of Italy model show that VAT harmonization has stronger macroeconomic effects than the unification of excises. In contrast, the results reported for Belgium based on the HERMES model suggest that excise harmonization has a dominant macroeconomic impact; while the overall macroeconomic outcomes continue to be small, they are opposite in direction to the INTERLINK simulations of VAT harmonization.

For France, the simulations of VAT harmonization obtained from the METRIC model appear to be at odds with the INTERLINK results, as the short-term price effects and medium-term activity effects are opposite in sign. The differences may be attributed in part to the fact that the METRIC model allows for offsetting changes in the relative prices of consumer and producer goods that serve to weaken the transmission of tax changes to output and domestic absorption. A comparable discrepancy emerges between the simulations conducted with HERMES and INTERLINK for the VAT rate changes for the United Kingdom with respect to the medium-term price effects.

The simulations for Ireland, based on a national model for Ireland, stand apart from the others because of the underlying assumption that compensatory fiscal action is taken to ensure revenue neutrality. This assumption explains in part the otherwise somewhat surprising modest macroeconomic consequences of both VAT and excise harmonization, except for a remarkable dip in the rate of unemployment, of 1 1/2 percentage points over the medium term. The simulation incorporates an assumed increase in other indirect taxes to offset an estimated revenue loss of about 2.6 percent of GDP. Initially, consumer prices and external balance fall relative to baseline while domestic absorption expands; after two years, prices rise about 0.2 percent above their baseline level. This outcome reflects the rise in disposable income and domestic absorption, while the deterioration in the external balance is reversed as a result of the improvement in competitiveness given the initial fall in domestic prices.

Overall, while differing in specification detail and underlying policy assumptions, all the above models share a highly aggregated structure in which tax policy exercises its main macroeconomic effects through changes in the price level and domestic demand. Several limitations are common to all the models. The intertemporal effects of changes in tax structure on saving, investment, and the intertemporal allocation of labor are ignored. 1/ Furthermore, changes in consumption tax rates are not anticipated. But above all, as mentioned, the high level of aggregation glosses over the effect of the sectoral responses to the substitution in private consumption. Also, the simulations are based on separate national models and ignore international spill-over effects of tax policy. 2/ Notwithstanding the relatively weak macroeconomic responses, especially for the larger member countries, the above results may be magnified through dynamic repercussions, which are largely ignored in these experiments.

e. Effects on non-EC member countries

Non-EC member countries would be affected by the harmonization proposals through several channels. In the context of a federal system of government, Gordon (1983) formally derives the various types of externalities that a particular government can impose on other jurisdictions. Spill-over effects that appear relevant in the EC context include terms of trade effects as well as the consequences for tax bases in non-EC member countries. In a second-best world with initial distortions (including nontax distortions), EC tax harmonization may influence the volume of those transactions in non-EC member countries for which social benefits exceed social costs. However, spill-over effects are difficult to identify in the absence of an explicit general equilibrium model that accounts for both tax and nontax distortions in non-EC member countries.

The terms of trade effect depends on how the harmonization proposals would affect the demand for specific importables relative to that for exportables in the EC as a whole. The elimination of increased VAT rates might improve the terms of trade of non-EC member countries by stimulating import intensive demand for luxury goods in the Community. Similarly, excise harmonization might raise demand for high quality tobacco, which is mainly imported from non-EC member countries. More generally, the harmonization proposals would limit the ability of individual member countries to use their tax structures as an instrument of protection. In particular, excise rate harmonization is likely to result in some trade creation vis-à-vis non-EC producers of certain commodities. On the whole, the terms of trade gains and commodity trade creation effects would be very modest.

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1/ For an analysis of intertemporal effects, see Frenkel and Razin (1987). Some dynamic simulations provided in Frenkel et al. (1989ab) show that, depending on the initial trade position and parameter elasticities, a cut in consumption tax rates induces an excess demand for current goods and tends to worsen the current account position.

2/ Although in principle some of these effects could be captured through INTERLINK, in practice, they are not.

Several effects of the tax harmonization proposals are likely to harm non-EC economies. It is conceivable that the terms of trade of non-EC member countries may worsen in the short run owing, for example, to higher short-run investment demand in the EC associated with the restructuring of production. More importantly, the removal of border controls on intra-EC trade would result in trade diversion away from countries outside the EC, reflecting the substitution of consumption to higher cost EC suppliers from lower cost non-EC members, upon abolition of intra-EC border controls and retention of border control toward non-EC member countries. 1/ Moreover, some producers would move their production facilities from non-EC economies to the Community to benefit from the integrated EC market. 2/ This production shift may not only compound a possible deterioration in the non-EC terms of trade by shifting investment demand to the EC but also shrink the tax bases in non-EC countries. In addition, the above measures should strengthen significantly the export competitiveness of the EC. However, non-EC member countries would probably also benefit from the proposals. First, multinational companies based both inside and outside the Community are in a strong position to take advantage of the opportunities offered by the removal of such barriers. Second, higher EC consumption associated with income effects due to enhanced efficiency may raise import demand in non-EC member countries. However, on balance, coupled with removal of border controls, 3/ commodity tax harmonization would probably have adverse net static effects on non-EC economies, in the absence of compensatory macroeconomic policies. Dynamic effects may or may not offset these adverse effects.

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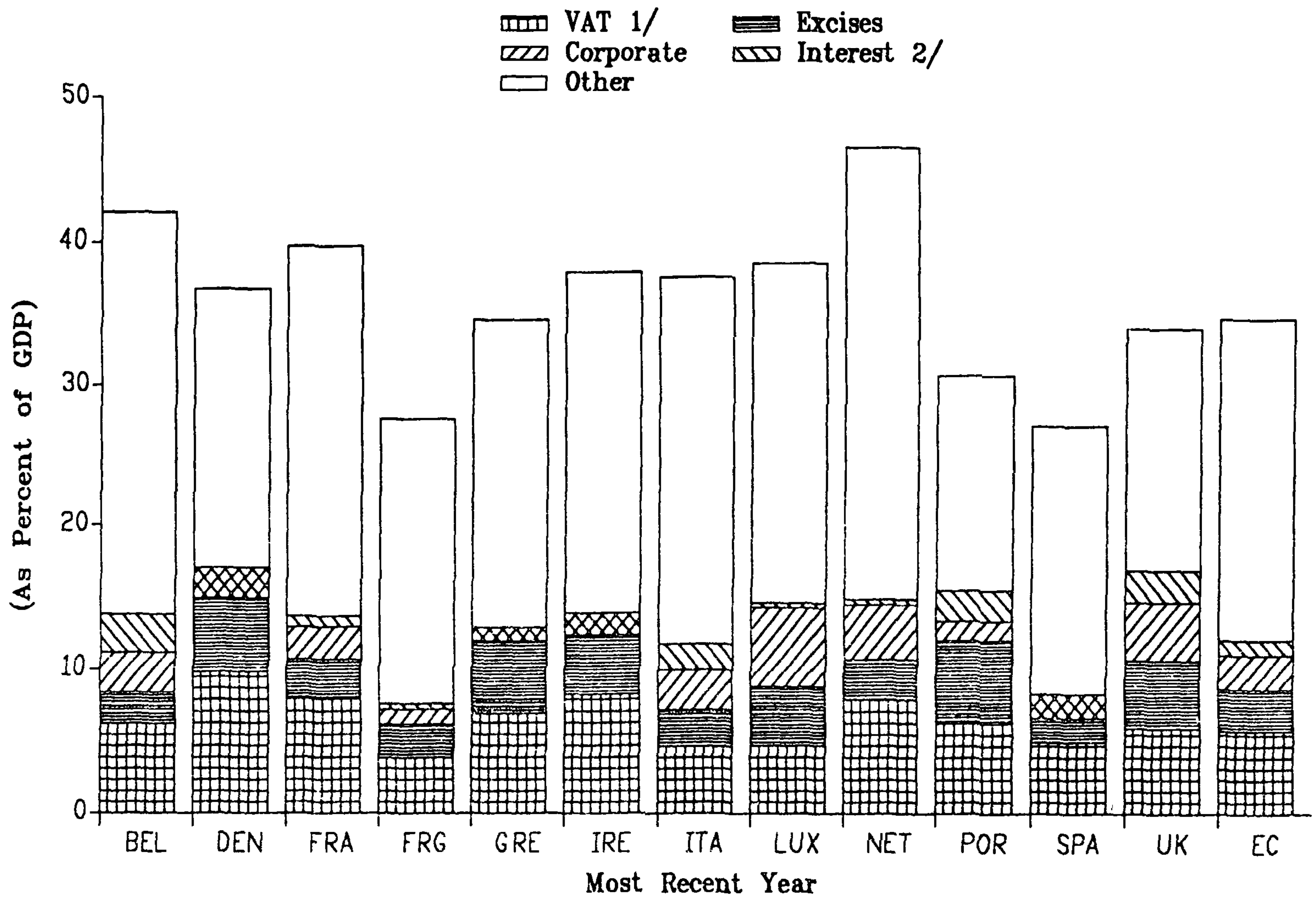
1/ Table 9 contains estimates for the costs of border controls borne by firms on trade flows between the EC and the rest of the world. Lipsey (1960) discusses the distinction between trade diversion and trade creation. Several studies have analyzed the effects of reducing trade barriers within a customs union in these terms. Several nontax proposals associated with the completion of the internal markets reduce nontariff barriers only for intra-EC trade. Trade diversion is likely to dominate the possible trade creation effects due to the harmonization of excises.

2/ See, for example, Bakhoven (1989).

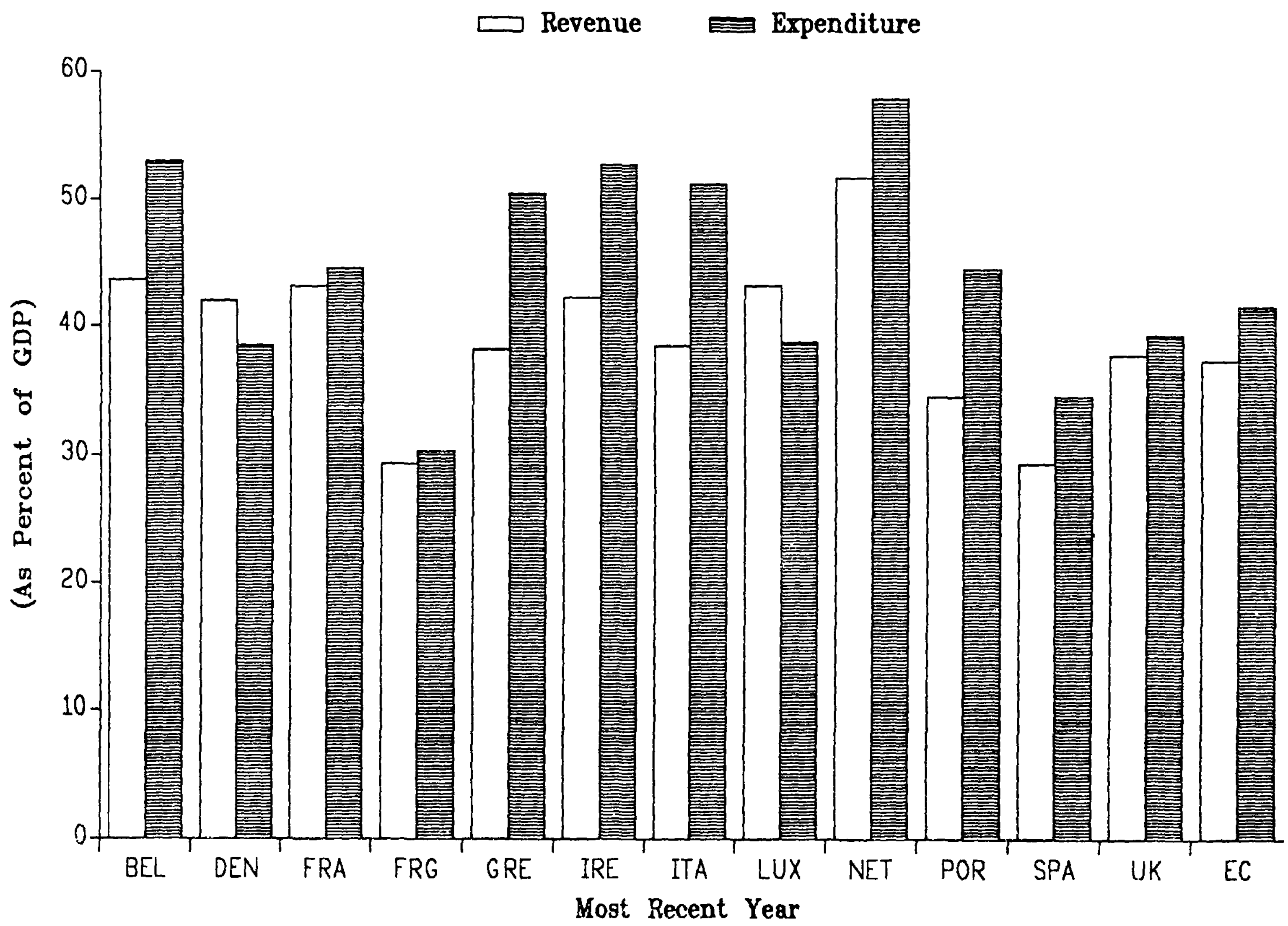
3/ See Commission of European Communities (1988e).

## Chart 1.
## European Community:
## GDP Shares of Selected Taxes




Source: IMF, Government Finance Statistics Yearbook (1989); and various national sources.
1/ Turnover tax in the case of Greece.
2/ Revenue from final withholding tax on interest income and dividends.

Chart 2.
European Community:
Revenue and Expenditure Shares of GDP




Source: IMF. Government Finance Statistics Yearbook. (1989): and various national sources.

Table 1. European Community: Summary of Corporate Tax Systems, 1989

| | Statutory Corporate Income Tax Rate (In percent): Central Government | Statutory Corporate Income Tax Rate (In percent): Central and Local Government | Net Worth Tax and Capital Based Tax Rate 1/ (In percent) | Investment Incentives | Loss Carryover: Carry Forward (Years) | Loss Carryover: Carry Back (Years) |
|---|---|---|---|---|---|---|
| Belgium | 43 | 43 | 0 | 13 % deduction | 5 | 0 |
| Denmark | 50 | 50 | 0 | -- | 5 | 0 |
| France | 39 | 39 | 0.62 2/ | -- | 5 | 0 |
| Germany | 56/36 3/ | 62/45 3/ | 0.13/0.58 4/ | -- | 5 | 2 |
| Greece | 35 5/ | 35 | 0 | -- | 3 | 0 |
| Ireland | 43 6/ | 43 | 0 | -- | no limit | 1 |
| Italy | 36 | 46 | 0 | -- | 5 | 0 |
| Luxembourg | 36 7/ | 43 | 0.11/0.88 8/ | 12 % credit 9/ | 5 | 0 |
| Netherlands | 35 | 35 | 0 | -- | 8 | 3 |
| Portugal | 36 | 40 | 0 | -- | 5 | 0 |
| Spain | 35 | 36 10/ | 0 | 5 % credit | 5 | 0 |
| United Kingdom | 35 | 35 | 0 | -- | no limit | 1 |

Note: -- = not applicable.

Sources: International Bureau of Fiscal Documentation; OECD; Price Waterhouse; and various national sources.

1/ Staff estimates of effective tax rates, excluding local property taxes on land and buildings.
2/ Taxe Professionelle.
3/ Split rate system: first rate applies to retained earnings, second rate to distributed earnings.
4/ Gewerbesteuer and net worth tax. Rates for debt and equity financed capital.
5/ Rate for industrial companies quoted on the Athens Stock Exchange.
6/ Rate for industrial companies, of 10 percent, is to remain in effect until the year 2000.
7/ Including a 2 percent surcharge for the employment fund.
8/ Net worth tax and business capital tax. Rates for debt and equity financed capital.
9/ Machinery only.
10/ Includes the surcharge for the chamber of commerce.

Table 1 (Concluded). European Community: Summary of Corporate Tax Systems, 1989

| | Taxation of Foreign Source Income (Foreign Branch Income and Remitted Subsidiary Income) | Capital Cost Recovery Allowances: Methods (SL,DB,AD) SL=straight line DB=declining balance AD=accelerated depreciation | | Capital Cost Recovery Allowances: Indicative or typical lifetimes, including accelerated depreciation | | First Year Conven- tion 1/ |
|---|---|---|---|---|---|---|
| | | Machinery | Buildings | Machinery | Buildings | |
| Belgium | Exemption 2/ | SL, DB | SL | 10 | 20 | Full year |
| Denmark 3/ | Credit or Exemption 4/ | SL, DB | SL 5/ | 10 | 30 | 2/3 of the year |
| France | Exemption Credit | SL, DB | SL | 10 | 20 | Pro-rated 6/ |
| Germany | Deduction or Exemption 7/ | SL, DB | SL, DB 5/ | 10 | 25 | Half year |
| Greece | Credit | SL | SL | 10 | 20 | Pro-rated 6/ |
| Ireland | Credit or Deduction 8/ | AD | SL | -- 9/ | 13.5 | Full year |
| Italy | Credit | AD | AD | 8.5 | 21.3 | Pro-rated 6/ |
| Luxembourg | Credit or Exemption 10/ | SL, DB | SL | 5 | 33.3 | Half year |
| Netherlands | Credit | | | | | |
| | Deduction or Exemption 11/ | SL, DB | SL | 10 | 33.3 | Pro-rated 6/ |
| Portugal | Credit | SL | SL | 6.7 | 25 | Full year |
| Spain | Deduction | | | | | |
| | Credit or Exemption 12/ | SL, DB | SL | 12.5 | 33.3 | Pro-rated 6/ |
| United Kingdom | Credit or Deduction | DB | SL | -- 13/ | 25 | Full year |

Note: -- = Not applicable.

Sources: International Bureau of Fiscal Documentation; OECD; Price Waterhouse; and various national sources.

1/ Share of the year over which depreciation is allowed in the first tax year.
2/ Exemption applies to foreign branch income (under treaty) and to 90 percent of net foreign dividends received from a permanent foreign participation.
3/ Denmark allows depreciation to start at the time the capital is ordered or construction initiated. Also the depreciable base is indexed to the price level.
4/ Exemption if from France, Germany, Ireland, Portugal, Spain.
5/ More than one rate applies over the life of the asset.
6/ Pro-rated from date of acquisition or installation.
7/ Exemption under treaty and for dividends from substantial participations in foreign companies.
8 Credit under treaty.
9/ Depreciation method is declining balance with a 50 percent depreciation allowance in the first year, 25 percent thereafter.
10/ Exemption for foreign branch income under treaty and for remitted income from subsidiaries with at least a 10 percent participation.
11/ Exemption when participation in foreign company exceeds a certain level.
12/ Credit or exemption under treaty.
13/ Declining balance method with a 25 percent rate.

Table 2. OECD Member Countries: Statutory Corporate Income Tax Rates, 1977-89

(In percent)

| | Corporate Income Tax Rate Central Government | | | |
|---|---|---|---|---|
| | 1977 | 1989 | Proposed or announced rate | Last change relative to 1977 |
| Belgium | 48 | 43 | 38 | -10 |
| Denmark | 37 | 50 | 35 | -2 |
| France | 50 | 39 | 37 (1990) | -13 |
| Germany | 56 | 56 | 50 (1990) | -6 |
| Greece | 39 1/ | 35 1/ | -- | -4 |
| Ireland | 45 | 43 2/ | -- | -2 |
| Italy | 25 | 36 | -- | +11 |
| Luxembourg | 40 | 37 | -- | -3 |
| Netherlands | 48 | 35 | -- | -13 |
| Portugal | 36 3/ | 36.5 | -- | +0.5 |
| Spain | 36 | 35 | -- | -1 |
| United Kingdom | 52 | 35 | -- | -17 |
| Australia | 50 | 39 | -- | -11 |
| Austria | 55 | 30 | -- | -25 |
| Canada | 46 4/ | 38 | -- | -8 |
| Japan | 40 | 42 | 37.5 (1990) | -2.5 |
| New Zealand | 45 | 28 | -- | -17 |
| Sweden | 56 5/ | 52 | 30 (1991) | -26 |
| United States | 48 | 34 | -- | -14 |

Sources: OECD; Financial Times; Price Waterhouse.

1/ Rate for industrial companies quoted on the Athens stock exchange.
2/ A 10 percent rate applies to industrial companies until the year 2000.
3/ Includes the complementary tax on retained earnings.
4/ Including basic rate of provincial tax credit (10 percent).
5/ Inclusive of municipal taxes, which were eliminated as of 1985.

Table 3. European Community: Degree of Integration of Personal and Corporate Taxation, 1989

| | | Resident Shareholder | | | | Non-resident Shareholder | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Statutory Corporate Income Tax Rate (in %) | Tax Discrimination Variable 1/ | Degree of Integration | Top Marginal Personal Rate on Dividend Income (in %) | Payout Rate 2/ (in %) | Tax Discrimi- nation Variable | Dividend Withholding Tax 3/ (in %) | Payout Rate 2/ (in %) | Method of Integration of Personal and Corporate Taxes |
| | tc | k | $\frac{(100-tc)\,k}{100}$ | tp | $\frac{(100-tc)k(100-tp)}{100}$ | kl | wt | $\frac{(100-tc)kl(100-wt)}{100}$ | |
| Belgium | 43 | 1.0 4/ | 0.57 | 25 4/ | 43 | 1.0 | 15 | 48 | Dividend credit 4/ |
| Denmark | 50 | 1.25 | 0.63 | 57 | 27 | 1.0 | 15 | 43 | Dividend credit |
| France | 42 5/ | 1.5 | 0.87 | 57 | 37 | 1.5 | 15 | 74 | Dividend credit |
| Federal Republic of Germany | 56/62 6/ | 2.27 | 1.0/0.86 6/ | 56 | 38 | 1.25 | 15 | 40 | Split rate and dividend credit |
| Greece | 35 7/ | 1.54 | 1.0 | 42 8/ | 58 | 1.54 | 42 | 58 | Dividend deduction |
| Ireland | 10 9/ | 1.06 | 0.95 | 56 | 42 | 1.0 | 0 | 90 | Dividend credit |
| Italy | 36/46 6/ | 1.56 | 1.0/0.84 6/ | 62 | 32 | 1.0 | 15 | 39 | Dividend credit |
| Luxembourg | 37 | 1.0 | 0.63 | 59 | 26 | 1.0 | 15 | 54 | — |
| Netherlands | 35 | 1.0 | 0.65 | 72 | 18 | 1.0 | 15 | 55 | — |
| Portugal | 36.5/40 6/ | 1.0 9/ | 0.635/.60 6/ | 25 10/ | 45 | 1.0 | 15 | 51 | Dividend credit 10/ |
| Spain | 35 | 1.1 | 0.72 | 56 | 32 | 1.0 | 15 | 55 | Dividend credit |
| United Kingdom | 35 | 1.33 | 0.86 | 40 | 52 | 1.33 | 15 | 73 | Dividend credit |

Sources: International Bureau of Fiscal Documentation; OECD.

1/ Defined as the opportunity cost of retained earnings in terms of gross dividends foregone. k = 1 under the classical system, k > 1 if personal and corporate tax systems are integrated.

2/ Corporate income tax inclusive of local taxes.

3/ Typical rate under treaty.

4/ If the withholding tax on dividends is taken as a final tax, no dividend credit can be claimed. A dividend credit equal to 50 percent of net dividends can be claimed if dividend income is taxed as regular income (at a top marginal rate of 55 percent). As of 1990, the dividend credit will be eliminated and dividends taxed at the 25 percent withholding tax rate.

5/ The corporate income tax rate on distributed profits is higher than that ι retained profits, or 39 percent in 1989, 37 percent in 1990.

6/ Central government taxes only / central and local government income taxes.

7/ Rate on industrial company quoted on the Athens stock exchange.

8/ Final withholding tax rate.

9/ Special rate for industrial enterprises.

10/ If the withholding tax on dividends is taken as a final tax, no dividend credit can be claimed. A 7 percent dividend credit can be claimed if dividend income is taxed as regular income (at a top marginal rate of 40 percent).

Table 4. European Community: Rates of Taxation of Financial Investment Income of Resident Individuals, 1989

(In percent)

| | Bond Interest | | Dividends | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Rate of withholding | Top marginal income tax rate or withholding if final | Rate of withholding | Top marginal income tax rate or withholding if final | Top marginal rate on long-term capital gains 1/ | Reporting of financial investment income | Declaration in case of succession 2/ | Restricted capital movement of individuals |
| Belgium | 25 | 25 | 25 | 25 | 0 | No | Yes | None |
| Denmark | 0 | 57 | 30 | 57 | 0 3/ | Yes 4/ | (Yes) | None 5/ |
| France | 26 6/ | 26 | 0 | 57 | 16 7/ | Yes | Yes | Deposits |
| Federal Republic of Germany | 0 | 56/53 8/ | 25 | 56/53 8/ | 0 9/ | No | Yes | None |
| Greece | 0 10/ | 63 | 42 11/ | 42 | 0 | No | (Yes) | All 12/ |
| Ireland | 0/32 13/ | 56 | 0 | 56 | 30 14/ | No | (Yes) | Short-term 15/ |
| Italy | 12.5 | 12.5 | 10 | 56/53 8/ | 0 | No | (Yes) | Short-term 16/ |
| Luxembourg | 0 | 56 | 15 | 56 | 0 | No | No | None |
| Netherlands | 0 | 72/60 8/ | 25 | 72/60 6/ | 0 | Yes 4/ | (Yes) | None |
| Portugal | 25 | 25 | 25 | 25 17/ | 0 | No | Yes | All 18/ |
| Spain | 0/25 19/ | 66 | 25 | 66 | 66 | Yes | (Yes) | Short-term 20/ |
| United Kingdom | 0/25 21/ | 40 | 0 | 40 | 40 22/ | Yes 23/ | No | None |

Sources: Conseil National du Crédit; IMF; OECD; and various national sources.

1/ Capital gains on ordinary financial transactions.
2/ (Yes), If declaration is not automatic but only upon request by the tax authority.
3/ Stocks held over 3 years and bonds.
4/ Interest only.
5/ All foreign securities must be purchased through an authorized domestic financial intermediary.
6/ Including 1 percent social security contribution.
7/ If transactions do not exceed F288,400, capital gains are exempt.
8/ Current rate and proposed rate for 1990, respectively.
9/ Assets held over 6 months.
10/ In practice most bonds are tax exempt, though some should, in principle be subject to a withholding tax at progressive rates of income tax.
11/ The rate applies to registered and quoted shares.
12/ Except for some ECU denominated bonds.
13/ Zero rate for government bonds.
14/ The acquisition cost is indexed to the CPI, and a 2,000 pound exemption applies.
15/ Bonds with a maturity of less than two years and foreign bank deposits.
16/ All assets with a maturity of less than six months and foreign bank deposits. All foreign securities must be purchased and held through an authorized domestic financial intermediary.
17/ A dividend credit of 7 percent can be claimed if dividend income is globalized with other income.
18/ Investment funds can acquire foreign securities up to a limit.
19/ Zero rate for Treasury notes.
20/ Securities and deposits with maturity of less than one year. All foreign securities must be held through an authorized domestic financial intermediary.
21/ Zero rate for certain public loans.
22/ A 5,000 pound exemption applies. Capital gains taxed on a real rather than nominal basis.
23/ Bank interest only.

Table 5. European Community: Company Tax Wedges 1/

(Percentage points)

| | Inflation Rate | Current Tax Systems or Proposed Reforms (1) | Company Tax Base Harmonization 2/ (2) | Case 2 plus Harmonization of Statutory Tax Rates 3/ (3) |
|---|---|---|---|---|
| Common Inflation Rate | | | | |
| Belgium | 2 | 1.42 | 1.41 | 1.72 |
| Denmark | 2 | 1.15 | 1.35 | 1.80 |
| France | 2 | 1.99 | 0.79 | 0.26 |
| Federal Republic of Germany | 2 | 4.85 | 3.77 | 1.68 |
| Greece | 2 | 2.71 | 1.45 | 1.91 |
| Ireland | 2 | 0.32 | 0.17 | 1.68 |
| Italy | 2 | 3.25 | 3.13 | 2.76 |
| Luxembourg | 2 | 0.72 | 0.88 | -0.14 |
| Netherlands | 2 | 2.72 | 1.68 | 2.26 |
| Portugal | 2 | 2.71 | 1.48 | 1.65 |
| Spain | 2 | 2.12 | 1.52 | 2.29 |
| Weighted average | | 2.84 | 1.99 | 1.44 |
| Standard deviation | | 1.36 | 1.33 | 0.83 |
| Differential Inflation Rates | | | | |
| Belgium | 2 | 1.42 | 1.41 | 1.72 |
| Denmark | 5 | 0.47 | 1.41 | 1.93 |
| France | 2 | 1.99 | 0.79 | 0.26 |
| Federal Republic of Germany | 2 | 4.85 | 3.77 | 1.40 |
| Greece | 10 | 2.94 | 1.59 | 2.19 |
| Ireland | 2 | 0.32 | 0.17 | 1.68 |
| Italy | 5 | 3.48 | 3.38 | 2.96 |
| Luxembourg | 2 | 0.72 | 0.88 | -0.14 |
| Netherlands | 2 | 2.72 | 1.68 | 2.26 |
| Portugal | 10 | 2.69 | 1.55 | 1.76 |
| Spain | 5 | 2.28 | 1.67 | 2.52 |
| United Kingdom | 5 | 1.47 | 0.66 | 1.14 |
| Weighted average | | 2.88 | 2.06 | 1.53 |
| Standard deviation | | 1.38 | 1.34 | 0.87 |

Source: de la Fuente and Gardner (1989).

1/ Weighted average over buildings (0.4) and machinery (0.6) and over debt (0.4) and equity (0.6) financing.

2/ Common first year convention; elimination of accelerated and advanced depreciation; elimination of indexation of the depreciable base; adjustment of the depreciable base by the amount of investment grants; common set of depreciation methods.

3/ Common 43 percent statutory corporate income tax rate; elimination of local taxes and of capital and net worth taxes.

Table 6. European Community: Allocative Effects of Alternative Harmonization Scenarios

(Common 2 percent inflation rate)

| | | Tax Harmonization Scenarios (Reallocation of capital under current or proposed tax systems = 100) | | | |
|---|---|---|---|---|---|
| | | EC Only | | EC, United States & Japan | |
| | (1) | (2) | (3) | (2) | (3) |
| EC | | | | | |
| Average wedge 1/ | 2.8 | 2.2 | 1.7 | 2.1 | 1.6 |
| Standard deviation 1/ | 1.4 | 1.4 | 0.9 | 1.4 | 0.9 |
| Output index | 100.0 | 100.0 | 100.1 | 100.8 | 101.1 |
| World | | | | | |
| Output index | 100.0 | | | 100.0 | 100.1 |
| Interest rate | 5.5 | 6.1 | 6.3 | 5.8 | 5.9 |
| Steady state capital stock relative to base case | | | | | |
| Belgium | | 93.6 | 88.8 | 96.9 | 93.1 |
| Denmark | | 92.1 | 86.3 | 95.3 | 90.4 |
| France | | 104.4 | 106.6 | 107.6 | 111.3 |
| Germany | | 100.9 | 116.9 | 104.7 | 122.5 |
| Greece | | 103.9 | 97.4 | 107.5 | 102.1 |
| Ireland | | 95.8 | 81.1 | 98.6 | 85.0 |
| Italy | | 94.1 | 94.8 | 97.6 | 99.3 |
| Luxembourg | | 92.3 | 98.6 | 95.5 | 103.3 |
| Netherlands | | 102.0 | 94.6 | 105.5 | 99.1 |
| Portugal | | 103.5 | 99.5 | 107.1 | 104.3 |
| Spain | | 98.4 | 89.9 | 101.8 | 92.4 |
| United Kingdom | | 101.4 | 95.5 | 104.6 | 99.8 |
| EC | | 100.0 | 100.0 | 103.4 | 104.7 |
| United States | | | | 97.6 | 96.8 |
| Japan | | | | 97.3 | 96.4 |
| Equilibrium output (net domestic product) relative to base case | | | | | |
| Belgium | | 98.5 | 97.3 | 99.3 | 98.4 |
| Denmark | | 98.2 | 96.7 | 98.9 | 97.8 |
| France | | 101.0 | 101.4 | 101.6 | 102.4 |
| Germany | | 100.2 | 103.9 | 101.2 | 105.1 |
| Greece | | 100.9 | 99.4 | 101.7 | 100.5 |
| Ireland | | 99.1 | 95.5 | 99.7 | 96.5 |
| Italy | | 98.5 | 98.7 | 99.4 | 99.8 |
| Luxembourg | | 98.3 | 99.7 | 99.0 | 100.7 |
| Netherlands | | 100.5 | 98.7 | 101.2 | 99.8 |
| Poland | | 100.8 | 99.9 | 101.6 | 101.0 |
| Spain | | 99.6 | 97.5 | 100.4 | 98.6 |
| United Kingdom | | 100.3 | 99.0 | 101.0 | 100.0 |
| EC | | 100.0 | 100.1 | 100.8 | 101.1 |
| United States | | | | 99.4 | 99.2 |
| Japan | | | | 99.5 | 99.2 |

Source: de la Fuente and Gardner (1989).

1/ Weighted by share of capital stocks. The average wedge and the standard deviation differ from those of Table 5 because of the endogenous change in the interest rate.

Table 7. European Community: Value-Added Taxes

| Country | Year of Introduction | Statutory Rates 1/ Standard rate | Increased rate | Reduced rate | Scope of Zero Rate | VAT Revenue 2/ As % of tax revenue | As % of GDP |
|---|---|---|---|---|---|---|---|
| Belgium | 1971 | 19 | 25, 33 | 1, 6, 17 | Newspapers | 14.9 | 6.3 |
| Denmark | 1967 | 22 | -- | -- | Newspapers, large ships and aircraft | 26.7 | 9.8 |
| France 3/ | 1968 | 18.6 | 25 | 5.5 | -- | 20.1 | 8.0 |
| Germany | 1968 | 14 | -- | 7 | -- | 14.1 | 3.9 |
| Greece 4/ | 1987 | 16 | 36 | 3, 6 | -- | 20.0 | 6.9 |
| Ireland | 1972 | 25 | -- | 0, 5, 10 | Wide range of items | 21.7 | 8.2 |
| Italy | 1973 | 19 | 38 | 4, 9 | Newspapers, and some minor items | 12.5 | 4.7 |
| Luxembourg | 1970 | 12 | -- | 3, 6 | -- | 12.3 | 4.7 |
| Netherlands | 1969 | 18.5 | -- | 6 | -- | 17.1 | 7.9 |
| Portugal 5/ | 1986 | 17 | 30 | 8 | Basic foods, newspapers, medicines, agricultural inputs | 21.2 | 6.5 |
| Spain | 1986 | 12 | 33 | 6 | -- | 18.6 | 5.0 |
| United Kingdom | 1973 | 15 | -- | 0 | Wide range of items | 17.61 | 6.0 |
| Weighted average | | | | | | 16.6 | 5.8 |

Sources: "EC: The Evolution of VAT Rates Applicable in the Member States of the Community", Intertax, (1987/3) and IMF, Government Finance Statistics Yearbook (1989).

1/ As of January 1, 1989.
2/ Data for 1986, except for: France, Germany, Italy and the Netherlands, 1987; Greece and Luxembourg, 1985; and Greece, turnover tax, 1985.
3/ France applies VAT rates of 2.1 percent to daily newspapers, and 13 percent to sales and transfers of building land. Different VAT rates apply in Corsica.
4/ Different rates apply in Dodecanese.
5/ Different rates apply in the Azores and Madeira.

Table 8. European Community: Estimated Revenue from Operation of the Clearing House System, 1986 1/

| Member Country | Net Payment into Clearing House In ECU | Net Payment into Clearing House In percent of GDP |
|---|---|---|
| Belgium/Luxembourg | 747 | +0.62 |
| Denmark | -680 | -0.82 |
| France | -2,421 | -0.34 |
| Germany, Federal Republic of | 3,534 | +0.38 |
| Greece | -437 | -1.08 |
| Ireland | -52 | -0.21 |
| Italy | -147 | -0.03 |
| Netherlands | 1,509 | +0.86 |
| Portugal | -77 | -0.26 |
| Spain | -132 | -0.06 |
| United Kingdom | -1,845 | -0.33 |

Source: Comission for the European Communities, Completing the Internal Market--Introduction of a VAT Clearing Mechanism for Intra-Community Sales, COM (87) 323 (1987).

1/ Assuming VAT rates of 16.5 percent (standard rate) and 6.5 percent (reduced rate).

Table 9. European Community: Excise Duty Rates on Alcoholic Beverages 1/

(In ECU)

| | One hl of Pure Alcohol | One hl of Average Wine | One hl of Average Beer | As Percent of EC Average: One hl of pure alcohol | As Percent of EC Average: One hl of average wine | As Percent of EC Average: One hl of average beer | Revenue Alcohol Excises 2/: Percent of excises | Revenue Alcohol Excises 2/: Percent of tax revenue | Revenue Alcohol Excises 2/: Percent of GDP |
|---|---|---|---|---|---|---|---|---|---|
| Belgium | 1,251.78 | 32.59 | 10.20 | 98.48 | 56.40 | 45.76 | 15.45 | 0.72 | 0.33 |
| Denmark | 3,498.66 | 157.44 | 56.36 | 275.24 | 272.47 | 252.87 | 13.88 | 1.91 | 0.97 |
| France | 1,148.82 | 3.30 | 2.93 | 90.38 | 5.71 | 13.15 | 7.24 | 0.47 | 0.21 |
| Germany, Fed. Rep. of | 1,173.98 | 20.32 | 6.56 | 92.36 | 35.17 | 29.43 | 12.48 | 0.83 | 0.31 |
| Greece | 47.86 | -- | 10.27 | 3.77 | -- | 46.08 | 1.67 | 0.32 | 0.12 |
| Ireland | 2,721.78 | 278.84 | 81.45 | 214.12 | 482.56 | 365.44 | 29.01 | 5.34 | 2.15 |
| Italy | 230.25 | -- | 16.96 | 18.11 | -- | 76.09 | 3.08 | 0.15 | 0.06 |
| Luxembourg | 841.91 | 13.29 | 4.90 | 66.23 | 23.00 | 21.98 | 7.16 | 0.68 | 0.29 |
| Netherlands | 1,298.09 | 33.30 | 20.00 | 102.12 | 57.63 | 89.73 | 16.87 | 0.94 | 0.43 |
| Portugal | 248.24 | -- | 6.51 | 19.53 | -- | 29.21 | 2.14 | 0.38 | 0.12 |
| Spain | 308.90 | -- | 2.57 | 24.30 | -- | 11.53 | -- | -- | -- |
| United Kingdom | 2,483.36 | 154.32 | 48.75 | 195.37 | 267.07 | 218.72 | 24.22 | 2.91 | 1.13 |
| Unweighted average | 1,271.14 | 57.78 | 22.29 | | | | | | |
| EC proposal | 1,271.00 | 17.00 3/ | 17.00 | | | | | | |

Sources: EEC Excise Duty Tables; OECD, Revenue Statistics of OECD Member Countries, 1966-1987 (Paris, 1988).

1/ Rates as of April 1, 1987.
2/ Data for 1986.
3/ Sparkling wines: ECU 30 per hl.

Table 10. European Community: Excise Duty Rates on Cigarettes 1/

| | Specific Excise | Ad Valorem Excise (including VAT) | Ratio of Specific to Total Tax | Total Tax per 1,000 | Retail price | Proportion of Tax in Price | Tax Exclusive Rate | Revenue from Tobacco Excise 2/: As percent of all excises | Revenue from Tobacco Excise 2/: As percent of tax revenue | Revenue from Tobacco Excise 2/: As percent of GDP |
|---|---|---|---|---|---|---|---|---|---|---|
| | (ECU) | (In percent) | | (ECU) | | (In percent) | | | | |
| Belgium | 2.49 | 66.36 | 5 | 47.63 | 68.03 | 70 | 234 | 28.97 | 1.35 | 0.61 |
| Denmark | 77.49 | 39.25 | 55 | 140.89 | 161.54 | 87 | 682 | 14.67 | 2.02 | 1.02 |
| France | 1.33 | 71.06 | 5 | 26.55 | 35.49 | 75 | 297 | 11.41 | 0.73 | 0.32 |
| Germany, Fed. Rep. of | 27.27 | 43.70 | 39 | 69.45 | 96.52 | 72 | 257 | 29.99 | 1.99 | 0.75 |
| Greece | 0.61 | 60.42 | 4 | 13.68 | 21.63 | 63 | 172 | 17.68 | 3.35 | 1.23 |
| Ireland | 48.94 | 33.61 | 54 | 89.84 | 121.7 | 74 | 282 | 22.34 | 4.11 | 1.65 |
| Italy | 1.83 | 68.64 | 5 | 40.38 | 56.16 | 72 | 256 | 27.06 | 1.36 | 0.55 |
| Luxembourg | 1.72 | 63.55 | 5 | 34.30 | 51.26 | 67 | 202 | 2.38 | 0.22 | 0.10 |
| Netherlands | 25.99 | 35.73 | 50 | 51.95 | 72.67 | 71 | 251 | 18.62 | 1.03 | 0.47 |
| Portugal | 2.23 | 64.82 | 10 | 22.90 | 31.89 | 72 | 255 | 15.98 | 2.84 | 0.92 |
| Spain | 0.69 | 71.94 | 3 | 25.37 | 34.31 | 74 | 284 | n.a. | n.a. | n.a. |
| United Kingdom | 42.75 | 34.04 | 54 | 78.88 | 106.15 | 74 | 289 | 26.52 | 3.19 | 1.24 |
| EC proposal | 19.5 | 52-54 | | | | | | | | |

Sources: EEC Excise Duty Tables; OECD, Revenue Statistics of OECD Member Countries, 1966-1987, (Paris, 1988).

1/ Rates as of April 1, 1987.
2/ Data for 1986, except 1985 for Italy.

Table 11. European Community: Excise Duty Rates on Mineral Oils 1/

| | In ECU | | | | | Revenue from Mineral Oils 2/ | | |
|---|---|---|---|---|---|---|---|---|
| | 1,000 liters of Standard Petrol | 1,000 liters of Road Diesel | 1,000 liters of Heating Gas Oil | 1,000 kg. of Heavy Fuel-Oil | 1,000 liters of LPG | (as percent of total excises) | (as percent of total tax revenue) | (as percent of GDP) |
| Belgium | 260.94 | 122.51 | -- | -- | -- | 51.71 | 2.41 | 1.09 |
| Denmark | 472.50 | 236.25 | 236.25 | 265.62 | 163.46 | 23.66 3/ | 3.26 3/ | 1.65 3/ |
| France | 368.74 | 190.49 | 53.21 | 24.63 | 137.74 | 66.01 3/ | 4.25 3/ | 1.88 3/ |
| Germany, Fed. Rep. of | 255.07 | 213.39 | 8.11 | 7.24 | 159.61 | 53.11 | 3.53 | 1.32 |
| Greece | 348.81 | 106.38 | 108.66 | 93.12 | 39.65 | 58.58 4/ | 11.10 4/ | 4.07 4/ |
| Ireland | 361.50 | 279.08 | 48.04 | 10.28 | 222.39 | 35.41 5/ | 6.52 5/ | 2.62 5/ |
| Italy | 557.34 | 177.62 | 177.62 | 6.77 | 95.85 | 83.98 | 4.21 | 1.69 |
| Luxembourg | 208.75 | 100.18 | -- | 2.33 | 20.97 | 0.42 | 0.04 | 0.02 |
| Netherlands | 340.33 | 108.83 | 43.66 | 14.64 | -- | 37.33 | 2.07 | 0.94 |
| Portugal | 351.53 | 161.77 | 23.24 | 10.89 | 16.80 | 69.83 3/ | 12.43 3/ | 4.03 3/ |
| Spain | 253.87 | 123.51 | 38.42 | 0.69 | 27.42 | n.a. | n.a. | -- |
| United Kingdom | 270.69 | 228.92 | 15.36 | 11.20 | 135.34 | 40.84 6/ | 4.91 6/ | 1.91 6/ |
| Unweighted average | 337.51 | 170.74 | 62.71 | 37.28 | 186.44 | 43.41 | 4.56 | 1.77 |
| Commission proposal | 340.00 | 177.00 | 50.00 | 17.00 | 85.00 | | | |

Sources: EEC Excise Duty Tables; OECD, Revenue Statistics of OECD Member Countries, 1966-1987, (Paris, 1988).

1/ Rates as of April 1, 1987.
2/ Data for 1985 for Italy, 1986 for all other countries.
3/ Petroleum or petroleum products.
4/ Flammable liquids.
5/ Oils.
6/ Hydrocarbon oil.

Table 12. European Community: Revenue from Excise Duties Other Than Those on Alcoholic Beverages, Tobacco, and Mineral Oils, 1986

| | Motor Vehicle | Heating and/or Electricity | Coffee | Cotton | All Other Excises: percent of excises | All Other Excises: percent of tax revenue | All Other Excises: percent of GDP |
|---|---|---|---|---|---|---|---|
| | | (As percent of excises) | | | | | |
| Belgium | | | 0.7 | | 3.87 | 0.18 | 0.08 |
| Denmark | 28.6 | 7.3 | 0.5 | | 47.79 | 6.58 | 3.33 |
| France | | 5.0 | | | 15.34 | 0.99 | 0.44 |
| Germany, Fed. Rep. of | | | 3.4 | | 4.42 | 0.29 | 0.11 |
| Greece | | | | 20.8 | 22.07 | 4.18 | 1.53 |
| Ireland | 11.3 | | | | 13.24 | 2.44 | 0.98 |
| Italy 1/ | | 3.8 | 0.7 | | 12.94 | 0.65 | 0.26 |
| Netherlands | 22.4 | | | | 27.19 | 1.51 | 0.69 |
| Portugal | 9.3 | | 0.2 | | 12.06 | 2.15 | 0.70 |
| Spain | | | | | -- | -- | -- |
| United Kingdom | 5.3 | | | | 8.42 | 1.01 | 0.39 |

Source: OECD, Revenue Statistics of OECD Member Countries, 1966-1987 (Paris, 1988).

1/ Data for 1985.

Table 13. United States: State Sales Taxes, 1988

(In percent)

| Region and State | Share of General Sales Tax Revenue in General State Revenue | Statutory Tax Rate 1/ |
|---|---|---|
| United States 2/ | 19.0 | |
| New England | 16.7 | |
| Connecticut | 25.5 | 7.5 |
| Maine | 18.8 | 5.0 |
| Massachusetts | 14.3 | 5.0 |
| New Hampshire | -- | -- |
| Rhode Island | 14.9 | 6.0 |
| Vermont | 9.4 | 4.0 |
| Mideast | 14.3 | |
| Delaware | -- | -- |
| Maryland | 15.3 | 5.0 |
| New Jersey | 18.0 | 6.0 |
| New York | 11.6 | 4.0 |
| Pennsylvania | 18.1 | 6.0 |
| Great Lakes | 19.8 | |
| Illinois | 20.7 | 5.0 |
| Indiana | 28.4 | 5.0 |
| Michigan | 16.2 | 4.0 |
| Ohio | 20.0 | 5.0 |
| Wisconsin | 17.5 | 5.0 |
| Plains | 18.6 | |
| Iowa | 17.7 | 4.0 |
| Kansas | 17.3 | 4.0 |
| Minnesota | 16.8 | 6.0 |
| Missouri | 24.3 | 4.2 |
| Nebraska | 16.2 | 4.0 |
| North Dakota | 12.8 | 5.0 |
| South Dakota | 19.2 | 4.0 |
| Southeast | 22.4 | |
| Alabama | 14.7 | 4.0 |
| Arkansas | 22.0 | 4.0 |
| Florida | 37.7 | 5.0 |
| Georgia | 20.4 | 3.0 |
| Kentucky | 15.4 | 5.0 |
| Louisiana | 16.1 | 4.0 |
| Mississippi | 28.7 | 6.0 |
| North Carolina | 15.5 | 3.0 |
| South Carolina | 22.6 | 5.0 |
| Tennessee | 31.7 | 5.5 |
| Virginia | 12.1 | 3.5 |
| West Virginia | 25.6 | 6.0 |
| Southwest | 21.5 | |
| Arizona | 31.7 | 5.0 |
| New Mexico | 18.5 | 4.75 |
| Oklahoma | 13.0 | 4.0 |
| Texas | 21.7 | 6.0 |
| Rocky Mountain | 14.7 | |
| Colorado | 16.2 | 3.0 |
| Idaho | 18.5 | 5.0 |
| Montana | -- | -- |
| Utah | 20.5 | 5.1 |
| Wyoming | 10.6 | 3.0 |
| Far West 3/ | 21.9 | |
| California | 20.7 | 4.75 |
| Nevada | 32.2 | 5.75 |
| Oregon | -- | -- |
| Washington | 38.9 | 6.5 |
| Alaska | -- | -- |
| Hawaii | 30.7 | 4.0 |

Source: Advisory Commission on Intergovernmental Relations, Significant Features of Fiscal Federalism (Washington, D.C., June 1989).

1/ Excluding local taxes.
2/ Excluding Washington, D.C.
3/ Excluding Alaska and Hawaii.

Table 14. Canada: Provincial Retail Sales Tax Rates, 1988

(In percent)

| | 1988 |
|---|---|
| British Columbia | 6 |
| Alberta | -- |
| Saskatchewan | 7 |
| Manitoba | 7 |
| Ontario | 7 1/ |
| Quebec | 9 |
| New Brunswick | 11 |
| Prince Edward Island | 10 |
| Nova Scotia | 10 |
| Newfoundland | 12 |
| Yukon | -- |
| Northwest Territories | -- |

Source: Harold Chmara and Andrew James, The Canadian Tax Handbook 1988-89 (Carswell, Toronto, 1989).

1/ 8 percent starting May 2.

Table 15. European Community: Share of the Cost of Border Formalities Borne by Firms in the Value of Bilateral Trade Flows, 1987

(In percent of costs)

| Exporter | Importer | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Belgium | Denmark | France | Italy | Netherlands | United Kingdom | Other member countries | EUR12 |
| Belgium | -- | 0.84 | 1.21 | 1.42 | 0.94 | 0.84 | 1.01 | 1.02 |
| Denmark | 1.45 | -- | 2.10 | 2.17 | 1.82 | 1.67 | 1.85 | 1.87 |
| France | 1.64 | 1.72 | -- | 2.25 | 1.84 | 1.72 | 1.69 | 1.83 |
| Italy | 1.76 | 2.25 | 2.30 | -- | 1.95 | 1.83 | 1.80 | 2.11 |
| Netherlands | 1.05 | 1.22 | 1.40 | 1.59 | -- | 1.27 | 1.35 | 1.26 |
| United Kingdom | 1.87 | 1.20 | 1.55 | 1.91 | 1.33 | -- | 1.76 | 1.54 |
| Other member countries | 1.49 | 2.02 | 2.10 | 2.14 | 1.73 | 1.79 | 1.82 | 1.93 |
| EUR12 | 1.46 | 1.53 | 1.84 | 2.04 | 1.55 | 1.58 | 1.71 | 1.67 |

Source: Catinat, Donni, and Italianer (1988).

Table 16. United Kingdom: Estimate of Expenditure Response to Commodity Tax Harmonization 1/

| Commodity Group | Price | Volume |
|---|---|---|
| | (In percentage changes) | |
| Food | 2.87 | -2.89 |
| Fuel | 4.00 | -11.70 |
| Clothing | 3.10 | -4.43 |
| Transport | 3.50 | -4.05 |
| Services | -- 2/ | -0.46 2/ |
| Beer | -16.30 | 23.14 |
| Wine | -26.70 | 49.05 |
| Spirits | -29.40 | 112.00 |
| Other 3/ | 1.30 | 2.70 |

Source: Symons and Walker (1989).

1/ Relative to actual tax system in 1987, assuming that after harmonization the standard VAT rate is 15 percent (same as the current standard rate) and the reduced VAT rate 4 percent (presently, most of the goods in the reduced rate band are zero rated).

2/ Since model allows for income effects and cross-substitution effects, spending on services, for example, can change even though its tax rate is not affected.

3/ Excluding tobacco, housing, and durables. The demand for these commodities was assumed to remain constant.

Table 17. Italy: Estimate of Expenditure Response to Commodity Tax Harmonization 1/

| Commodity Group | Price | Volume |
|---|---|---|
| | (In percentage changes) | |
| Food products | -0.07 | 1.98 |
| Beverages | 34.98 | -6.72 |
| Tobacco | 22.82 | -1.64 |
| Clothing | 8.35 | -1.12 |
| Health expenditures | -0.05 | 1.77 |
| Transportation services | -5.00 | 1.32 |
| Recreation | -5.07 | -1.31 |
| Hotels and restaurants | 5.46 | -0.30 |
| Other | 4.30 | -1.47 |

Source: Milana (1989).

1/ Relative to the actual tax system in 1987, assuming that after harmonization the standard VAT rate is 20 percent and the reduced VAT rate 5 percent. At present, the standard rate is 18 percent while there are two reduced rates (of 2 percent and 9 percent) and an increased rate (of 38 percent).

Table 18. France: Estimate of Expenditure Response to Commodity Tax Harmonization 1/

| Commodity Group | A. Standard VAT Rate = 19% Reduced VAT Rate = 9% | | B. Standard VAT Rate = 17% Reduced VAT Rate = 7% | |
|---|---|---|---|---|
| | Price | Volume | Price | Volume |
| | (In percentage changes) | | | |
| Food products | 3.5 | -1 | 1.5 | -1/2 |
| Alcoholic beverages | 10 | -6 | 10 | -6 |
| Tobacco | 20 | -4 | 18 | -3 1/2 |
| Heating, home, energy | -10 | 3 | -12 | 4 |
| Car expenses | -6 | 4 | -8 | 5 |
| Petrol | -10 | 2 | -10 | 2 |
| Electronic appliances | -14 | 6 | -16 | 6.5 |
| Total | -0.1 | 0 | -0.7 | 0.2 |

Source: Darmon and L'Hardy (1989).

1/ Relative to actual tax system in 1987. At present, the standard rate is 18.6 percent while there are several reduced rates (see Table 7) and an increased rate (of 28 percent).

Table 19. Federal Republic of Germany: Estimate of Expenditure Response to Excise Harmonization 1/

| | Price | Volume |
|---|---|---|
| | (In percentage changes) | |
| Petrol (leaded) | 22.91 | -5 |
| Diesel | -0.32 | 3 |
| Cigarettes | 13.40 | -10 |
| Beer | 14.78 | -8 |
| Wine | 5.73 | -3 |
| Spirits | 1.81 | 0 |

Source: Seidel (1988).

1/ Relative to excise duties in effect in 1987.

Table 20. Belgium: Estimate of Expenditure Response to Commodity Tax Harmonization 1/

| | Price | Volume |
|---|---|---|
| | (In percentage changes) | |
| Food, tobacco, drinks | 0.71 | -0.83 |
| Clothing and footwear | 0.24 | 0.34 |
| Housing | 0.19 | -0.04 |
| Heating | -4.54 | 2.03 |
| Lighting | -7.88 | 3.35 |
| Domestic services | 0.21 | 0.01 |
| Furniture | 1.83 | -1.71 |
| Cars | -4.50 | 4.08 |
| Car services | 9.49 | -6.66 |
| Transportation | -3.80 | 0.77 |
| Communication | -0.07 | -4.29 |
| Medical services | -0.08 | -0.14 |
| Entertainment | 1.90 | 1.39 |
| Other | 0.17 | -0.07 |

Source: Gouzee et al. (1988).

1/ Effects five years after implementing Commission proposals, relative to actual tax system in 1987. Assuming a standard VAT rate of 19 percent (same as the current standard rate) and a reduced VAT rate of 6 percent (as compared with the present three reduced rates of 1 percent, 6 percent, and 7 percent, and two increased rates of 25 percent and 33 percent).

Table 21. Selected EC Member Countries:
Revenue Effects of Commodity Tax Harmonization, 1986

(In percent of GDP)

| Country | Change in Government Revenue | | | Source |
|---|---|---|---|---|
| | VAT | Excise | VAT and excises | |
| Belgium | n.a. | n.a. | 0.3 | Lee et al. (1998) 1/ |
| | | | | Gouzee et a. (1988)/ |
| | -0.3 | 0.8 | 0.5 | CEPS (1989) 2/ |
| Denmark | n.a. | n.a. | -3.8 | Lee et al. (1988) 1/ |
| | -3.0 | -3.2 | -6.2 | Danish Ministry of Finance (1989) 3/ |
| | -2.9 | -0.9 | -3.8 | CEPS (1989) 3/ |
| France | n.a. | n.a. | -0.7 | Lee et al. (1988) 1/ |
| | -0.3/-0.6 | -0.01 | -0.3/-0.6 | CEPS (1989) 4/ |
| Germany, Fed. Rep. of | n.a. | n.a. | 0.5 | Lee et al. (1988) 1/ |
| | -0.2 | 0.4 | 0.2 | CEPS (1989) 5/ |
| Ireland | n.a. | n.a. | -2.6 | Lee et al. (1988) 1/ |
| | n.a. | n.a. | -2.9 | CEPS (1989) 6/ |
| Italy | n.a. | n.a. | -0.7 | Lee et al. (1988) 1/ |
| | 0.8 | -0.6 | 0.2 | Bollino et al. (1988) 7/ |
| | 1.0 | -0.5 | 0.5 | CEPS (1989) 7/ |
| Netherlands | n.a. | n.a. | 0.6 | Lee et al. (1988) 1/ |
| | -0.2 | 0.3 | 0.1 | CEPS (1989) 8/ |
| United Kingdom | n.a. | n.a. | 0.2/0.3 9/ | Lee et al. (1988) 1/ |
| | 0.9 | -0.6 | 0.3 | CEPS (1989) 10/ |

1/ Assumes VAT standard rate of 15 percent and reduced rate of 4 percent.
2/ Assumes VAT standard rate of 19 percent and reduced rate of 6 percent.
3/ Assumes VAT standard rate of 20 percent and reduced rate of 9 percent.
4/ No change in standard VAT or reduced rates; abolition of increased rate. The first estimate involves VAT harmonization excluding automobiles, heating, and lighting products; the second estimate assumes total harmonization.
5/ No change in VAT rates.
6/ Assumes VAT standard rate of 20 percent, reduced rate of 9 percent, and abolition of zero rate.
7/ Assumes VAT standard rate of 20 percent and reduced rate of 5 percent.
8/ No change in VAT rates.
9/ The first estimate assumes unchanged expenditure; the second estimate allows for tax induced expenditure changes.
10/ No change in standard VAT rate; reduced rate of 4 percent and abolition of zero rate.

Table 22. European Community: Macroeconomic Effects of VAT Harmonization, 1986

(Percent deviation from baseline)

| | Price Level (GDP Deflator) | | Nominal Wages | | Real GDP | | Real Private Consumption | | Unemployment Rate 1/ | | Current Account Balance 2/ | | Budget Deficit 2/ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 year | 5 years | 1 year | 5 years | 1 year | 5 years | 1 year | 5 years | 1 year | 5 years | 1 year | 5 years | 1 year | 5 years |
| Belgium | -0.1 | -0.1 | -- | -- | 0.1 | 0.1 | -- | -- | -- | -0.1 | -- | -- | -- | -- |
| Denmark | -5.1 | -7.2 | -3.4 | -6.5 | 1.1 | 4.0 | 1.4 | 3.8 | -0.2 | -1.2 | -0.3 | -0.3 | -2.5 | -1.1 |
| France | -0.6 | 0.8 | -0.2 | 1.2 | 0.1 | 1.1 | 0.2 | 0.8 | -0.1 | -0.5 | -- | -0.6 | -0.6 | -1.1 |
| Germany | 0.1 | 0.1 | -- | -- | -- | -- | -- | -- | -- | 0.1 | -- | -- | -- | -0.1 |
| Ireland | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Italy | -- | 0.2 | -- | 0.2 | -- | -- | -- | -- | -- | -- | -- | -- | 0.1 | 0.1 |
| Netherlands | 0.3 | 0.3 | -- | -- | -0.1 | -0.2 | -0.1 | -0.2 | -- | 0.1 | -- | -- | 0.2 | -- |
| Portugal | -0.6 | -0.6 | -0.3 | -0.4 | 0.2 | 0.5 | 0.1 | 0.4 | -- | -0.2 | -- | -- | -0.2 | -- |
| Spain | 0.1 | 0.1 | -- | -- | -- | -0.1 | -0.1 | -0.1 | -- | -- | -- | -- | -- | -- |
| United Kingdom | 0.4 | -0.5 | 0.2 | -0.9 | -0.3 | -- | -0.3 | -0.3 | 0.2 | 0.3 | 0.1 | -- | 0.2 | 0.3 |

Source: Commission of the European Communities (1987j).

1/ Percent of labor force.
2/ Percent of GDP.

Table 23. Selected EC Member Countries: Macroeconomic Effects of Commodity Tax Harmonization

(Percent deviation from baseline)

| | Prices | | GDP (Real) | | Private Consumption (Real) | | Unemployment Rate (Percent of Labor Force) | | External Balance (Percent of GDP) 1/ | | Budget Deficit (Percent of GDP) 2/ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 year | 4 years | 1 year | 4 years | 1 year | 4 years | 1 year | 4 years | 1 year | 4 years | 1 year | 4 years |
| Belgium | | | | | | | | | | | | |
| VAT | -0.5 | -0.8 | 0.3 | 0.3 | 0.4 | 0.4 | -0.1 | -0.1 | -0.1 | -- | -0.2 | -0.2 |
| Excises | 0.9 | 1.0 | -0.4 | -0.3 | -0.7 | -0.5 | 0.2 | 0.1 | 0.1 | 0.1 | 0.4 | 0.4 |
| Total | 0.4 | 0.2 | -0.2 | -0.1 | -0.3 | -0.1 | -0.1 | -- | 0.1 | 0.1 | 0.2 | 0.2 |
| France | | | | | | | | | | | | |
| VAT | 0.1 | 0.4 | 0.1 | -0.2 | 0.4 | -0.2 | ... | ... | -0.1 | 0.1 | -0.1 | 0.1 |
| Italy | | | | | | | | | | | | |
| VAT | 3.1 | -0.1 | -0.4 | 0.4 | -0.8 | 0.1 | ... | ... | ... | ... | -0.6 | -0.6 |
| Excises | -0.3 | 0.1 | 0.1 | -0.1 | 0.3 | -- | ... | ... | -- | -- | 0.9 | 0.5 |
| Total | 3.0 | -- | -0.3 | 0.3 | -0.5 | 0.1 | ... | ... | ... | ... | 0.3 | -0.1 |
| Ireland | | | | | | | | | | | | |
| Total | -0.3 | 0.2 3/ | 0.4 | 0.2 3/ | 0.7 | -- 3/ | -1.1 | -1.5 3/ | -0.2 | 0.1 3/ | -0.2 | 0.1 3/ |
| United Kingdom | | | | | | | | | | | | |
| VAT | 0.7 | 1.1 | -0.3 | -0.4 | -0.6 | -0.4 | 0.1 | 0.3 | 0.6 | 0.5 | -- | -0.1 |

Sources: Belgium, Gouzee et al. (1988); France, Bloch and Maurel (1989); Italy, Bollino et al. (1988); and Ireland, Bradley and Fitzgerald (1989); and United Kingdom, van der Putten (1987).

1/ Manufacturing trade balance for France; balance of payments for Ireland and the United Kingdom; and current account balance for Belgium.
2/ Net government indebtedness (percent of GDP) for Italy; exchequer borrowing (percent of GDP) for Ireland.
3/ Two years rather than four years following harmonization for Ireland.

APPENDIX I

## Corporate Tax Systems in the U.S. and Canada

### 1. The United States

The United States has a corporate tax system of the classical type. States do not face many limitations on their taxing authority and 45 states levy their own corporate taxes. Unlike the Canadian provinces (see below), U.S. states have never entered into a tax collection agreement with the federal government, mainly because of the loss of fiscal sovereignty it would entail.

In the early part of the century, states relied on separate accounting to determine their taxable profit share of corporations operating in several states. However, the rising number of integrated businesses made separate accounting increasingly difficult to apply and in the early 1960s all states adopted some form of presumptive apportionment formula to eliminate incentives facing corporations to use accounting devices to shift profits to low tax states. The apportionment formulas differ between states thereby introducing the possibility of double taxation. 1/

The U.S. Multi-State Tax Commission, which was established in 1967, facilitates tax cooperation among its 21 member states. It encourages states to participate in joint audits and to adopt uniform rules for allocating taxable income and for determining whether a company is taxable in a given state (the so-called nexus rules). Although these efforts have not always been successful, most states have moved toward the so-called three factor formula, which assigns equal weight to payroll, property, and sales.

Formula apportionment is typically implemented on a case-by-case basis while most states adhere in principle to separate accounting to determine the income of individual corporations. However, several states have adopted a unitary approach to taxing corporations. 2/ Some states, including California, have attempted to extend unitary taxation

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1/ The courts have generally upheld the states' rights to define their own formulas even when it leads to double taxation. Some states have designed their formulas so as to favor in-state firms and stimulate employment by relying more heavily on the local sales factor (that is, on destination elements). Iowa, for example, includes only local sales in its formula, thus discriminating in favor of local manufacturing but selling mostly out-of-state.

2/ Under this approach, states require corporations to aggregate profits of all affiliated firms engaged in a "unitary business." States then determine their share of the combined taxable income of the group of firms on the basis of formula apportionment.

to foreign affiliates, beyond the "water's edge"--i.e., including foreign parents of U.S. subsidiaries and their foreign subsidiaries. While domestic unitary taxation has been accepted, foreign governments and multinational firms have successfully resisted global unitary taxation.

Statutory tax rates diverge among states, ranging between zero and twelve percent, although the deductibility of state taxes for federal income tax purposes reduces the effective interstate differential. According to some observers, market forces have helped to harmonize state rates. 1/ Apart from minor differences, states conform to the federal definition of taxable income because they lack the administrative resources to enforce a different definition of the tax base. However, when the central government narrowed the federal corporate income tax base in 1981 by adopting generous depreciation allowances, many states continued to apply their own less generous depreciation provisions in order to prevent a significant loss in state revenue. Most states now again adopt federal provisions defining the tax base following the 1986 tax reform, which reduced depreciation allowances and broadened the federal tax base.

2. Canada

The Canadian corporate tax system is characterized by a high degree of uniformity among provinces with respect to the tax base. 2/ In part this reflects the fact that most provinces have opted for their corporate income tax to be administered by the federal government, but even the three provinces that maintain an independent tax system (Ontario, Quebec and Alberta) do not deviate markedly from the federal tax base. The provincial tax is levied following the source principle, with the territorial base defined by a common apportionment formula based on sales and payroll weighted equally. 3/ The nexus rules are also basically uniform across provinces. In particular, a business is liable to provincial income tax if it has a permanent establishment in the jurisdiction. 4/

The uniform allocation and nexus rules prevent the shifting of accounting profits and double taxation and reduce the compliance costs

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1/ See Bird (1987).

2/ In contrast to the U.S. corporate tax system, the Canadian corporate income tax is partially integrated with the personal income tax.

3/ Ontario and Quebec accepted this formula in the mid-1950s and 1961, respectively. It includes payroll because using only gross receipts would assign an excessive profit share to the location of the head office. Special rules apply to companies in the financial, insurance, and transportation industries.

4/ All provinces essentially conform to the same definitions of permanent establishment although Ontario and Quebec deviate slightly from the definition applied by other provinces.

of companies. Despite the uniformity of corporate taxes levied by provinces, several observes have raised concerns about the possibility that Canadian provinces would withdraw from the federal tax collection agreement and would issue their own tax regulations. 1/

There are relatively small tax rate differentials, with the top rates in 1988 ranging from 14 to 17 percent. The federal government provides a tax credit for 10 percent for provincial corporate taxes, hence only the excess over 10 percent represents additional taxation. Following the federal practice, provinces provide reduced rates for small corporations, with rates in 1988 varying between 3.2 percent and 10 percent.

1/ See, e.g., McLure (1983).

APPENDIX II

## The Net Budgetary Effect of a Withholding Tax on the Interest from Government Bonds

Consider a simple model, where only the interest from public bonds is subject to the tax, and where investors can be classified in three broad categories: (1) tax-exempt (institutional) investors; (2) individual (tax-evading) investors who are taxed only at source and for whom the withholding tax, at a rate of $t_2$, constitutes a final tax; (3) individual and other (tax-paying) investors who report all income, are taxed on the residence principle, at a rate of $t_3$, and for whom the withholding tax on domestic assets does not constitute an additional tax burden.

Define the demand for public bonds by type i investors as $B_i$, and let B be the outstanding stock of bonds. From the asset market equilibrium condition $B = B_1 + B_2 + B_3$, we can derive:

$$dr/dt_2 = B_2' \; r \; / \; [B_1' + B_2'(1-t_2) + B_3'(1-t_3)] \qquad (1)$$

where r is the domestic interest rate, $B_i'$ is the derivative of investor i's demand for bonds with respect to the domestic interest rate.

Let S be the net interest expenditure of the government, defined to include tax revenues from interest earnings, or:

$$S = r \; (B - t_2 \; B_3 - t_2 \; B_2) \qquad (2)$$

Solving for $dS/dt_2$, we obtain the following condition:

$$dS/dt_2 > 0 \text{ if } [b_1 \; (1 - e_1/e_2) + b_3 \; (1 - e_3/e_2 - t_3)] > 0 \qquad (3)$$

where $b^i$ is the share of bonds held by type i investors, $e_i$ is the interest elasticity of bond demand of type i investor. 1/

Under the assumption that type 2 and type 3 investors have the same elasticity of demand, condition (3) reduces to:

$$dS/dt_2 > 0 \text{ if } [b_1 \; (1 - e_1/e_2) - b_3 \; t_3] > 0 \qquad (4)$$

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1/ $e_i = B_i' \; r \; (1 - t_i) \; / \; B_i$.

Condition (4) states that the net interest cost of the introduction of a withholding tax will be negative if the induced interest rate effect outweighs the tax revenue effect, which can occur if: (i) there is a large share of type 1 (tax exempt) investors, and such investors have a sufficiently low interest elasticity of demand relative to other investors; (ii) there is a low share of type 3 investors (taxed on their global income) and the tax rate applicable to them is sufficiently low.

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