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WHY DID ALL BUT TWO OECD  
COUNTRIES INITIATE TAX  
REFORM FROM 1986 TO 1990?

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Abstract

This paper examines the role that economic and political factors played in tax reform in OECD countries from 1986 to 1990. Some writers argue that economic integration forced states to reform their tax systems. We examine this argument and consider the relevance of other possible factors, such as inflation and growth rates, the partisanship of the government, and the number of "veto players" in accounting for changes in the statutory corporate and top income tax rate.

Our findings indicate that capital in particular was quite mobile by 1986, at least mobile enough so that governments were forced to respond to the initial tax cut in the United States. At the same time, a government's ability to respond to these pressures depended critically on the number of institutional players which were required to approve any change in policy. Even when one of the respective players in the domestic arena presumably wanted to move forward with significant cuts in marginal tax rates, in cases where it had to win approval for its proposal from other veto players it had to make compromises which inevitably reduced the reform's scope. This analysis has some interesting implications for the dynamics of tax competition. Several scholars worry that unfettered competition among states will drive taxes on capital and mobile labor down to zero. States with more veto players may find themselves unable, at least in the short run, to retaliate against cuts in other places with a 'defection' of their own.

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## I. Introduction

In the late 1980's a wave of apparent tax reform swept the industrialized world. The most visible changes concerned income taxes--beginning with the Tax Reform Act of 1986 in the United States, every OECD country but Switzerland and Turkey lowered its top marginal rate on personal income tax between 1986 and 1991. Many states reduced their corporate tax rates during this time as well, and they often accompanied these moves with efforts to expand their tax bases and to end many common tax loopholes. The timing of the reforms was particularly notable, since there were few significant tax reforms that affected either the personal or the corporate income tax from 1965 to 1985 (Owens 1994).

One common explanation for the near simultaneity of these changes is that economic integration forced governments to reform their tax systems in response to cuts in rates in other states (Lee and McKenzie 1989, Steinmo 1993). Capital in particular was supposed to have become more mobile, and investors placed their funds wherever they could receive the highest after-tax return. Once a given state reduced its tax burden, others faced the prospect of losing resources to the tax-cutting state if they did not also reduce their tax burdens. This "tax competition" among the countries forced downward tax rates on mobile factors such as capital. In a broader framework, tax reform was viewed as just one part of a general change in the formation of economic policy. States could no longer set economic policies without considering both how their decisions affected others and how the decisions of others affected them, and economic policies across nations as a consequence began to converge (Andrews 1994; Moses 1994).

This argument is at best only a partial explanation for the tax reforms. Greater internationalization is expected to force a downward convergence of tax rates. As the empirical section of this paper will show, the spread of corporate income tax rates did narrow somewhat during the second half of the 1980's, which appears to confirm somewhat the convergence prediction. However, a wide gap between the highest marginal rate in 1990 (Germany at 50%) and the lowest (Canada at 25%) continued to persist. The predicted convergence of rates did not occur at all with the top income tax rate, where the spread of top rates stayed roughly the same. One could argue that high-income labor was not as mobile as capital and that income taxes therefore did not face the same pressure to

converge, but this line of reasoning then begs the question--why did the states that changed their rates all lower their top income tax rates during this time period in the first place?

What is absent from the standard account about economic integration, and what may account for the variation across countries in their zeal to adjust their tax systems, are political explanations, such as the partisan orientation of the government or the institutional structure of the state. Few studies consider the role that both political and economic factors might have played in the pace and shape of tax reform in a comparative manner. This absence is somewhat surprising given the wealth of studies which seek to explain the growth of the welfare state in OECD countries. Several authors investigate a possible relationship between left control of government and increases in the size of the public sector (Cameron 1978; Castles 1982; Hicks and Swank 1992; Blais, Blake, and Dion 1993 and 1996), but we know of only one equivalent sort of statistical study, Garrett (1995), which examines changes in tax systems.

In fact, Garrett's study is notable because it contradicts the conventional wisdom on the effects of greater internationalization on capital taxes (see also Garrett and Lange 1995 for a more theoretical treatment). He considers both the effects of partisanship and capital mobility on taxes on capital, and he concludes that "the impact of increasing trade and capital mobility was to *increase* capital taxation" (675, emphasis added). However, Garrett does qualify his statement when he adds that, consistent with the standard view, open economy states with left-wing governments and strong labor movements are more likely to lower capital taxation.<sup>1</sup> His findings deserve further scrutiny: is greater capital mobility generally associated with higher capital taxation? A second reason to reexamine Garrett's study is that he codes "capital taxation" in a controversial manner--he combines corporate income tax collections with employers' social security contributions. Many economists believe that employees rather than employers ultimately bear the burden of social security contributions. His measure of "capital taxation" therefore may not be completely accurate.<sup>2</sup>

<sup>1</sup> More generally, Garrett insists that, while internationalization has limited to some extent the policy options available to the left, the "conventional wisdom" that states must adopt the prescriptions of neoclassical economics is "too simple and considerably overdrawn" (682).

<sup>2</sup> As Joseph Stiglitz writes in his textbook on public finance, "According to the law, half the [social security] tax is paid by employees and half by their employers; but most economists believe that this is simply a legal fiction. The consequences of the tax are *essentially the same* as they would be if the individual were responsible for paying all of it." Stiglitz (1988), pp. 326-27; italics in the original text.

This paper considers both economic and political explanations for the level of tax reform in most OECD countries from 1986 to 1990.<sup>3</sup> In the first section we contrast the most plausible explanations for the changes in tax policy and compare different approaches of measuring the extent of tax reform. We concentrate on changes for just two rates--the top personal income tax rate and the corporate income tax rate. These two rates presumably fall on the most mobile part of labor and on generally mobile capital respectively, and if economic integration had any effect on tax policy we would expect to measure changes in these rates. In the empirical section we examine the effectiveness of the political and economic explanations in a cross-sectional analysis of the data.

We find that economic openness had, at best, an indirect effect on the level of change in marginal tax rates. States which experienced low real economic growth during the period were also the most likely to initiate significant reform. Yet the institutional structure of a country was important as well--countries which had only one "veto player," or only one institution or party whose approval was necessary for a bill to become law, enacted more sweeping reform than states which had more than one veto player. These results suggest that, even when international or domestic economic factors might dictate a change in policy, reform will not be as sweeping in countries where agreement among several institutions and/or parties is necessary. Traditional treatments of tax competition which assume that states respond immediately and without cost to reductions of tax rates in other states should therefore be qualified. The full harmonization of rates downward under complete capital mobility may take a considerable amount time, if it happens at all, and in the short-term states with fewer veto players may be able to take advantage of states with many veto players which cannot as effortlessly lower their tax rates.

#### *Measurements of Tax Reform*

There are many ways to measure tax reform. One of the most common methods is to examine the highest marginal tax rate, and we follow this tradition here. We recognize that the use of changes in statutory rates has significant limitations. It does not pick up differences in loopholes, for instance, and the total tax burden could potentially be low in a state with a comparatively high statutory rate. Another potential problem with using top

<sup>3</sup> Due to data restrictions Iceland, Greece, Luxembourg, and Turkey are left out of the sample.

tax rates is that few citizens may actually qualify for the high rate. This pitfall is especially relevant for the personal income tax, where states sometimes use literally dozens of different tax brackets, each with its own marginal rate. Finally, it is effective rates, rather than statutory rates, which have the greatest impact on foreign direct investment. Mercedes decided to locate a production plant in Alabama because the different incentives, loans, etc., amounted to a negative effective tax rate.

Yet statutory rates still have their uses. A central goal of this paper is to examine as closely as possible the effects of factor mobility on tax policy. There are many reasons to expect that factor mobility may put pressure on states to lower their statutory tax rates. Take first the case of corporate income taxes. While effective rates have the most bearing on foreign direct investment, it is the statutory rates which impact the decision of where to locate taxable income. To the extent that states like to receive tax revenue they will worry about statutory rates in other states. There are several reasons why statutory rates directly affect the location of taxable income. First, multinational firms have an incentive to (re)locate their costs in high-tax countries and to maximize the profits they report in low-tax countries. A firm may then be able to report a financial loss in the high-tax country and high profits in the low tax country. In high-tax Germany, for instance, BMW executives in particular have admitted publicly that they attempt to transfer costs to its German facilities as much as possible, and managers at other German firms such as BASF and Merck have referred to BMW as an example (Weichenrieder 1996, 38-39).

An additional factor that can affect the allocation of profits is the sales of products between branches of a company located in different countries. A firm may overprice products that its branches buy in high-tax countries to increase that firm's costs so that its tax liability is reduced. This practice, which is known as 'transfer pricing,' shifts the location of taxable income and imply a revenue loss for the high-tax country. As Sørensen points out, "the incentives for multi-nationals to engage in transfer pricing depends on statutory tax rate differentials rather than on differentials in effective tax rates," (Sørensen 1993, 364) and the implication is that states with high statutory rates will lose more and more revenue over time to the low-tax states. Tax competition just on statutory rates, as opposed to effective rates, is a possible result.

Firms can also alter their financial structures to take advantage of interest deductions in high tax countries, which is commonly referred to as 'thin capitalization.'

Instead of financing a subsidiary in a high-tax country with equity issues, the subsidiary borrows funds from the parent. The parent then receives interest payments instead of dividends, while the subsidiary is usually allowed to deduct the interest payments from its taxable income. Since statutory rates directly affect the level of interest deductions, a cut in the statutory rate reduces the incentive in a country to use such debt financing (Tanzi 1995, 100-101). It should be stressed that these methods firms use to shift the tax burden (relocation of costs, transfer pricing, and thin capitalization) all require little or no relocation of physical capital, so that one does not have to observe large changes in foreign direct investment in order for states to feel pressure to harmonize their statutory tax rates.

Statutory rates also can affect the credits a firm can receive in its home country from profits earned abroad. Most OECD states provide credits for taxes paid abroad, but the refund cannot exceed the level of taxes the firm would have been required to pay at home.<sup>4</sup> A cut in the home tax rate therefore can discourage further investment abroad because foreign investments continue to bear the foreign tax rate. The tax reform in the United States in 1986 may have been particularly important in this respect. Even though it had become a net debtor country by the time period under consideration here, Americans continued to invest heavily in many markets, with private investment abroad equal to \$113.9 billion in 1986 (Bovenberg et. al. 1990, 285). When the tax rate declined in the United States, the possible tax credits for foreign profits declined as well, and the net rate of return for foreign investments in states that had higher tax rates than the United States would therefore have been reduced. Ault and Bradford (1990, 38) indicate, for example, that "Canadian tax policy analysts...regard the Canadian corporate tax primarily as an instrument for absorbing the U.S. tax credit." As this tax credit becomes smaller due to cuts in marginal rates, states will be under pressure to cut their marginal rates.

The top statutory income tax rate is equally relevant. One would expect that high-income individuals who fall under the top marginal income tax rate are more likely to be mobile internationally than lower paid labor, and the top rate should therefore be most sensitive to any increasing economic openness in OECD countries (Tanzi 1995, 10, 36). The top personal rate also represents the most likely bracket in which unincorporated businesses found themselves, and its consideration insures that many businesses not

<sup>4</sup> Italy is a notable exception which allows a full reduction of foreign-paid tax (Frenkel, Razin, and Sadka 1991, 23).

covered by the corporate income tax are not excluded from this study. As the Ruding Committee, which the European Commission charged with formulating future tax policy, concluded in 1992, "the taxation of unincorporated business can be complicated, but a not unreasonable simplification is to suggest that if a business is unincorporated, the marginal rate of tax paid on any increased earnings is often the top statutory personal tax rate (p. 156)."

Changes in the top income rate also can have great political significance. One of the most visible attributes of a state's tax system is the top rate it levies on its wealthier citizens. There is evidence that politicians themselves compare their top marginal rates with the marginal rates of others. In a study of tax competition in the American states, Tannenwald (1991) indicates that "many policymakers believe they must keep their highest marginal personal tax rates 'in line' with those of rival states to compete for employers and skilled labor" (quoted in Tanzi 1995, 33). For all of these reasons, therefore, one would expect some level of tax competition on statutory tax rates.

Alternative measurements of tax policy are less appealing for the purposes of this study. Effective rates, as opposed to statutory rates, would be useful because they have a real impact on the investment decisions of firms. The state of the art in measuring effective rates comes from Fullerton and King (1984), which has been used by several authors and organizations to compare effective rates across countries (OECD 1991; Ruding Committee 1992; Jorgenson and Landau 1993). A problem with this method for the statistical results presented here is that the effective rate varies depending on the type of financing (debt, equity, and retained earnings), the type of asset (buildings, machinery, and inventories), and the countries involved (the effective rate is likely different for a Japanese investing in Los Angeles than a Dutchman). While one can compute an average of the different rates, it is not clear that governments or businesses consider this average to be of any relevance in the decisions that they make. An additional concern is that the method is extremely sensitive to the prevailing interest and inflation rates in a given country, and the effective rates can therefore vary widely from year to year. As Tanzi (1995, 116) argues, "the empirical results obtained from the use of King and Fullerton's approach [have] a fragility that is worrisome. Different studies tend to report different results unless they are

carried out by the same individuals."<sup>5</sup> From a practical standpoint, statutory rates have the advantage that they are easily measured.

A second possible measurement would be corporate and income tax collections expressed as a proportion of GDP, which would be roughly similar to Garrett's (1995) variable for capital taxation. This variable is appealing because it indicates for the corporate tax in particular that firms are indeed paying taxes. If one is concerned that tax competition will force states to dismantle their welfare states because tax collections will drop to zero (Sinn 1990, 1992; Schjelderup 1993), evidence that tax collections have stayed the same or even increased is reassuring. Yet, unless one is at the extreme where no taxes are paid at all, this measure can be deceiving. An important factor that enters the corporate tax proportions both across and within states is the proportion of firms that are incorporated. More firms may be incorporating during a time period when average tax payments per firm are decreasing. Capital may also be used in different proportions across countries, so that changes in the tax collections may be due to exogenous factors which increase (or decrease) the use of capital in an incorporated form. Finally, it is unclear how to interpret changes in GDP ratios over the short-term. If the ratio drops, is that evidence of greater tax competition? Absolute differences among states in the ratios are also difficult to interpret. How does one explain that Luxembourg, which is a notorious tax haven within the Europe, also had the highest corporate income tax to GDP ratio at 8.2% in 1990 in the entire OECD (OECD 1992, 80)? A possible explanation, that the low rate in Luxembourg attracts so much capital that the country actually has higher collections of corporate tax than other states, makes a generalization to other states unclear—does an increase in collections represent greater success competing for capital in a fully integrated world or the lack of capital mobility altogether?

Given the difficulties with other possible measurements we choose to focus on the top personal and corporate income tax rates respectively. Table 2 summarizes the percentage change downward in the two rates for the countries that are in this study. Fourteen of the nineteen states lowered their marginal corporate rate, while all the countries but Switzerland cut their top rate under the personal income tax. The biggest reduction in the corporate rate occurred in Austria (45.5%), while one state, Ireland

<sup>5</sup> Devereux (1995) expresses similar misgivings.

actually increased its corporate rate slightly. In comparison, while the biggest reduction occurred in Sweden (60%) under the personal income tax, other countries such as the United States, Japan, Norway, and Britain reduced them notably as well. We find a strong relationship between a state's corporate income tax rate in 1986 and the degree to which it changed by 1990, indicated by a correlation coefficient of .68. This bi-variate result provides some evidence for the economic integration hypothesis, since the states with the highest marginal rates at the beginning of the period were also the most likely to make the deepest cuts. A similar story cannot be told (at least initially) for personal income taxes, where the correlation coefficient of .07 between the rate in 1986 and the extent of its change indicates almost no relationship.

[Table 1 About Here]

### III. Hypotheses for Tax Reform

#### 1) International Economic Explanations

##### *Capital Mobility*

Capital mobility may restrict the level of taxation a country can impose on individuals and firms in the following manner. In a world with complete capital immobility, capital is restricted to the domestic market and a national tax will affect rates of return on investments equally. Rates of return on capital will likely vary considerably across states. Moving to the other extreme where capital is perfectly mobile, any variance in returns to investment will induce capital to relocate to the state where it can earn the most income. The inflow of new capital will depress the rate of return in the capital importing country, while the reduction in the supply of capital in the exporting country will drive up the rate of return in that state. Capital will continue to relocate until returns equalize. One factor which affects the profitability of investments is the respective tax rate in a given country. If rates of return are equal in a capital-mobile world and a state cuts its capital tax rate, capital will move to the low tax state from the high tax states until rates are again equal. An alternative starting point is a world where capital is completely immobile. Tax rates will then probably vary widely. As capital becomes more mobile, however, it will take advantage of differences in these rates, and it will go wherever it can generate the most income.

States are not ignorant of these movements. As capital becomes more mobile, a high tax state may feel considerable pressure to lower its tax rate to prevent capital flight and the resulting decline in investment and tax revenue. States may also pro-actively cut their rates in the hope of attracting capital inflows. Others will likely retaliate with the reduction of their taxes, and the result is beggar-thy-neighbor policies (Tiebout 1956; Giovannini 1989)<sup>6</sup>. One therefore expects a downward convergence of tax rates.

There are therefore two possible ways that capital mobility may have affected tax rates from 1986 to 1990. First, capital may have become more mobile during the time period, which made states more vulnerable to capital flight than they were before. Tax rate differentials which were tenable when capital could not take advantage of them under a closed economy may no longer have been enforceable when a country became more open to the world economy. A second possibility is that capital was already somewhat mobile in 1986 and that there existed an equilibrium. This equilibrium changed when one country in particular, the United States, reduced its corporate tax rate relative to others (Wilkins 1990). The empirical questions that must be answered then are, first, did capital become more mobile during this period than before; and second, if capital did not become more mobile, did states respond differently to the American tax reform depending on the relative openness of their capital markets.

A comparison of three of the most frequently used measures of capital mobility, savings-investment correlations, covered interest rate differentials, and government restrictions on capital movements, indicates that there was no significant change in the level of mobility. One can therefore rule out the thesis that a sudden change in the level of capital mobility led to the wave of tax reforms in the late 1980's. This is an important finding, since, as will be illustrated shortly, the different measurements all imply different levels of capital mobility.

<sup>6</sup> This result assumes that income is assessed by the country where the income is generated (the source principle), which is generally the case for corporate profits (Tanzi 1995, 78). If one pays tax based on where one lives instead of where one receives the investment income (the residence principle), then in theory the differences in rates should not cause any movement of capital. An investor could then avoid paying a higher rate only by moving his tax residence, which, unless tax havens are easily accessible, is usually more difficult than moving capital. Due to bank secrecy laws, differences in depreciation allowances, deferrals of tax payments, transfer pricing, and other similar devices a pure residence principle does not now exist (Giovannini 1989, Tanzi 1995).

Feldstein and Horioka (1980) assume that, in a world with perfect capital mobility, savings and investment rates in a country should be uncorrelated.<sup>7</sup> Savings will flow to wherever they can receive the highest rate of return, and an increase in savings in a country would not result necessarily in any increase in domestic investment. They regress domestic investment rates on savings rates, and they presume that the beta coefficient for the savings rate should be approximately zero if there is complete capital mobility and one if capital is immobile. In their original study, which covered the period 1960-74 for sixteen OECD countries, they found a high coefficient of .887, which they interpreted as indicating very little capital mobility during this period. Feldstein and Bacchetta (1991) report an almost identical coefficient (.868) for the period 1974-86.

Obstfeld (1995, 239-240) updates these figures for the 1980's, and he concludes that over the long-run capital has become somewhat more mobile than it was previously, with a coefficient of .636.<sup>8</sup> The key question for our purposes, however, is whether capital became more mobile from 1986 to 1990 than from 1981 to 1985, which would have perhaps spurred the reduction in rates. Obstfeld indicates that, if anything, capital may have become more restricted--the coefficient was .567 in the earlier period as opposed to .636 in the later period. While he cautions that the difference of the two coefficients is not statistically significant, what is important for our purposes is that the figures indicate that it is unlikely capital became *more* mobile.

A second method for measuring capital mobility considers covered interest rate parities. If capital is truly mobile then loans made in the same currency in different countries should require the same rate of return; thus, D-Mark-dominated debt should have the identical interest rate in Frankfurt as in London.<sup>9</sup> According to this measure, capital markets were almost completely integrated during the time period considered here. Frankel (1993) notes that "a continuing worldwide trend of integration of financial markets in the 1980's had all but eliminated short-term interest rate differentials for major industrialized countries by 1988" (p. 49). Popper (1993) presents similar results for long-

<sup>7</sup> The literature on savings-investment correlations has become extensive. See Baxter and Crucini (1993), Frankel (1993), and Obstfeld (1995) for succinct reviews.

<sup>8</sup> He also expands the dataset to 22 OECD countries.

<sup>9</sup> The use of covered interest rate differentials, as opposed to uncovered interest rates, is important because it removes the currency risk factored into the interest rates. It is difficult to consider what investors considered to be the risk differential *ex ante* from data that is available only *ex post*. See Obstfeld (1995).

term rate differentials. According to this measurement, therefore, full financial integration has already occurred among industrialized countries, and there was no real change from 1986 to 1990.

The final measure of capital mobility considers government-imposed restrictions on capital movements. If their use decreased during this period, capital can be assumed to have faced fewer barriers to pursuing higher returns in non-domestic markets. Rose (1994) and Garrett (1995) have four variables: Capital Account Restrictions, Bilateral Payments with Members, Bilateral Payments with non-Members, and Deposit Restrictions.<sup>10</sup> In aggregate, little changed during the period. Only for capital account restrictions did measures vary across countries, and across time there was little variation at all, so that if a state started with capital account restrictions it usually maintained them. The only state which ended its capital controls was Denmark, which abolished capital account restrictions at the end of the 1980's. In contrast, Finland and Italy stand out in the sample as states which increased capital restrictions during the period.

The second empirical question is whether an initial change in rates in one country may have spurred a reduction of rates in other countries. Any satisfactory answer requires data on the level of capital mobility for each country during this period.<sup>11</sup> When comparing the three measurements of capital mobility, only one, the level of capital restrictions, provides the necessary data. Correlations between savings and investment for individual countries are unfortunately not reliable. Some authors (Feldstein 1983; Tesar 1991) have indeed provided time-series correlations for individual countries that could provide the basis for comparing capital mobility in certain time periods across countries. Yet, as others have pointed out, factors that have nothing to do with capital mobility may explain the statistical results. If global shocks to savings and investment are important in

<sup>10</sup> This is a dataset on capital controls from Andrew Rose, and it is cited and used in both Rose (1994) and Garrett (1995). Garrett indicates that Alesina, Grilli, and Milesi Ferretti (1994) and well as Eichengreen, Rose and Wyplosz (1994) have also used this data source. Rose computed the data set from IMF (various years), and we supplemented his work with the relevant IMF publications for countries he did not include in his analysis.

<sup>11</sup> Gross flows of capital across borders may also seem at first to be an appealing measure, since they would indicate that capital took advantage of differences in tax rates. Yet, while capital flight is an obvious indicator that investors responded to rate differentials, simply the threat of flight may have induced politicians to act. Large capital movements are therefore not a necessary condition for capital mobility to be present and important. Measurements of just capital flows can be extremely deceptive. Capital would not move at all even under perfect mobility if returns to investments were the same across countries; if one considered only flows, one would then conclude erroneously that, in a world where capital was perfectly mobile, there was no mobility at all.



addition to local shocks, correlations will shoot up regardless of the level of capital mobility. Even if capital is completely mobile but labor is immobile, "positive shocks to investment productivity can cause both investment and saving to rise" (Obstfeld 1995, 244). Simple correlations between output and investment may also lead to high savings-investment correlations in the presence of full capital mobility (Baxter and Crucini 1993). Even Feldstein (1994, 8), while stressing that his cross-sectional regressions are robust, admits that there are problems with the time series results.

Covered interest rate differentials are likewise problematic because they indicate almost no variation across countries. Capital, according to this measurement, was simply free to move across borders of industrialized countries. While a figure cannot be placed directly into regressions, this interpretation of the level of capital mobility is still important. It implies that a cut in the rate in one country should have spurred a quick reaction in other countries that feared losing capital to the new low-tax state. Capital rates therefore should have been driven downward regardless of the formal existence of some capital controls, and those controls should be insignificant in the regressions that follow. Additionally, evidence that states with higher initial tax rates made deeper cuts than states with lower initial tax rates would suggest that some tax competition existed under almost full capital mobility.

Therefore, one only variable that can be used in a regression analysis across countries is Rose's (1994) number of capital controls. States which had capital account restrictions included Austria, Denmark, France, Ireland, Italy, Norway, and Sweden. Finland was the only state that used any of the measures besides capital account restrictions, and it was consequently the most closed state as far as capital was concerned in the dataset. The correlation between capital controls and the change in rates indicates that the use of capital controls was not that important. While indicating that capital controls did reduce somewhat the level of change in the corporate income tax rate, the correlation coefficient of  $-.21$  suggests that the relationship was weak.

[Graph 1 About Here]

#### *Trade Dependence*

A second indicator of economic integration is trade dependence. Open economies may be more sensitive to changes in tax rates than their closed economy rivals. States like

the Netherlands presumably have a greater share of their gross domestic product, as well as their tax base, generated from multi-national firms than large countries like the United States. Open states may then respond more readily to changes in statutory tax rates made in other parts of the world, and we would expect a positive relationship between the openness of given country's economy and the change in the corporate income tax rate.

Along with the size of the country (considered below), trade dependence can also be considered a very rough proxy for labor mobility and hence have an effect on personal income tax rates as well. There are unfortunately no reliable measurements for the relative mobility of high skill labor across countries, and various indirect measures must instead be considered. We use trade dependence in the regressions that appear in the empirical section as an indication of the relative openness of an economy to the world market. Greater economic openness may increase the awareness of a high-income person of her net worth in other countries and of her ability more generally to take advantage of different tax rates.

It is also possible, of course, that the relationship between the openness of the economy and the cut in tax rates is negative instead of positive. Cameron (1978) and Katzenstein (1985) both indicate that the level of state involvement in the economy increases as an economy becomes more open. In order to insulate its citizens from the vagaries of the world market, the government in states like Austria and the Netherlands assumes responsibility over a greater share of the state's economy. If capital and labor are not that mobile, open economies in terms of goods may be less likely to cut their tax rates because they place greater value on a large state apparatus.

We calculate the variable as the sum of exports and imports divided by Gross Domestic Product. The level of trade dependence in each OECD country was generally stable over time, but it did vary greatly across the member states. The highest observable levels in 1986 were found in the Benelux countries (Belgium-Luxembourg 134.6 and Netherlands 99.5) and in Ireland (103.8), while the United States (17.5), Japan (19) and Spain (36.6) were the least dependent on trade.<sup>12</sup> Simple correlations between this variable and the change in the corporate and personal income tax rates respectively of  $-.18$  and  $-.12$  indicate a possibly spurious association--not only are the levels small, but they suggest that open economies were *less* likely to make a significant cut in their tax rates.

<sup>12</sup> International Monetary Fund, *International Financial Statistics Yearbook 1994*.

### *Country Size*

An additional factor which could influence labor mobility in particular is the size of a country. Labor markets may be more inflexible in smaller economies than in large ones, forcing individuals to look beyond their borders for employment opportunities. An example familiar to many academics would be a country like Norway, which has only four universities with a limited number of professorships. Many qualified graduate students anticipate that they will have to go on the international market if they are to have any hope of receiving a job in their field. It is also quite possible that talent will receive a greater rate of return in larger markets than in smaller markets (Murphy, Schleifer, and Vishny 1991). The implications for countries like Norway are clear--"it is thus particularly important for small states to keep their tax rates on labor income low as compared to the United States' to reduce the tax push on their able individuals to emigrate (Tanzi 1995, 37)."

Similarly, governments may be more sensitive about keeping skilled labor in small countries than in larger ones. A "brain drain" of even a few of the most talented individuals (who are also much more likely than the population at large to fall in the highest personal income tax bracket) can damage irreparably the growth prospects of a small economy, while the loss of some individuals from an economy the size of the American one may have little noticeable impact. The log of a country's Gross Domestic Product is therefore included in the regression for the top personal income tax. An initial correlation of the change in the top personal rate with country size of  $-.19$  has the expected sign but is fairly weak.

### 2) Domestic Macro-economic Explanations

#### *Inflation and Economic Growth*

In addition to the international economic variables given above, national economic performance may have affected a state's propensity to move forward with tax reforms. How governments respond to changing macroeconomic conditions depends on their sensitivity both to changes in tax revenues and to complaints from tax payers.

If the government is only worried about how to raise revenues for current and near-term expenditures, inflation provides additional funds without having to adjust the tax

code. Especially where states use primarily progressive rate structures, an "inflation dividend" increases government revenues by creating illusory gains (Owens 1990). Inflation also reduces the real value of government debt. In either case, governments in high inflation countries may be satisfied with the present tax systems and propose less significant reform.

If governments are very sensitive to the concerns of potential voters, however, they are likely to respond to higher levels of inflation with greater tax cuts. Taxes are generally levied on nominal income instead of real income. Increase in the inflation rate leads to higher effective tax rates on real income with the same statutory tax rate. Voters may therefore put pressure on politicians to lower the marginal tax rate in high inflation countries (Sørensen 1994, 62-64; see also Razin and Sadka 1996). One would then expect a positive relationship in our regressions here between the level of the tax cut and the inflation rate.

With regard to economic growth, lower growth states should be more amenable to tax cuts. For a state concerned primarily about revenues, higher economic growth means higher profits and more tax collections, while low or negative growth suggests that many firms and some individuals are likely to report losses and hence pay no taxes. Similarly, for governments sensitive to the complaints of voters, citizens in most countries "vote with their pocketbook;" they voice support for the current government when the economy is strong and are more likely to vote against the incumbent when the economy is weak. Governments may then be more prone to take action when growth is anemic in order to demonstrate that they are responsive to voters' problems. Both conceptions of the reasons for state action anticipate that growth is inversely correlated with the level of change in the tax rates. A cautionary note, however, must be added concerning the direction of causality--if we detect a positive relationship between growth and tax cuts instead of the expected negative one, this result may indicate simply that tax reform spurred an expansion of the economy.

In terms of real economic growth, most countries experienced moderate growth during this time period, with the average growth rate of 3%. Exceptions are Norway and Denmark, which suffered from anemic average growth rates of 1.4% and 1.5%

respectively, and New Zealand, which had the lowest level of average growth at .6%.<sup>13</sup> Correlation coefficients of -.44 for both the income and corporate rates provide initial evidence that high-growth states were less likely to initiate significant tax cuts. The positive correlations for inflation (.11 and .50) indicate that worries about voter wrath overwhelmed revenue concerns, with the relationship between the inflation rate and the personal tax cut especially strong.

## 2. Political Hypotheses

### *Political Parties and Partisanship*

Political parties impact tax reform mainly in their attempts to fit policy to a set of macroeconomic goals. The goals of parties reflect the preferences of their core constituencies. Hibbs (1977: 1468) argues that the class-defined political interests of parties shape the policies preferred by left- and right wing governments. Labor-oriented parties of the left attach importance to full employment and equality of the income distribution, while capital-oriented parties of the right tend to pursue price stability and balance of payments equilibria. Both ends of the spectrum attach some priority to economic growth as well. The parties derive their priorities from assumptions about the effects of macroeconomic trends on the distribution of income. Given the short-term trade-off between unemployment and the rate of inflation -- the so-called Phillips Curve -- a high inflation-low unemployment configuration benefits the poor both relatively and absolutely (Hollister and Palmer 1972), while the burdens of unemployment are paid for mostly by the impoverished and the unemployed.

Regarding taxes, the presumption is that the left is more willing to tax corporations and wealthier individuals. Left governments may also be less sensitive to calls from corporations and high-income individuals that they are over-taxed relative to similar groups in other countries. In contrast, right-leaning parties are likely to be more sympathetic to groups that are part of their constituency, and they would be willing to reduce the top income tax rate and corporate rates more than left-leaning governments.

<sup>13</sup> OECD Economic Outlook 58, June 1996.

Swings in partisanship from the left to the right may have been a principal cause of the reforms. In the mid to late 1980's, conservative parties controlled the governments of many OECD countries, from Christian Democratic and Conservative dominance of Germany and Great Britain, respectively, to Republican control of the Senate through 1986 and the Presidency through 1992 in the United States. These governments may have preferred cuts in marginal tax rates on higher incomes and been able to implement them. We expect that the greatest cuts in marginal tax rates occurred where conservative parties were in power. Based on the figures provided by Castles and Mair (1984), each government is coded on a zero to ten scale, with zero representing a government on the far left and ten a government on the far right. The government furthest to the left was found in Australia (3.1), while the government furthest to the right was in the United Kingdom (7.8). A simple correlation coefficient of -.36 between the change in the corporate tax rate and partisanship indicates that left-wing governments were more likely to make deeper cuts than right-wing governments. This relationship is much weaker for the personal income tax, which had a correlation coefficient of -.07.

### *Veto Players:*

"Veto players" are persons or groups whose agreement is required to pass any law (Tsebelis 1995a and 1995b). The most important factor is the number of parties whose consent is needed for any bill to become law.<sup>14</sup> Political institutions can complicate the counting of veto players. In unicameral legislatures the number of veto players is simply equal to the number of parties that compose the government. In states that have bicameral legislatures or where a president can veto legislation, there will be more than one veto player if different parties control the various institutions. In the United Kingdom, for instance, where one-party majority governments are the norm, there is usually just one veto player, and once that player decides upon a given proposal, that proposal will become law. Similarly, in Italy from 1986 to 1990 there were a series of coalition governments composed of five parties (the *pentapartito*), and any proposal required in principle the approval of these five "veto players." In contrast, the United States has potentially three veto players because the consent of the House of Representatives, the Senate, and the

<sup>14</sup> Consistent with Tsebelis (1995a and b), we make the simplifying assumption that parties are unified actors.

President is required in most cases. During the time period under consideration in this paper, however, the United States had two veto players--according to the "absorption rule," when one party controls two different institutions whose assent is required, the number of veto players are reduced from two to one (Tsebelis 1995a, 310). After the 1986 elections through 1990 the Democrats controlled both houses of the Congress while the Republicans occupied the presidency.<sup>15</sup>

The higher the number of veto players, the harder it is to pass laws and the greater the chance that the status quo will be maintained. The implication is that states will not be able to respond equally to a shock they all experience together--states with one veto player will be able to react swiftly to any change in their situation, while states with many veto players will respond more incrementally, if at all. The shock that is most likely to have affected OECD countries from 1986 to 1990 is the American Tax Reform in 1986. If capital was more or less mobile, states may have felt pressure to reduce their own marginal rates to keep them in line with the American rate. The extent of tax reform would then have been greatest in states with the fewest veto players, such as in Great Britain where only one party controlled the government, and the most limited in states with several veto players, such as in Italy, where five parties constituted most of the ruling coalitions during this period. Note that, if capital was generally not mobile as Feldstein and Bacchetta (1991) assert, veto players would not be a significant variable.

Simple bi-variate correlations of -.37 for the corporate and -.41 for the personal income tax rate cuts have the anticipated sign and suggest that veto players may have been fairly important. As Graph 2 indicates, however, there appears to be a drop-off in the level of reform if there is more than one veto player. If one leaves out the first reformer, the United States, the shape of the relationship is somewhat parabolic, reminiscent of a backwards "j." The need to make any sort of compromise with another group or institution may be more important than the absolute number of players. In the regressions that follow, therefore, we recode variable for veto players as a dummy (0=one veto player, 1=two or more).

[Graph 2 About Here]

<sup>15</sup> In theory the president can also be discounted even if he comes from another party as long as Congress can easily override him. Since any override of a presidential veto would have required some Republican support in Congress, however, the president still counted as a veto player.

The explanations are compared in Table 2. The table also indicates the variable's presumed relationship with regard to changes in tax rates. The higher the number of veto players, for instance, the lower the extent of tax reform.

[Table 2 About Here]

### Explaining the Reforms

For both types of taxes, corporate income and personal income taxes, we conducted regressions which included a variable for each of the hypotheses discussed above. One addition to each equation was the respective tax rate in 1986. States that began the period with a comparatively low rate may not have felt the same pressure to reduce taxes further that a state with a higher rate might have experienced. The regression technique used is cross-sectional in nature. While we would prefer to use pooled time-series methods as well, the dataset is not well-suited for such an analysis. There was generally just one change to a given tax over the period, and it would be difficult to determine to what extent a given variable should be lagged in a systematic manner. It would also be impossible to account for higher levels of serial correlation in a dataset that has only five years.<sup>16</sup>

[Table 3 About Here]

Table 3 lists the regression results for corporate and personal income taxes respectively. The regression for the corporate taxes clearly does a better job describing the dependent variable. There are several surprises in these figures, and the following section will describe the effects of each type of explanation in turn.

### International Economic Variables

The tax we expect should be most affected by the growing integration of individual economies is the corporate income tax, since capital is generally considered to be more mobile than labor. Yet our results do not at first appear consistent with the standard stories given about the effects of growing internationalization. Neither of the variables used to measure levels of internationalization, capital restrictions or trade dependence, is

<sup>16</sup> Problems with serial correlation are also virtually unavoidable with so few years in a sample. Lindert (1996), in his analysis of increases in public spending from 1960 to 1981, breaks his data into four multi-year periods to reduce the effects of serial correlation.

statistically significant, nor do the coefficients have the expected sign. The paradoxical prediction is that states with relatively closed economies were the ones most likely to make deeper cuts in their corporate rates.

The results are similar for the top marginal income tax rate. Once again, the coefficients for country size and trade dependence both have the opposite sign than expected. It is of course entirely possible that we have failed to measure adequately labor mobility, but the absence of a rate convergence for income taxes leads us to believe that labor mobility (or immobility) does not explain the widespread income tax rate reductions that occurred from 1986 to 1990.

Thus, the measurements for internationalization used in the regressions did not seem to have any impact on the pattern of tax reform. As discussed in the section on capital mobility, however, it is possible that capital was already so mobile that differences in capital controls and in the percentage of the economy that relied on trade had no noticeable effect. The tax reforms may have then been a response to changes in the American tax code. The reduction of American statutory rates from 46 percent to 34 percent left firms with excess tax credits and new incentives to transfer costs to higher tax countries. Other states, fearing the loss of tax revenue and possibly investment and high-income labor as well, then responded to the American cut with changes of their own.

Indirect evidence for this line of reasoning can be found in the relationship between initial tax rates and the level of a state's rate change. The tax rate in 1986 did have an impact on the level of change for corporate income taxes. The five countries which did not change their rates or changed them trivially (Norway adjusted its rate 0.7%) also had the five lowest figures in 1986, and the variable remained significant in the regression equation. It is also noteworthy that they all had rates below or very close to the American rate of 34%. Graph 3 compares the level of change in the corporate rate with the percentage difference in a country's tax rate in 1986 from the new American rate passed that same year. This result suggests that the other states felt some need to adjust their marginal rates downward in response to the American reform.

[Graph 3 About Here]

For the top personal tax rate, however, the initial rate in 1986 seemed to have played much less of a role. While its sign was in the expected direction, it was not significant.

#### *Domestic Economic Variables*

The fairly strong relationship between domestic economic conditions and tax rate cuts indicates that governments were responsive to the health of their economy. The most important variable was economic growth. The sign of its coefficient was in the expected direction, and it was statistically significant in both regressions. The coefficients are also fairly large--the highest growth state, Japan, was expected to cut its marginal corporate rate (top income tax rate) 38.7 (39.2) percentage points less than New Zealand, the lowest growth state. These results are entirely consistent with the two conceptions of government mentioned before, i.e., a government sensitive to revenue changes or a government worried about its chances in the next election--deeper tax cuts in low growth states may have represented an effort to provide relief for voters already hurt by the economy; or, just as plausibly, in high growth countries the government may have received enough additional revenue so that it cared proportionately less about any loss of tax revenue to the first tax cutter, the United States. Regardless which explanation one finds more plausible, however, the results do rule out our potential simultaneity problem. The direction of causality could have been the opposite of that presumed here so that tax cuts led to greater economic growth. If the problem existed, one would have expected a positive relationship between growth and the size of the tax cut instead of the negative relationship we report here.

The findings for the inflation rate seem to support the model of a revenue maximizing state for the corporate tax, where the variable had a significant negative coefficient. As inflation increased the size of the cut in the corporate income tax decreased, suggesting that states which benefited from an "inflation dividend" felt less pressure to reform their tax systems. This relationship did not hold for changes in the personal income tax, where inflation was not statistically significant. This result is surprising given the relatively high correlation coefficient reported earlier. One explanation for the lack of significance may be the reduction in the progressivity of many systems during this time period in the form of a decrease in the number of income tax brackets. Spain slashed the most brackets with a reduction from 34 to 16, but the United

States and Japan had equally dramatic changes, with reductions from 14 to 2 and from 15 to 5 respectively. While some states, such as the Netherlands, France, Ireland, and Switzerland, did not make similar changes, the average number of brackets of the 19 OECD countries was nearly halved from 10.2 in 1986 to 4.9 in 1990.<sup>17</sup> As the rate structures flattened there was less possibility of "bracket creep." Of course, this change in brackets cannot be the entire explanation for the difference in the two regressions, since the variable was significant for corporate rates which are generally flat as well.<sup>18</sup>

#### *Political Variables*

We would expect that right-leaning governments would make deeper cuts in the two marginal rates than left-leaning governments. To our surprise (and consistent with Garrett 1995), left-leaning governments were more likely to make deeper cuts in the corporate tax rate than their right-leaning counterparts. One possible explanation is that the rates were already low in countries with right-leaning parties in power, but a correlation coefficient of just -.24 indicates only a weak relationship between the rate in 1986 and partisanship. A second possibility is that there is a conditional effect between partisanship and economic openness. Left-wing governments in open economies might have to pay a political premium in the form of deeper tax cuts to investors who fear that the government's policies may hurt their returns in the future (Garrett 1995). We therefore add an interactive variable equal to partisanship times trade dependence. The data does not seem to support this hypothesis. The newly created variable was not significant (see Table 4), and the primary effect was to reduce in significance somewhat the effects of economic growth and the number of veto players while eliminating the importance of partisanship altogether.<sup>19</sup>

[Table 4 About Here]

<sup>17</sup> Organisation for Economic Cooperation and Development (1993, 40).

<sup>18</sup> An additional macro-economic variable that we tested initially was the unemployment rate. Since there were already two domestic economic variables in the regressions, the results for the unemployment rate, which were statistically insignificant in all of the regressions, were left out of Table 3, but they can be furnished upon request.

<sup>19</sup> Regressions which included just an interactive term for partisanship and capital controls and also both interaction terms in the same equation yielded nearly identical results, with the interaction term always far below the threshold for statistical significance.

Explanations for this result, based on the dataset available, can only be speculative. One possibility is that the change in attitude towards redistribution within Social Democratic parties, and within Scandinavian Social Democratic parties in particular, had real effects on their tax policies. Swedish Social Democrats, for example, asserted that economic distortions in the tax system should be minimized through the greater use of value-added taxes, while goals of redistribution should be pursued primarily through public spending (Björklund, Palme, and Svensson 1995). Yet even this change in Social Democratic attitudes cannot be a full explanation because, while partisanship had an effect on corporate rate changes, it had no relationship at all to changes in the top income tax rate.

The findings with regard to veto players were extremely encouraging. A move to two or more veto players from one veto player reduces the change in corporate rates by 18.4 points and in the top marginal income tax rate by 20.3 points, and the variable was the only one except economic growth that was significant in both regressions<sup>20</sup>. Governments like Margaret Thatcher's in Britain which had simply to receive support from one political party made much deeper cuts than Helmut Kohl's government, where the Chancellor was forced to compromise with his coalition partners. They also suggest that states faced similar pressure to lower their tax rates in response to the American rate cut.

#### **Conclusion**

The standard explanation for many changes in economic policy across industrialized countries in recent years has been growing economic integration. At first glance, this reasoning seems to be especially appropriate for tax policy--why else did all states in the sample but Switzerland initiate tax reform at more or less the same time in the late 1980's? While the standard variables for measuring economic integration, the level of imports and exports as a percentage of GDP and capital controls, were not significant in any of the regressions, our results still provide evidence that tax policies were interdependent. The importance of both veto players and the initial prevailing rate a state

<sup>20</sup>George Tsebelis in personal correspondence suggested that we recode the variable both as a tri-value (1, 2, and 3 or more veto players) and as the log of the tri. The log of the tri is especially appealing theoretically because each additional veto player may represent less of a drag on the ability of the government to pass legislation. Both codings of the variable are also statistically significant, although somewhat less so than the dummy variable, and they do not change the substantive results.

maintained in 1986 in determining the level of the corporate tax cut both strongly suggest that capital was indeed quite mobile, at least mobile enough so that governments were forced to respond to the initial tax cut in the United States. One lesson from this study is that a variable for capital controls may not always pick up the pressures that a government feels to harmonize its economic policies in regressions. At the same time, a government's ability to respond to these pressures can depend critically on existing political institutions, and particularly on the number of institutional players which must approve any change in policy. Even when one of the respective players in the domestic arena presumably wanted to move forward with significant cuts in marginal tax rates, in cases where it had to win approval for its proposal from other veto players it had to make compromises which inevitably reduced the reform's scope.

This analysis has some interesting implications for the dynamics of tax competition. Several scholars worry that unfettered competition among states will drive taxes on capital and mobile labor down to zero. In game-theoretic terms, one can describe this situation as a prisoner's dilemma game--all states are worse off because they choose to 'defect' and to cut their rates, while they would have been better off had they all 'cooperated' by either keeping their rates as they were before or at least coordinating their rate changes (Giovannini 1989; Hallerberg 1996). Yet states with a higher number of veto players clearly do not adjust as well to changing economic conditions and to reductions in tax rates in other states. Such states may therefore find themselves unable, at least in the short run, to retaliate against cuts in other others with a 'defection' of their own, and they will receive the worst payoff in the game.

This situation may be especially problematic within the European Union. As further economic integration and the introduction of a common currency proceed apace, investors within Europe are likely to become even more sensitive to tax differences (Sinn 1990; Genser and Haufler 1996). States which have more veto players may become the real losers from further integration because they will not be as able to adjust to a rapidly changing fiscal playing field. One can imagine a cleavage developing on tax issues between states with one veto player and those with two or more, with states with more veto players calling for some form of tax harmonization of rates while countries traditionally with one veto player favoring "competitive" solutions and non-intervention.

In fact, based on the reactions of EU states to the Ruding Committee Report in 1992, one can speculate that evidence for this type of game already exists. The European Commission appointed the Committee, which was headed by former Dutch Finance Minister Ruding and which was formally known as the "Committee of Independent Tax Experts on Company Taxation," to produce a report on how increasing economic integration within the EU would affect member states' tax policies. The Ruding Committee Report recognized that tax competition in the corporate realm would likely increase within the European Union, and it suggested that member states accept a minimum statutory corporate income tax rate of 30%. Recent studies (Kanbur and Keen 1993; Genser and Haufler 1996; Inman and Rubinfeld 1996) have supported this conclusion based on the presumption that some sort of tax floor would be pareto-improving over full competition. Yet, for a proposal that promised to improve the welfare of all, it got no where politically. One interpretation of the failure of the Commission and the Council to act on Ruding's recommendations is that states like Britain refuse to cede any sovereignty at all over tax policy. Another possibility that this paper suggests is that the proposal is not at all pareto-improving, at least in the short-term--states with one veto player can take advantage of the inflexibility of others. It is therefore consistent with this argument that Britain, with one veto player, consistently blocks any coordination at all at the European Union level of statutory rates, while Belgium, a state that has often divisive coalition governments, appeals for some level of tax rate harmonization.<sup>21</sup> This cleavage line is likely to sharpen as Europe become more economically integrated.

<sup>21</sup> For the initial British response to the Ruding report see Elliot (1993), while a representative Belgian reaction is provided by the Belgian Minister of Finance Maystadt (1994).

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Table 1: Corporate and Personal Income Tax Rates in 1986 and 1990

State	Corporate Rate, 1986	Corporate Rate, 1990	% Change Tax Rate, 1986	Top Income Tax Rate, 1986	Top Income Tax Rate, 1990	% Change
Australia	49	39	20.4	57	47	17.5
Austria	55	30	45.5	62	50	19.4
Belgium	45	41	8.9	72	55	23.6
Canada	36	25	30.6	34	29	14.7
Denmark	50	40	20	45	40	11.1
Finland	33	33	0	51	43	15.7
France	45	37	17.8	65	57	12.3
Germany	56	50	10.7	56	53	5.4
Ireland	40	43	-7.5	58	53	8.6
Italy	36	36	0	62	50	19.3
Japan	43	37.5	13.1	70	50	28.6
Netherlands	42	35	16.7	72	60	16.7
New Zealand	45	28*	37.8	57	33	42.1
Norway	28	27.8	0.7	40	20	50
Spain	35	35	0	66	56	15.2
Sweden	52	30*	42.3	50*	20	60
Switzerland	30.3	30.3	0	13	13	0
U.K.	35	35	0	60	40	33.3
U.S.	46	34	26.1	40	28	30

‡ 1989 figure.

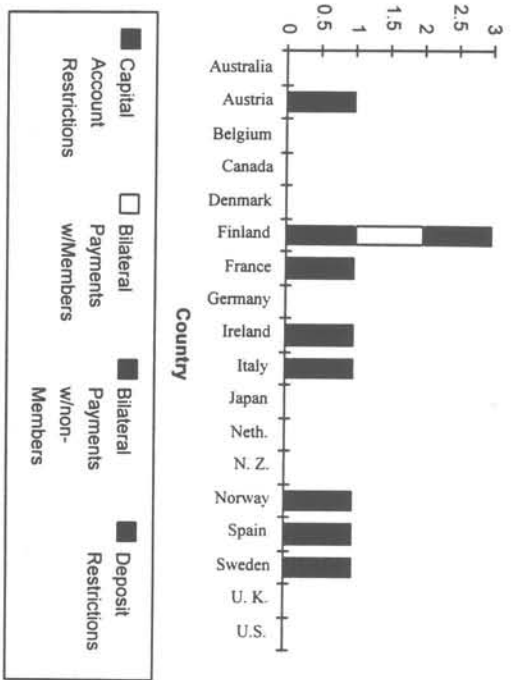
\* 1991 figure.

Comments: The corporate income tax usually had just one standard rate and rarely had more than two rates. Exceptions include seven countries that had a standard rate for most corporations but have a lower rate for those that make a profit below a certain threshold, and this study uses only the standard rate. Two others, Germany and France, have different rates for distributed and undistributed profits. In the regressions we include the latter rate. Finally, for the only two countries that have a progressive rate structure, Ireland and Switzerland, we include just the top rate.

Note as well that the "% Change" columns represent the percent change *downward* in the respective rate.

Source: Organisation for Economic Cooperation and Development 1993, 40, 66; Price Waterhouse, *Corporate Taxes - A Worldwide Summary*, various years, and *Ibid.*, *Individual Taxes - A Worldwide Summary*, various years.

Graph 1: Capital Controls by Country, 1990



Graph 2: Change in the Top Personal Income Tax Rate vs. the Average Number of Veto Players, 1986-1990

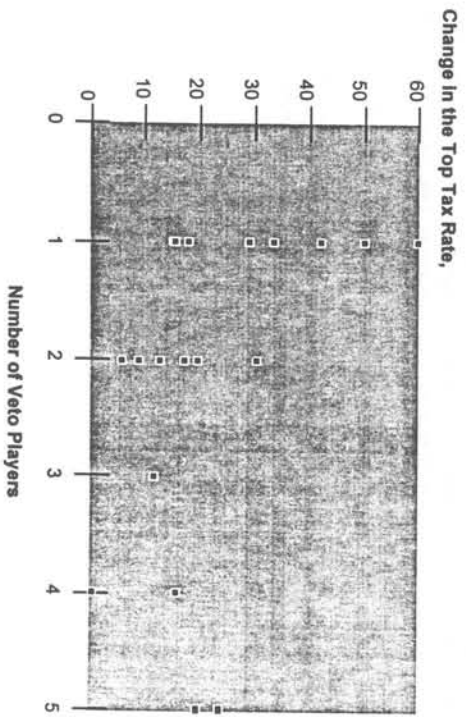


Table 2: Comparison of the Hypotheses

	Domestic	International
Economic	GDP growth (-) Inflation (+)	Trade Dependence (+) Capital Restrictions (-) (Corp. Tax) Country Size (-) (Personal Tax)
Political	Number of Veto Powers (-) Partisanship (+) (Increases indicate move to the right)	

The sign in the parentheses indicates whether a cut in the tax rate is likely to be larger (+) or smaller (-) if the value for a given variable increases.

Table 3: Determinants of Changes in the Top Marginal Tax Rate for Corporate and Personal Income Taxes, 1986-90

Variable	Coefficient	t-ratio	p-value	Coefficient	t-ratio	p-value
Dependent	Corporate Income Tax, %			Personal Income Tax, %		
Independent	Constant	1.94	0.08	11.7	.3	0.76
Capital	1.3	0.38	0.71	12.1	1.27	0.23
Restrictions/Log (GDP)	-0.1	-1.55	0.15	0.1	0.90	0.38
Dependence	-4.7*	-2.47	0.03	0.6	0.26	0.80
Inflation	-9.6**	-3.46	0.01	-9.7*	-2.4	0.04
Real Growth	-18.0*	-2.73	0.02	-18.9*	-2.3	0.05
Veto Dummy	-4.4*	-2.31	0.04	-0.8	-0.33	0.75
Partisanship	0.9*	2.81	0.02	0.3	1.27	0.23
Tax Rate, 1986						
R squared	80.1%			61.8%		
R squared (Adjusted)	67.4%			37.5%		

Coefficients that are starred are significant at  $p=0.05$ , while those that are starred twice are significant at  $p=0.01$ .

The dependent variable measures the percentage change downward in the marginal tax rate, so that positive values indicate tax reductions. This coding is used to facilitate comparisons in the level of change across countries; higher figures for the dependent variable indicate greater change in the respective tax system. Similarly, a negative beta coefficient for a given variable indicates that higher values for that variable decrease the size of the tax change.

Capital controls are used for the corporate tax rate, while log(GDP) is the measure included for the personal income tax regression.

Graph 3: Amount over the New American Corporate Statutory Rate in 1987 of 34% Versus the Amount of Change in the Tax Rate, 1986-90

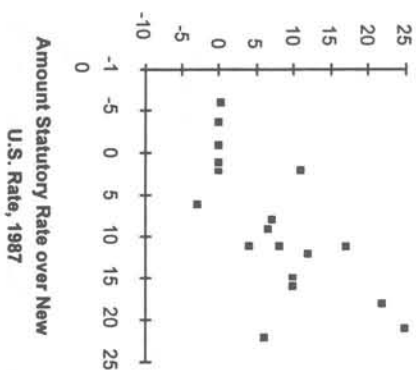


Table 4: Corporate Tax Regression with the Addition of the Conditional Effects of Partisanship and Trade

Variable	Coefficient	t-ratio
Constant	37.5	0.78
Capital Restrictions	1.3	0.36
Trade Dependence	0.3	0.62
Inflation	-3.7	-1.73
Real Growth	-9.1	-3.20
Veto Dummy	-15.6	-2.18
Partisanship	-0.2	-0.03
Rate, 1986	0.9	2.69
Partisanship*Trade Dependence	-0.1	-0.90

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