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Partisan politics and corporate tax competition for foreign investment

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PARTISAN POLITICS AND TAX COMPETITION FOR FOREIGN INVESTMENT

by

Hyeon Seok Park

An Abstract

Of a thesis submitted in partial fulfillment
of the requirements for the Doctor of
Philosophy degree in Political Science
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Thesis Supervisor: Professor John A. C. Conybeare

ABSTRACT

National governments face a dilemma: they want to provide an attractive environment to the multinational investors by lowering the corporate tax rates. At the same time, they want to maintain the tax base to protect the losers from the globalization. This dilemma is the starting point of this study. Here I explore the patterns of the corporate tax competition for foreign investment both in the developed as well as in the developing countries. A revised theory of partisan politics is developed to explain the patterns of the corporate tax competition. Traditionally, a left-wing party often promotes redistribution through taxation, while a right-wing party promotes the efficiency of the market by minimizing the size of the government. The proposed theory of partisan politics shows that a left-wing party pursues a conservative low tax policy similar to a right-wing counterpart when the tax base is not big enough to fund the redistribution. If the left-wing government is not able to collect tax revenue necessary for the redistribution, it has no choice but to extend the tax base for the redistribution. However, if the tax base is big enough, a left wing party pursues standard high-tax large-spending policy. This policy is clearly different from the policy preferred by the right-wing party.

This new version of partisan theory for corporate tax competition is empirically tested using a dataset that covers both developed as well as developing countries. Different control variables are incorporated in the empirical models accounting for the political and economic characteristics of the countries.

The theory is, then, applied to explain the effect of veto players on the corporate tax competition. According to the neoliberal paradigm, tax cut is a necessary strategy to attract foreign investment. But, the domestic partisan veto players might find such neoliberal reforms costly, and then, try to block them. If there are a large number of left-wing veto players in a country, a neoliberal tax reform is politically difficult. The theory proposed here, however, implies that this argument is conditionally correct, because,

given a tiny tax base, veto players from the left-wing parties prefer not to block a neoliberal tax reform. The ideal points of the left-wing veto players get close to the ideal points of the right-wing veto players, reducing the political cost of the tax reform. However, the left-wing veto players imposes significant amount of political cost on the neoliberal tax reform when a country has a large source of capital taxation. They prefer to collect more tax revenue from the corporations with redistribute policy agenda. This argument is tested in the context of the developed and the developing countries. The effect of the veto players disappears when the tax base is tiny, but the effect is significant when a country has a large source of capital taxation.

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CERTIFICATE OF APPROVAL

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PH.D. THESIS

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CHAPTER 1

INTRODUCTION:

GLOBALIZATION AND THE POLITICS OF TAXATION

Globalization, Partisan Politics, and Capital Tax Policies

Political implications of international capital mobility are not trivial. If a government fails to offer a favorable investment environment to capital, it loses its tax base since capital will move out to other countries that offer the better incentives. With a diminishing tax base, it is difficult for any government to achieve its policy goals. These projects need to be funded by tax revenue. To extend the tax base governments attempt to attract internationally mobile capital. Moreover, if the mobile capital started to flee the country, the job opportunities in the country will decrease. For the purpose of maximizing tax base and job opportunities, a government should respond to what other nations do and should attempt to make a relatively better offer to capital investors to attract them. Mobile capital can vote with its feet. The offer that a government can make to the international investors includes, but is not limited to, more lenient environmental and labor regulations, more stable political environment, and lower corporate tax rates. Among them the corporate tax rate is the major topic of this study. The globalization hypothesis implies that the cross-boarder capital mobility undermines the state autonomy since the policy choice of a state is constrained by the pressure to promote investment opportunities. National governments are becoming less relevant as the integration of the world economy advances.

Has the increased capital mobility diminished the autonomy of the individual state and constrained their ability to provide public goods and welfare? Previous studies on the political consequences of globalization argue that national governments are resilient to the pressure from the mobile capital (Garrett 1998a; Pierson 2001; Swank 2002; Swank and Steinmo 2002; Weiss 1998). Based upon the observations about the political and

economic outputs after the globalization–i.e. the amount of social spending, economic performance, etc– these studies show that the social spending of the national governments in industrial democracies did not reduce significantly in spite of the pressure from the cross-border capital mobility. Moreover their performances are better than the expectation of the globalization hypothesis when certain domestic conditions are satisfied. With a few exceptions such as Swank and Steinmo (2002), the conclusions of these studies are driven by the observation of the spending of the governments and their performances after the globalization.

Individual government should be able to collect enough taxes to fund its projects. Frequently, national governments decide to borrow money from international and domestic capital markets instead of taxation. However, eventually they need to collect taxes to pay back these loans. The analyses in the following chapters are focused on the input side to the national governments instead of the output produced by them. Has the globalization constrained the capacity of national governments to collect taxes? Have the national governments reduced the tax rates on mobile capital to attract more foreign investment? To answer these questions, this study analyses capital taxation. According to the globalization hypothesis, it is difficult for individual governments to collect taxes on mobile factors since the mobile factor moves out of the country when the government imposes tax rates higher than the other country, if all other things are equal. Compared to the mobility of labor forces, the cross-border capital mobility has increased with economic globalization, mobile capital is expected to be sensitive to the capital tax rates in each country since international investors can choose the destination of investment to maximize their profit with lower tax rates (Andrews 1994; Lee and McKenzie 1989; Wallerstein and Przworski 1995). If a government wants to maintain its tax base, it needs to compete with other countries by offering lower capital tax rates. If all national governments jump into this competition of reducing capital tax rates, we observe so-

called “race-to-the-bottom” tax competition (Basinger and Hallerberg2004; Genschell 2002; Haaparanta 1996; Swank 2006).

The economics literature has expressed the pessimistic view that increased capital mobility results in the under-provision of public goods. Governments in the globalized economy engage in a wasteful competition for scarce capital by reducing tax rates and public expenditure since a reduction in corporate tax rate increases the return to capital (Zodrow and Mieszkowski, 1986; Wilson, 1999). However, other bodies of literature indicate that competition imposes discipline on governments. Governments are motivated to reduce corruption and inefficiency through the process of competition for capital (Obstfeld, 1998; Stiglitz, 2000). Although these two distinct set of literature differ from each other in terms of their views on the political implications of international capital mobility, they share the idea that national governments are competing for internationally mobile capital and that higher levels of capital mobility leads to a “race to the bottom” competition in social policy and capital taxation.

Are these claims supported by empirical evidence? There seems to be no consensus on the question in the previous literature. The empirical findings from the globalization literature suggest that we do not observe this “race to the bottom” tax competition even though international capital mobility has increased (Figure 1-1). It is clear that we do not observe “bottom” capital tax rates since the capital tax rates do not converge to zero. However, at the same time, many studies recognize that the capital tax rates would have been higher if there is no tax competition for foreign investment among national governments (Baldwin and Krugman 2004; Basinger and Hallerberg 2006; Cao 2010; Devereux, Lockwood, and Redoano 2008; Hays 2003; Mendoza and Tesar 2005; Plümper and Troeger 2009; Quinn 1997; Slemrod 2004).

This project aims to explain the gap between the race-to-the-bottom tax competition hypothesis and the empirical observation by focusing on the effect of the partisan politics on the capital taxation. Many studies provided alternative explanations

for this gap based on the characteristics of domestic political institutions (Garrett 1998a, 1998b; Garrett and Mitchell 2001; Hall and Soskice 2001; Hays 2003; Steinmo 1993; Steinmo 1993) and the incentive structure of political leaders in democracies (Hall and Soskice 2001; Basinger and Hallerberg 2004). According to these studies, the variation of capital tax rates among nations can be explained by the variation of domestic political institutions. Although these studies point out different sets of domestic political institutions relevant to explain the tax policies, they share the basic idea that reducing capital tax rate is politically difficult for a government due to the opposition by the beneficiaries of government spending. Each study identifies the institutional condition that makes the opposition politically effective and powerful. The institutional approach is powerful in explaining the variance across the nations if we can identify the difference of the major institutional characteristics among nations. This approach, however, does have a weakness. The variance of domestic political institutions is not useful when you explain the variance of capital tax rates over time due to the fact that the domestic political institutions do not change often over time.

This project considers the partisan balance of power in a government, which varies over time in many countries, as a major factor explaining a government's decision to jump into the race-to-the-bottom tax competition. The linkage between partisanship and economic policy has been well established (Alesina and Rosenthal 1989; Hibbs 1977). The literature on the tax competition assumes that left wing parties tend to set up higher capital tax rates since they pursue redistribution for the labor. In the following chapters, a modified version of partisan theory is developed since the effect of the partisanship on the capital tax rates is interactive with the capital endowment of the country. When a country is running short of the capital endowment, even a left-wing government is not going to raise the capital tax rates for the redistribution. A left-wing government can predict that the strategy of high capital tax rates for redistribution will not work. The amount of the tax revenue it can collect is limited due to the small size of

the tax base. In this situation, a left-wing government pursues conservative capital tax policies to attract more foreign capital to create more jobs and to extend tax base for the redistribution tomorrow. However, given a large capital stock, the left-wing party would raise tax rate while the right-wing party reduce the tax rate, consistent with the prediction of the standard partisan politics argument. With a plenty of capital invested, the left-wing government can collect enough tax revenue for redistribution. However, the right-wing government tries to boost the profit of the firms. This reasoning is different from the standard argument that a left-wing government always prefers high-level capital tax rates.

The Politics of Corporate Taxation and Foreign Investment

In the rapidly globalizing world, taxation remains as an important issue as it determines the capacity of a state to function. This study aims to explain the capital tax rates in the context of globalization. In this project, the capital tax rates are measured by the statutory corporate tax rate of individual countries.

Previous studies, with a few exceptions (Swank and Steinmo 2002; Hays 2003; Basinger and Hallerberg 2004), emphasized the importance of the government output (i.e. government spending and economic performance) rather than the input (i.e. taxation) to the government. These studies argue that economic actors, especially multinational firms, are not that sensitive to the change of capital tax rates (Mosley 2003; Swank 1998, 2002; Swank and Steinmo 2002). The difference of the capital tax rates among countries becomes important for international investors to make decisions on the destination of the investment when all other things are equal. Usually all other things are not equal and they are more important than the capital tax rates. It would be the case that the capital tax rates are trivial to some economic actors. At the same time, however, the political debates on the corporate tax rates and investment are frequently observed in many places. If the capital tax rates are not important at all, it is difficult to understand why politicians spend their time and efforts debating on the corporate tax policy.

For example, the low corporate tax rate in Ireland is an important political issue in European Union (EU). Ireland has maintained low corporate income tax rate (12.5% in 2010) compared not only to the EU member countries such as Germany (29.8%) and France (34.4%), but also to the rest of the world (25%). Ireland has been able to attract foreign investors who want to take advantage of the ultra low corporate tax rate in Ireland. Even after the economic crash in 2008, Ireland maintained its low corporate tax rate. After the property crash and banking crisis, Ireland accepted a €67.5 billion bail-out from the European Union and International Monetary Fund in 2010. French President Nicloas Sarkozy, with the support of German Chancellor Angela Merkel, repeatedly pressured Taoiseach (Irish Prime Minister) Enda Kenny to change Irish corporate tax regime in return for an interest rate cut on Ireland since France and Germany believed that Irish corporate tax regime caused unfair tax competition (*Irish Times* January 19, 2012). In an interview with the *Financial Times* (January 5, 2012), Richard Burton, the Irish minister of Enterprise, Employment, Jobs, and Innovation said: "the strong multinational sector was a key factor that set the country apart from other struggling eurozone nations and would enable it to meet its international obligations under its bail-out programme." He argued that Ireland would resist to the pressure for the change of its corporate tax regime so that Ireland could remain as an attractive destination of the foreign capital investment.

Due to the concerns about the corporate tax competition, the EU pursues a policy of corporate tax harmonization in the long term to avoid tax competition among member states. European Commission launched a proposal for the Common Consolidated Corporate Tax Base, in 2011, to radically reform corporate income tax in the EU. Under this proposal, each company would compute only its EU-wide consolidated profit on an EU-wide common definition of the tax base. The Commission aims to reduce profit shifting for the purpose of tax evasion. According to an estimate of Bettendorf, Devereux, Van Der Host, Loretz, and De Mooij (2010), Ireland will suffer a GDP fall of more than 3

%. Ireland is reluctant to support this proposal not only because of the expected loss, but also because of the possibility that it would be a beginning of a corporate tax harmonization in Europe. If the member states of EU lose their control on the corporate tax rate for the tax harmonization, Ireland will lose its competitiveness in attracting foreign investment by lower corporate tax rates.

In the United States, President Barak Obama opened an election-year debate with Republicans in Congress seeking even lower taxes for businesses (*New York Times* February 22, 2012). The current US corporate tax rate is 35 percent, one of the highest in the world, after Japan. President Obama proposed to reduce the top corporate tax rate to 28 percent. By this change, he expects that the tax cut helps American firms at a competitive disadvantage and discourages outsourcing to promote job opportunities in the US.

Previous studies also point out that corporate tax competition did not cause the collapse of the welfare spending in Europe, since countries tend to move the tax base from the mobile capital to immobile sources, such as labor income, goods and services, etc. Globalization produces winners and losers. To protect the losers from the force of globalization, national governments need to meet the demand for larger social spending. In order to fund these social spending, the national governments reduce their tax revenue from the mobile capital and increase the tax revenue from the immobile sources, such as value-added taxes. According to this logic, the relative importance of the tax revenue from the mobile capital is diminishing over time if a country is able to find immobile sources for the tax revenue (Garrett 1998a; Rodrick 1997; Mendoza and Tesar 2005; Slemrod 2004; Swank 2006; Swank and Steinmo 2002). Figure 1-2 shows the pattern of the tax revenue from capital and the tax revenue from the goods and services in OECD members from 1981 to 2009[1]. The tax revenue from the profits and income of capital as a

[1] The values on the line in the figure 1-2 are not average values. The total amount of the tax revenue from the corporate sector in every OECD member countries is divided by the total

percentage of total tax revenue is represented by the hard line. The dotted line shows the percentage of tax revenue from goods and services. It includes value added taxes (if applicable) and sales taxes. The pattern in the figure 1-2 indicates that the share of tax revenue collected from the immobile sources is becoming larger compared to the portion of tax revenue from the corporation which is relatively stable over time. At first glance, this pattern supports the argument that more tax is collected from the immobile sources with the globalization. However, it is interesting that the share of tax revenue from the corporations remains relatively stable although the tax rates applied to the corporations in OECD countries have decreased over time (see figure 1-1). The figure implies that at least the OECD member countries have maintained the size of tax base by changing the corporate tax rates. The tax revenue from the corporations still provides significant portion of total tax revenue in OECD countries. Moreover, developing countries are more heavily dependent upon the tax revenue from the capital since the share of tax revenue from the individual income is tiny (Gordon and Li 2009). In this part of the world, the tax revenue from the corporation is significantly important, although the corporate tax rates in developing countries are largely ignored by the previous literature with a few exceptions (Cao 2010).

In sum, many of political and economic actors cares about the capital tax rates and the corporate tax rates. The political debates about the corporate tax rates in many places indicates that the national governments want to provide an attractive environment to the multinational investors by lowering the corporate tax rates. At the same time, national governments maintain the tax base to support the losers from the globalization. This tension is the starting point of this study to explain the patterns of the corporate tax competition for the foreign investment. In the next chapter, a theory of partisan politics is

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amount of the tax revenue in every OECD member countries. Tax revenue from goods and services are calculated in the same way. Therefore, the results in the figure are partly driven by the major large economies in OECD.

developed to explain the patterns of the corporate tax competition. Traditionally, a left-wing party is considered to be associated with the redistribution through taxation, compared to a right-wing party who prefers to promote the efficiency of the market by minimizing the size of the government. In the proposed theory of partisan politics, I argue that a left-wing party pursues a conservative low tax policy similar to a right-wing counterpart when the tax base is not big enough to fund the redistribution. If the left-wing government is not able to collect tax revenue necessary for the redistribution, it has no choice but to extend the tax base for the redistribution tomorrow. However, if the tax base is big enough, a left wing party pursues standard high-tax large-spending policy. This policy is clearly different from the policy preferred by a right-wing party.

This new version of partisan theory for corporate tax competition is empirically tested. In chapter 3, this theory is tested with the data of developed democracies since most of the previous studies on the corporate tax competition use the datasets from industrial democracies. In chapter 4, the datasets including developing world are used to test the theory. In this setting, different control variables are incorporated in the empirical models since the political and economic characteristics of developing countries are different from the industrialized democracies. According to this theory, the standard assumption of partisanship is correct only under a given set of conditions.

Next to these chapters, the partisan theory is applied to explain the effect of veto players on the corporate tax competition. The logic of tax competition is applied to support the inevitable nature of neoliberal tax reform. If a country is reluctant to reduce its corporate tax rates, then the mobile capital flies out of the country. However, the neoliberal tax reform is politically costly due to the domestic veto players (Basinger and Hallerberg 2004; Hallerberg and Basinger 1998; Tsebelis 2002). These studies argue that the left-wing veto players are reluctant to reduce the corporate tax rates. If there are a large number of left-wing veto players in a country, a neoliberal tax reform is politically difficult. However, the new theory of partisan politics implies that this argument is

conditionally correct since left wing veto players do not want to veto a neoliberal tax reform when the tax base is tiny. In this situation, the political cost of tax reform is reduced since the ideal points of the left-wing veto players are close to the ideal points of the right-wing veto players. However, the left-wing veto players imposes significant amount of political cost on the neoliberal tax reform when a country has a large source of capital taxation. The left-wing veto players prefer to collect more tax from the corporations to redistribute to the labor. This hypothesis is also tested with the data set including industrial democracies and developing countries. In both cases, the effect of the veto players disappear when the tax base is tiny, but the effect is significant when a country has a large source of capital taxation.

This project aims to explain the observed pattern of the corporate tax competition by a modified theory of partisan politics. This approach is useful to explain why sometimes left-wing parties pursue conservative economic policies. In addition to this modification, this study makes a few contributions to the literature of political economy and tax competition. First, this study re-emphasizes the importance of partisan politics. Most of the literature on political economy and tax competition pays much attention to the cross-national variance of domestic political institutions. As the application of the partisan theory to veto player argument shows, the partisan politics explanation identifies when the effects of domestic political institutions are neutralized. Second, the partisan approach can be applied to the developing countries, since the political parties in developing countries can be located in the continuum of left and right. The institutional characteristics of industrial democracies are sometimes difficult to apply to developing countries. For example, at least for now, democratic corporatism and consensus democracy are unique characteristics applicable to developed democracies.

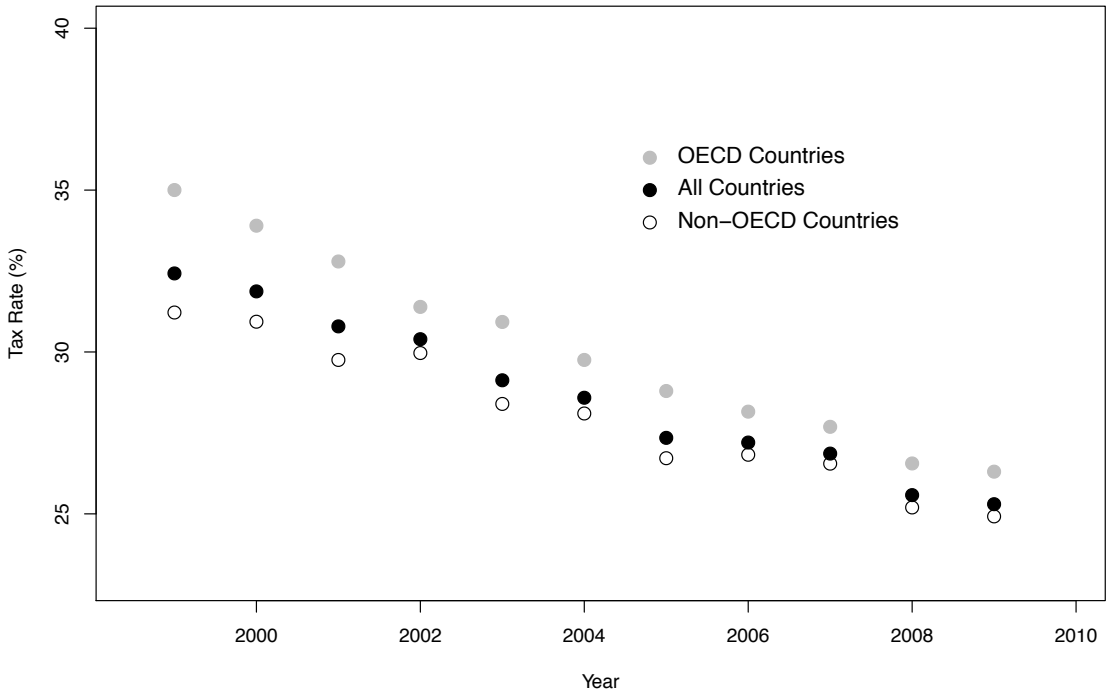

Figure 1-1 Average Top Corporate Tax Rates (%)

Source: World Bank, *World Development Indicators 2011.*

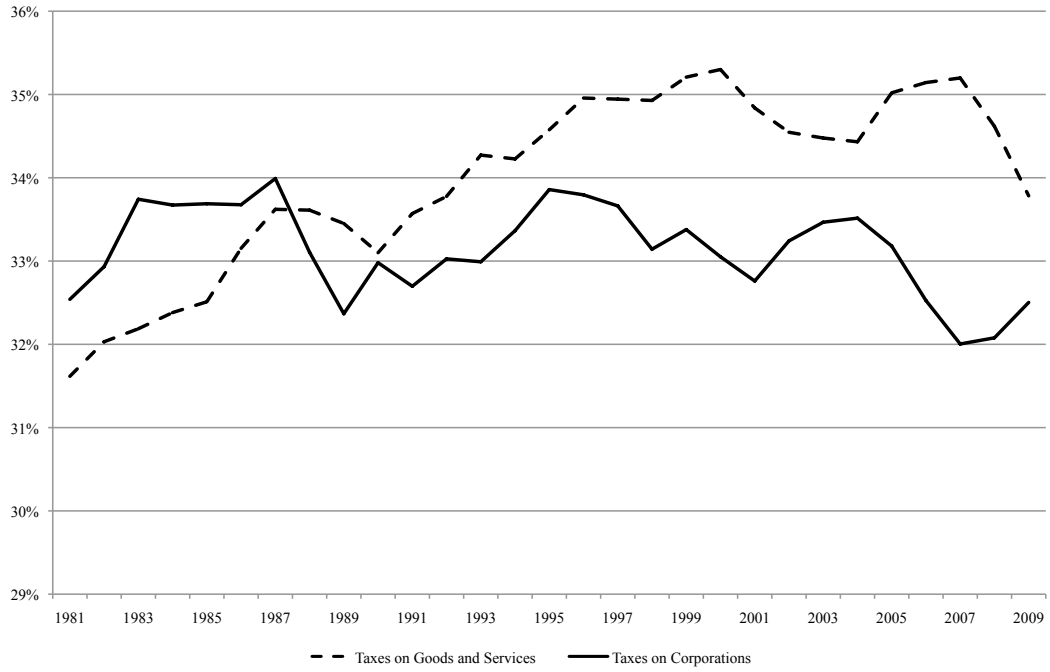

Figure 1-2 Tax Revenue by Sector as Percentage of Total Taxation in OECD

Note: Taxes on Goods and Services include VAT and sales taxes. Taxes on Corporations include taxes from the profits and capital gains of corporations.

Source: OECD (2010), "Revenue Statistics: Comparative tables", *OECD Tax Statistics* (database).

CHAPTER 2
A THEORY OF PARTISAN POLITICS AND THE CORPORATE TAX COMPETITION

The Determinant of Corporate Tax Policy

The standard economic literature claims that national governments compete for the foreign capital by lowering the capital tax rates as the mobile capital moves to the country with the lowest tax rates to maximize the return for the capital (Zodrow and Mieszkowski 1986; Rodrik 1997; Wilson 1999). Although logically appealing, the empirical support for this argument is mixed. Garrett (1998), Swank (2002), Hays (2003), and Plümper and Troeger (2009) argue that governments have maintained significantly high levels of capital taxation although the international mobility of capital has increased. However, Devereux, Lockwood and Redoano (2008) show that there is a competition for more capital among countries and that competing countries have lower tax rates than countries out of the competition, although they do not converge to zero tax rates. Genschel (2002) makes a similar point, arguing that average tax rate of OECD members has remained relatively constant but would have been much higher without competition. In spite of the debate about the interpretation of empirical data, it is clear that capital tax rates are not converging toward zero. There have been several attempts to fill this gap between the theoretical expectations of a "race to the bottom" tax competition and the empirical findings.

First, economists have tried to find a condition where tax coordination, instead of tax competition, is a sustainable equilibrium. For example, according to Baldwin and Krugman (2004), industrial concentration creates "agglomeration rent" when there is increasing returns to scale. Firms overcome the burden of the capital tax by acquiring the benefit of agglomeration in a particular geographic region. This is one logical explanation for the anomalies between the theoretical predictions and the empirical findings. But this

argument can only be applied to the limited situations where there is an "agglomeration rent."

Second, a group of political scientists pay attention to the role of domestic political institutions and the political incentive structures for corporate tax policies (Swank, 2002; Hays 2003). According to Garrett's study on the industrial democracies (1998), the combination of a leftist governing party and democratic corporatism is politically sustainable with high level of government spending in spite of the constraint imposed by mobile capital. The combination of a right-wing party and market-oriented system is associated with a low capital tax rate. He argues that the leftist governing party and corporatist organization can coordinate the economic policies and the adjustment process to the globalization. He empirically shows that the economic performances of the left-wing governments are outstanding. As a result, the combination is electorally sustainable. Hays (2003), on the other hand, argues that states with a majoritarian electoral system are likely to have higher capital tax rates, but states with consensus democracy, which is empirically correlated with democratic corporatism, are likely to have lower capital tax rates if all other things are equal. Hays points out that the number of votes from the labor is always larger than the votes from the capital. In a majoritarian electoral system, therefore, the preference of the median voter always represents the preference of the labor, which is higher corporate tax rate for the redistribution. In a consensus democracy, the preference of the capital is always represented as well as the preference of the labor. No one is dominant in a consensus democracy. As a result, a consensus democracy tends to have a lower capital tax rates than a country with the majoritarian electoral system.

Although the arguments of Garrett and Hays lead to opposite predictions, both of them try to explain the capital tax policy of the industrial democracies through the characteristics of the domestic political institutions. The arguments based on the political institutions are useful in explaining and predicting the variation of capital tax policies

across the countries. However, it is difficult to explain the direction of policy by looking at institutional structures. For example, Hays's assumption that the labor groups win elections in general (2003) is not realistic. Although the labor is the majority in terms of the vote count, often pro-capital politicians win elections because the workers expect high level of economic growth, which is related to an increase in labor income, when the pro-capital politicians take the political power. At the same time, voting is not the only way available for the capital to influence tax policies. For example, large-scale conglomerates are sensitive to capital tax rates and they have relatively stronger lobbying capacity than a large number of labor workers because the collective action problem is less serious.

Garrett (1998) and Hays (2003) provide strong arguments on the domestic political institutions and their impact on tax competition. Since the tax competition is the competition between or among nations, however, we need to take strategic interactions between or among nations into account seriously. If a country chooses to adopt a high level of capital tax rate due to its consensus democratic institutions, for example, the country's choice should have an impact upon the choice of the other country if those two countries are competing for internationally mobile capital. Among political science literature on tax competition, Basinger and Hallerberg (2004) and Cao (2010) exceptionally focuses on this strategic interactions. Basinger and Hallerberg argue that the reduction of the costs of tax reform in foreign countries increases the likelihood that a country decreases capital tax rates. If a neighboring competitor adopts a lower corporate tax rate, then the country needs to consider the reduction of its tax rates seriously to avoid the capital flight. Although they take into account the strategic interactions between or among states, they also assume that it is always costly for a leftist government to lower the capital tax rates. Sometimes, however, for a leftist government, to maintain high tax rates is more costly than to cut taxes although tax cut is still politically painful (Williamson and Haggard, 1994). During the Asian financial crisis in the late 1990s, the

liberal government in South Korea[2] accepted the austerity conditions from IMF and initiated acute economic restructuring, which is considered to be a typical right-wing prescription. This case is interesting since the standard partisan argument is not able to explain why the pro-labor government pursues conservative economic reform. Earlier studies conclude that the relevance of partisan politics has disappeared since the late 1970s (Castles 1998; Huber and Stephens 2001a, b; Osterloe and Debus 2012; Pierson 1996; Ross 2000). However, this phenomenon can be reinterpreted in a different way through the lens of the new version of partisan politics theory developed in the next section. The partisan preference of the left-wing party is interactive with the economic situation. When the tax base is tiny, it would be the case that the difference of the left and the right disappears. This observation is not because of the irrelevance of the partisan politics, but because of the economic conditions where the amount of capital available in the country is not large enough to collect enough tax revenue for redistribution. If the size of the capital investment in the country increases, then the left-wing parties will pursue a traditional left-wing style economic policies compared to the right-wing parties.

A Model of Tax Competition with Partisan Politics

In this section, a simple model is presented to illustrate the argument. At first, a government will make a decision on the tax policy in the open economy. Capital can move in and out of the country. But the economic situation outside of the country is exogenously given. The government makes a decision considering the mobility of the capital. However, it does not strategically interact with other governments. The profit from the investment outside of the country is exogenously given. By this way, the effect of domestic political and economic factors on the tax policy can be highlighted. After the

[2] The meaning of the 'liberal' government in the context of Korean politics is different from the meaning of the word, 'liberal' in the context of the economic policy making. The government of the South Korea at that time was led by the President Kim Dae Jung. He is considered to be

analysis of this case, we will consider the situation where the countries interact with each other. In this situation, the tax rate of the neighboring country affects the tax rate of the country.

A multinational corporation (MNC) has decided to make an investment. The investment decision is a result of the simple game between the government in the country 1 and the MNC. In the first stage, the government sets up the corporate tax rate. In the second stage, the MNC makes an investment decision after considering the tax rate, the size of the domestic capital, and the world average capital return. The game is solved by the backward induction. Therefore, we start with the investment decision in the second stage.

The MNC makes a decision to allocate its capital between the country 1 and other countries to maximize its profit. In the country 1, the MNC and the domestic firm produce same kind of product for the market. The price of the good is decided by the linear demand function:

$$p = a - k_d - k \tag{1}$$

where $a - k_d - k > 0$. a is a constant and k is the amount of capital investment made by the MNC. k_d is the amount of capital already invested by the domestic firm. The price of the good decreases as the number of the goods in the market increases. The domestic investment k_d is assumed to be immobile for the short term. The investment decision is already made and the amount of k_d will be invested. Considering the amount of k_d and the corporate tax rate t, the MNC makes a decision about the amount of the capital it will allocate to the country 1. The profits of the MNC and the domestic firm are defined in the following way:

$$\begin{aligned} \pi_f &= pk - wk - tk \\ \pi_d &= pk_d - wk_d - tk_d \end{aligned} \tag{2}$$

where π_f is the amount of the profit the MNC will get if it invest *k* amount of capital. To produce a unit of the good, a unit of capital and a unit of labor are required. *w* is the cost for the labor. The unit cost of the labor is fixed throughout the model. If the MNC produces more, then the wage cost becomes bigger. *t* is the amount of the tax the corporation need to pay to the government. It pays *t* for each unit of the good produced. The total amount of the profit for the MNC in the country 1 is the total revenue minus wage and tax. π_d is the profit for the domestic firm. Since the investment decision of the domestic firm is already made, k_d is fixed. The profit for the domestic firm, therefore, is a function of the price of the good. The price is decided by the amount of *k* in (1). From the domestic firm's perspective, the foreign investment from the MNC increases the competition in the market and reduces the amount of the profit since *p* goes down with the investment of the MNC. The MNC makes a decision how much to invest in the country 1 after considering the average profit it can get if it invests in other countries. In this model, the world average profit rate, *r*, is exogenously given. The marginal return for the MNC should be greater than or equal to the average return from other markets. If the world average marginal return is greater than the marginal return in the country 1, then the company will invest more in the places other than the country 1. If the marginal return from the country 1 is greater than the world average, then the MNC will invest more in the country 1 to maximize its profit. Therefore, the investment decision should satisfy the equation, $\partial \pi_f / \partial k = r$. From this equation,

$$k = \frac{1}{2}\left(a - k_d - w - t - r\right). \tag{3}$$

The equation (3) shows that if the world average marginal return goes up, then the amount of the investment in the county 1 will decrease up to the point that the marginal return from the country 1 is equal to the world average marginal return. The equation (3) also indicates that the amount of capital investment is decided by the tax rate, *t*. The government in the country 1 collects taxes from the domestic and the MNC for

redistribution. The tax collected from the corporations transferred to the labor. For the simplicity, in this model, the government directly transfers the tax revenue to the labor. Therefore, the labor income is the wage plus the redistribution from the government. From the labor's perspective, more investment is desired since the investment will produce more job opportunity (therefore, more wage) and the more tax revenue transferred to the labor. The first term in the equation (4) shows the amount of the wage the labor gets from the domestic firm and the MNC. The total labor wage is a product of w and the amount of capital invested in the country by the foreign and the domestic firms, $k_d + k$. The second term, $t(k_d + k)$, represents the amount of the tax transferred from the government.

$$\lambda = w(k_d + k) + t(k_d + k). \tag{4}$$

The government sets up the corporate tax rate, t. The government wants to maximize the amount of the profit of the domestic firm and the wage for the labor. The utility of the government is defined by the weighted average of the profit of the domestic firm (π_d) and the total income for the labor, total wage plus tax (λ). Then, the government's problem is

$$\max_t \theta\lambda + (1-\theta)\pi_d \tag{5}$$

where θ is a measure of the partisanship of the government. θ ranges between zero and one. A left-wing government weighs the total labor income more than the total profit of the firm. A right-wing government weighs the profit of the domestic firm more than the labor income. The partisan balance of power in the government is closer to the left as the value of θ becomes larger. To solve the problem, the first order condition should be satisfied.

$$\theta\frac{d\lambda}{dt} + (1-\theta)\frac{d\pi_d}{dt} = 0 \tag{6}$$

The tax rate satisfying the equation (6) is

$$t^* = k_d\left(1-\frac{1}{2\theta}\right)+\frac{1}{2}(a-r)-w \quad (7)$$

When $\theta = 1/2$, the equilibrium tax rate is determined by the world average marginal return, *r*, and the wage. The wage is fixed in this model. Therefore, the equilibrium tax rate for the moderate government in terms of the partisan balance of power is a function of *r*. If the world average marginal return increases, the equilibrium tax rate goes down. If *r* becomes smaller, then the government in the country 1 can take advantage of the decreasing return in the other countries by raising the tax rate while maintaining significant amount of the foreign investment. When the government is not neutral, the story is different. When $\theta > 1/2$, then the government is a left-leaned government. It weights total labor income more than the profit of the domestic firm. The first term in the equation (7) is positive. Therefore, t^* increases as the domestic investment, k_d increases. The left-wing government will raise the tax rate if the domestic investment increases. It will reduce the tax rate if the size of the domestic investment decreases. Since the size of the domestic investment is small, the country needs foreign investment to boost up the labor wage and the tax revenue. To attract the foreign investment, the government should offer a lower tax rate. However, if the domestic investment is large, then the left-wing government wants to set up a higher tax rate. If the size of the capital is large, then the tax revenue will be large, too. Moreover, the domestic capital is temporarily immobile. The left-wing government raises the corporate tax for the redistribution since it weighs the labor income more than the profit of the domestic firm. If $\theta < 1/2$, the government in the country 1 is led by the right-wing party. The first term in the equation (7) is negative. The equilibrium tax rate decreases as the amount of the domestic capital increases. The profit for the domestic firm will be bigger when the tax burden is reduced. Since the right-wing government weighs the profit of the firm heavier than the labor income, the government will reduce the tax rate.

What is the effect of the partisan shift in the government 1 on the equilibrium tax rate? From (7), we can get

$$\frac{\partial t^*}{\partial \theta} = \frac{k_d}{2\theta^2}. \tag{8}$$

Since $\partial t^* / \partial \theta > 0$, the equilibrium tax rate goes up if the partisanship of the government changes toward the left. This corresponds to the standard partisan politics argument: the left wing party prefers a higher corporate tax rate for the redistribution to the labor. However, the magnitude of the change is determined by the amount of the capital investment in the country. If k_d is small, then the switch of the partisanship from the right to the left will increase t^*. The amount of the change is small. However, if k_d is large, then the effect of the change of the partisanship from the right to the left will make a big difference. The figure 2-1 shows this point graphically. The dotted line represents the equilibrium tax rate for the right-wing government. The solid line shows the equilibrium tax rate for the left-wing government. The two dotted upward arrows represent the amount of change in the equilibrium tax rate when the partisan balance of power in the government shifts from the right to the left. In both cases, the equilibrium tax rate increases. When k_d is small, the magnitude of the change in the tax rate is small. If k_d continues to become small, the difference between the left and the right gradually disappears. When k_d is large enough, the magnitude of the change is significant. If the partisan balance of power in the government shifts from the right to the left, there will be a big increase in the equilibrium tax rate.

Intuitively, the result implies that the standard argument of partisan politics holds when k_d is large. Since at least temporarily fixed tax base is large, if the government increases the tax rate, then the amount of the redistribution to the labor increases significantly. As a result, the total income of labor increases, although the profit of the firm decreases. The left-wing government weights the labor income more than the profit of the firm. It raises the tax rate to promote labor income by redistribution. However,

when k_d is small, the standard partisan politics theory does not work well. When k_d is small, the tax base is small if the country 1 fails to attract more investment from the MNC. If the tax base is small, then the government is not able to collect enough tax to redistribute. If the government raises the tax rate in this situation, the MNC will invest in other countries to maximize its profit. With the small tax base, the amount of the tax revenue will be small. This will not change the total labor income significantly. In this situation, the left-wing government also tries to attract more capital from the MNC to increase the tax base and to boost up the wage. Therefore, the switch from the right to the left will not make a big difference when k_d is small. This is a different story compared to the standard partisan politics argument.

In the model above, there is no strategic interaction between the countries in terms of setting up the tax rate. Although *r* could be a function of the corporate tax rate in other countries, I assume that the average capital return in the rest of the world, *r*, is exogenously given. Now the strategic interaction between the competing countries will be modeled so that the interaction between the competing countries can be analyzed. The basic set up is similar to the one above. The governments in the country 1 and the country 2 decide the tax rates in the first stage. The MNC has decided to invest the physical capital *K* to country 1 and 2. Both countries are competing for internationally mobile capital investment from the MNC. It makes a decision how to allocate the capital investment between the two countries after considering the amount of the domestic capital investment and the corporate tax rates.

Following Haaparanta (1996), I consider *K* as exogenous. I focus on the way that the investment is divided between the countries competing for foreign capital investment. For simplicity, I assume two countries have the same technology of production but different capital endowments. The two countries are identical except for the tax policies, partisan balance in the governments, and the amount of domestic capital investment

temporarily immobile. Without the loss of generality, I assume that the country 1 is more leftist than the country 2 $(\theta_1 > \theta_2)$.

$$\begin{aligned} p_1 &= a - k_1 - k & p_2 &= a - k_2 - (K - k) \\ \pi_1 &= p_1 k_1 - w k_1 - t_1 k_1 & \pi_2 &= p_2 k_2 - w k_2 - t_2 k_2 \\ \pi_M^1 &= p_1 k - w k - t_1 k & \pi_M^2 &= p_2 (K - k) - w(K - k) - t_2 (K - k) \end{aligned} \tag{9}$$

K is the total amount of the capital investment the MNC is going to allocate between the two countries. k is the amount of capital invested in the country 1. The rest of the capital, K-k is invested in the country 2. p_i is the price of the good in country i. k_i is the amount of domestic investment in country i. Similar to the model above, k_i is assumed to be immobile temporarily. π_i is the profit function of the domestic firms in the country i. The firm should pay the wage, w, for the production of a unit of goods to the worker. t_i is the corporate tax rate in the country i. Only companies, both domestic and international, pay the tax to the government and the government redistributes the tax revenue directly to the labor. π_M^i is the profit function of the MNC in country i. The MNC allocates its capital between the two countries by making the marginal returns in the two countries equal. If the marginal return in the country 1 is larger than the one in the country 2, then the MNC distributes more capital to the country 1 up to the point that the marginal returns in both countries are same.

$$\frac{\partial \pi_M^1}{\partial k} = \frac{\partial \pi_M^2}{\partial (K - k)} \tag{10}$$

We can find the value of k satisfying the equation (10).

$$k = \frac{1}{4}(k_2 - k_1 - t_1 + t_2 + 2K) \tag{11}$$

The equation (11) shows that the increase of the tax rate in the country 1 reduces the amount of foreign capital invested by the MNC in the country 1. The tax rate in the country 2 is also relevant in the investment decision. If the tax rate in the country 2 goes up, then the amount of capital invested in country 1 increases since the country 2 requires

more tax burden. If k_1 is big compared to k_2, then k will be relatively small since the price of the good in the country 1 is already low due to the size of the domestic investment. If the country 2 has a large amount of domestic investment, k_1, compared to the country 1, then k will increase since the price of the good in the country 1 will be higher than the country 2. Now we define the total labor income in the same way as the model above.

$$\begin{aligned} \lambda_1 &= (k_1 + k)w + (k_1 + k)t_1 & \lambda_2 &= (k_2 + K - k)w + (k_2 + K - k)t_2 \\ g_1 &= \theta_1\lambda_1 + (1 - \theta_1)\pi_1 & g_2 &= \theta_2\lambda_2 + (1 - \theta_2)\pi_2 \end{aligned} \tag{12}$$

The labor gets the wage w per unit production of the good. The labor also receives the government transfer made possible by the redistribution of the tax revenue from the corporations. The government in each country solves the problem to maximize g_i. In the country 1, the problem is

$$\max_{t_1} \theta_1\lambda_1 + (1 - \theta_1)\pi_1 .$$

The first order condition is

$$\theta_1 \frac{d\lambda_1}{dt_1} + (1 - \theta_1)\frac{d\pi_1}{dt_1} = 0 \tag{13}$$

The solution satisfying equation (13) maximizes the utility of the partisan government.

$$t_1 = 3k_1\left(1 - \frac{1}{2\theta_1}\right) - \frac{w}{2} + \frac{k_2}{2} + K + \frac{t_2}{2} \tag{14}$$

Similarly, the government in the country 2 solves the following maximization problem:

$$\max_{t_2} \theta_2\lambda_2 + (1 - \theta_2)\pi_2 .$$

The first order condition is

$$\theta_2 \frac{d\lambda_2}{dt_2} + (1 - \theta_2)\frac{d\pi_2}{dt_2} = 0 \tag{15}$$

Solving equation (15),

$$t_2 = 3k_2\left(1 - \frac{1}{2\theta_2}\right) - \frac{w}{2} + \frac{k_1}{2} + K + \frac{t_1}{2}. \tag{16}$$

From the equation (14) and (15), t_1 and t_2 may converge since the reduction of t_1 will lead to the reduction of t_2 and vice versa. By plugging the equation (16) into (14), I can find the equilibrium tax rate in the country 1. By the same logic, the equilibrium tax rate in the country 2 can be found by plugging the equation (14) into (16).

$$\begin{cases} t_1^* = 4\left(1-\frac{1}{2\theta_1}\right)k_1 + 2\left(1-\frac{1}{2\theta_2}\right)k_2 - w + \frac{1}{3}k_1 + \frac{2}{3}k_2 + 2K \\ t_2^* = 4\left(1-\frac{1}{2\theta_2}\right)k_2 + 2\left(1-\frac{1}{2\theta_1}\right)k_1 - w + \frac{2}{3}k_1 + \frac{1}{3}k_2 + 2K \end{cases} \quad (17)$$

Consistent with the previous model with just one country, the effect of switch in the partisan balance of power in the government is magnified when the size of the domestic capital, k_i, is large. If the partisan balance of power moves from the right to the left, then the equilibrium tax rate will go up significantly. However, the size of the domestic capital is small, then the effect of the partisanship switch is minimal, since the left-wing government also pursue the strategy of low corporate tax rate to increase the tax base and to boost up the labor wage by attracting more foreign capital from the MNC. In addition to the interactive effect of the partisanship in the country, we also find that the partisanship in the competing country affects the equilibrium tax rate. If there is a switch from the left to the right in the country 2, then the equilibrium tax rate in the country 2 will be going down. As a result, the equilibrium tax rate in the country 1 will also decrease. However, the effect of the partisanship change in the competing country is dependent upon the size of the domestic investment in that country. When the size of k_2 is large, the effect of the partisanship change in the country 2 is also large since it will change the equilibrium tax rate in the country 2 significantly. However, if k_2 is not large, then the effect of the partisanship change in the country 2 on the equilibrium tax rate on the country 1 is minimal since there will not be a big change in the equilibrium tax rate of the country 2.

Both the first model (one-country model with mobile capital) and the second model (two-country model with mobile capital) predict that the effect of the partisan balance of power in the government is mediated by the size of the domestic investment. As the standard partisan politics argument implies, the equilibrium tax rate for the right-wing government will be much lower than the one for the left-wing government when the size of the domestic investment is large. However, when the size of the domestic investment is tiny, the difference between the left and the right turns out to be tiny, too. When the size of the domestic investment is small, the tax base is small if there is not enough foreign investment. From the tiny tax base, the government is able to collect tiny amount of tax revenue. If the government redistributes the tiny amount of tax revenue to the labor, it will not increase the labor income significantly. Therefore, the left-wing government jumps into the tax competition by reducing the equilibrium tax rate to attract more foreign investment to increase the tax base and to boost up the labor wage. At the same time, when the size of the domestic investment is small, the right-wing government is willing to accept a higher tax rate since the amount of tax the domestic firm pays is not significantly big since the domestic capital itself is tiny. Therefore, the equilibrium tax rate for the left-wing government and the on for the right-wing government converge as the amount of the domestic investment decreases. This seems to be the case that the partisanship does not matter as the globalization continues. With the theory proposed here, however, it may be due to the interactive effect of the partisanship and the size of the tax base. If the amount of the domestic investment increases, then the effect of partisanship will reappear again. To test the effect above, the following testable hypotheses can be generated from the predictions of the model. Chapter 3, 4, and 5 discuss the strategies of these tests and their results. The hypotheses are:

Hypothesis 1: the corporate tax rate under a left-wing government is higher than the tax rate under a right-wing government only if the size of the capital stock in the

country is large. To test this hypothesis, the empirical model includes the interaction term between the partisanship and the size of capital stock.

The policy interdependence predicted by the model can also be empirically tested. As stated in the following hypothesis, the model predicts that the tax rate of the country 1 is affected by the tax rate of the other country. If the tax rate of the country competing for the foreign investment goes up, then the country can increase the tax rate by taking advantage of the competitor's choice. However, if the competitor country reduces its tax rate, then the country also need to reduce its tax rate, too.

Hypothesis 2: If the tax rates of the competing countries go up, then the tax rate in the country also goes up. This hypothesis is tested by including a spatial lag term in the empirical model. The basic idea is that, the tax rate of the country 1 moves with the average corporate tax rate of the relevant countries. By constructing a spatial lag, the effect of the average tax rate of the relevant countries will be tested empirically. Detailed discussion about this will be followed in the next chapter.

The model makes a prediction that the equilibrium tax rate for the left-wing and the rate for the right-wing parties will converge as the size of the capital stock decreases. This prediction can be applied to the theory of veto players. If the ideal point of the partisan veto players converges, then the effect of the veto player on the tax reform will be minimal since the ideal points of most of the veto players will converge. However, when the ideal tax rates of partisan veto players are far away from each other, when k_i is large, then the left-wing veto player will block a proposal of neoliberal tax cut. In this situation, a country is difficult to adopt a tax cut in the corporate tax competition if there are a large number of veto player. The effect of veto player on the tax reform is significant here. The link between the conditional effect of veto player and partisan politics will be discussed in detail in the chapter 5.

Hypothesis 3: the effect of the veto players on the change of the tax policy is significant only when the size of the capital stock is large. This hypothesis is tested by the interaction term between the number of the veto player and the size of the capital stock.

In chapter 3, the first two hypotheses will be tested on the data of developed capitalist democracies. Many of the previous studies on globalization and tax competition focus on the developed capitalist democracies. I follow the strategy in chapter 3 in order to compare the emergent results with the finding of the previous studies. In chapter 4, the scope of the data is extended to include developing countries. In addition to increased generalization of the theoretical model presented above, the extended data allows me to check the robustness of the result obtained in the chapter 3. Furthermore by extending the scope of the data, additional political and institutional variables such as the level of democracy is also considered. In the chapter 5, the veto player hypothesis is tested empirically by looking at the effect of veto players on the change of the corporate tax rate.

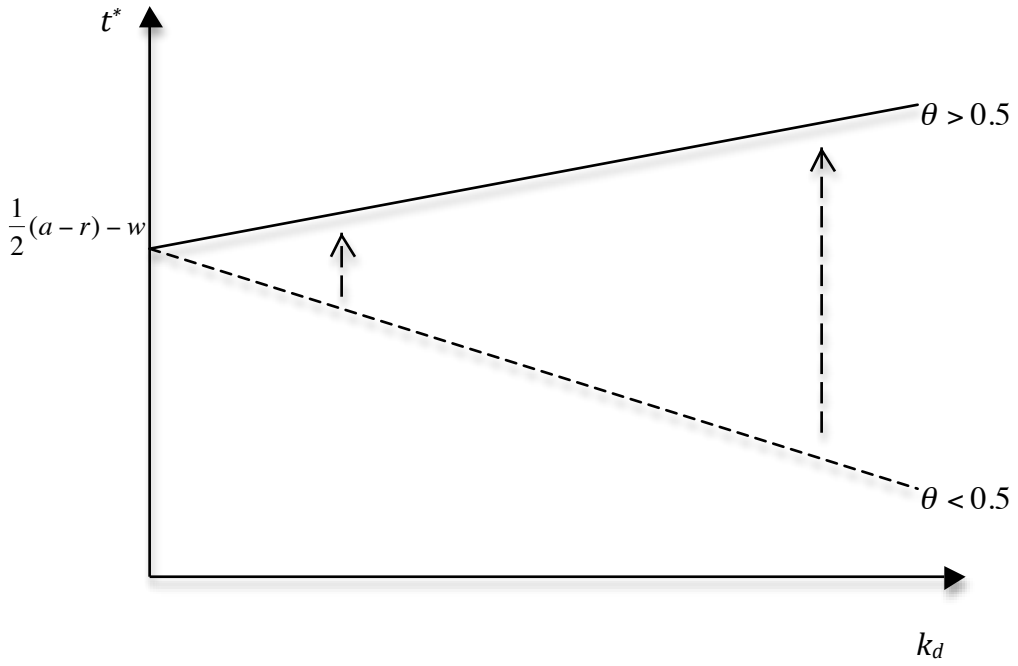

Figure 2-1 The equilibrium Corporate Tax Rate by k_d

Note: the dotted arrow indicates the magnitude of the change in t^* when the partisan balance switches from the right to the left.

CHAPTER 3
THE EMPIRICAL EVALUATION OF THE CONDITIONAL EFFECT OF PARTISAN POLITICS: TAX COMPETITION IN INDUSTRIAL DEMOCRACIES

The quantitative empirical analyses of the corporate tax competition have produced mixed results about the "race to the bottom" hypothesis. Garrett (1998), Swank (2002), Hays (2003), and Plümper and Troeger (2009) argue that empirical analysis does not support "race to the bottom" hypothesis since we do not observe a significant statistical negative association between globalization and corporate tax rates. However, Rodrik (1997), Genschel (2002), and Devereux, Lockwood and Redoano (2008) show that there is a negative relation between globalization and corporate tax rates. To explain this mixed result, various political variables are incorporated into the empirical model. The partisan balance of power in the government, one of the major explanatory variables in this project, is one of them. If the effects of partisan politics on the corporate tax policy is conditional upon the amount of the capital stock in the country, then it is not surprising that previous studies has not found a significant effect of partisan politics without including the interactive effects in the empirical models. The results in this chapter, using same data as the previous studies on the partisan politics and globalization, show that the partisan balance of power is significant when it is interacted with the amount of capital stock per capita.

Dependent Variable:
A Statutory Tax Rate on Corporate Income

It is difficult to quantitatively measure a country's corporate tax rate. As Slemrod (2004) says, there is no straightforward way to summarize a county's corporate tax system. In fact, the tax systems among the countries vary by a number of dimensions. Some countries have multiple-rate systems, where the tax rates applied to certain sectors

of the economy are different from the rates to other sectors, by geography or by industry. Some countries provide tax 'subsidies' to the manufacturing industries by granting lower corporate income tax rates. Some countries establish special economic zones within their territory with ultra low corporate tax rates to boost up the economy by setting up an industrial hub. Nationwide laws and tax systems may be suspended inside this special economic zone. The list of countries with special economic zones includes China, India, Poland, Russia, and South Korea. There may also be differentiation based on many other factors.

The most visible attribute of a corporate income tax structure is the statutory tax rate. It is the highest tax rate shown in the tax schedule on the taxable corporate income (Slemrod 2004; Basinger and Hallerberg 2004; Cao 2010). However, the statutory tax rate is not an ideal measure of the corporate tax burden since corporations do not pay top rates after various deductions and tax reductions such as tax holidays, inflation adjustments, deductibility of categories of business expenses, etc. To correct this limitation, a large number of studies have investigated the correct way to take all the missed holes in the statutory rate into account based on the concept of marginal effective tax rate on investment (Mendoza, Razin, and Tesar 1994; OECD 1991)

An effective tax rate is a ratio of the collected tax revenue to the aggregate tax bases. Calculated this way, an effective tax rate deals with the issue of various tax deduction, since the amount deducted is not included in the collected tax revenue. In this sense, the marginal effective tax rate is an advanced measure of tax disincentives for investment. Many previous studies in political science use an effective capital income tax rate as a measure of capital taxation (Hays 2003; Swank 2006; Swank and Steinmo 2002). However, as Slemrod (2004) points out, the calculation procedure is based upon a set of fairly "arbitrary" assumptions and does not consider certain features of some country's tax system. For example, an effective capital income tax rate does not reflect the enforcement of tax system. Since the calculation of an effective tax rate relies upon

the data on the tax revenue, which is already collected, regardless of the statutory rate. A country's effective capital income tax rate might be relatively low due to the government's tax reduction as a result of the tax competition for foreign investment. However, a country's effective capital income tax rate can be low due to the inability of the government to collect tax revenue regardless of the intention of the government. In this sense, an effective tax rate may not be a good measure of corporate tax rate to estimate the effect of tax competition for foreign investment since it may not reflect the effort of the government to attract foreign investment. In addition, the data of the effective tax rates are only available to a relatively small group of countries.

In this study, the statutory corporate tax rate is used as a measure of dependent variable, the corporate tax rate. In spite of the limitations described above, it has several advantages compared to other measures. First, Basinger and Hallerberg (2004) point out that the statutory corporate tax rate "plays an important signaling role about the tax burden of a country." Probably this is the reason why the statutory capital tax rate is in the middle of the political debates in many places although no firms pay the top statutory corporate tax rate. Second, the statutory corporate tax rate provides the baseline of the deduction. Some firms pay more than the effective tax rate. However, no firms pay higher than the top statutory rate. Third, the top statutory corporate tax rate is also more widely available compared to the effective tax rate. In the following chapters, the empirical analysis will be extended to the samples including developing countries where the data necessary to calculate the effective tax rate is not available. The statutory corporate tax rates are available from the *OECD Tax Statistics* 2010 and *World Development Indicators 2011* (*WDI*) by World Bank. Table 3-1 shows the descriptive statistics of the statutory corporate tax rate.

In this chapter, the dependent variable is the statutory corporate tax rates in the industrial democracies from 1981 to 2006. The list of industrial democracies includes 18

countries[3]. The countries are chosen in the same way as the previous literature (Swank 1998, 2002, 2006; Swank and Steinmo 2002; Hays 2003) to make a comparison. The observation after 2007 is not included because the partisanship data, a major explanatory variable, from Swank (2006) is available up to the year of 2006. Table 3-1 shows the trend of change in statutory corporate tax rates. In both industrial democracies and OECD members, the rates are decreasing over time, while the mean of the tax rates of industrial democracies are slightly higher than the mean of the tax rates of OECD members. Note that the standard deviation of the tax rates in industrial democracies and the standard deviation for OECD members are similar although OECD members include 34 countries, twice larger than industrial democracies.

Independent Variables: Partisanship and Capital Investment

The major independent variable is the partisan balance of power in the government. It is measured by the proportion of the seats taken by the left-wing party (or parties) in the legislature. There are many alternative measures of the partisan balance of power in the government, i.e. the partisanship of the executive. *Partisanship,* the ratio of the seats held by left-wing parties to the total number of seats is used in this study since the decision about the tax rate is finally made in the legislature although the executive branch can make a proposal. The data of the share of seats by the left-wing parties in industrial democracies is taken from Swank's dataset (Swank 2006). This data is used in many other previous studies.

Another important independent variable is the amount of capital investment in each country for each year. This variable is important since partisanship and capital investment will construct an interaction term to test the conditional effects of partisanship on the corporate tax rate. To measure the amount of the capital investment in a country,

[3] The list of the industrial democracies included in this analysis is available in the Table 3-1.

Gross Capital Formation data from *WDI* is utilized. Gross Capital Formation (GCF), also known as Gross Domestic Investment, consists of outlays in addition to the fixed assets of the economy plus net changes in the level of inventories[4] (World Bank 2010). GCF is normalized by the number of the total labor force in each country (employed and unemployed) to measure the amount of capital invested per capita. In the empirical model, *partisanship* is interacted with *capital*. The partisan theory of tax competition developed in the previous chapter predicts that when the share of the left-wing party increases, the corporate tax rate goes up if GCF per capita is large. However, when the amount of capital investment per capita is small, the increase of the share of the left-wing party does not increase the corporate tax rate significantly. In this situation, a left-wing party prefers to jump into the tax competition to attract more foreign investment to extend the tax base. Therefore, the sign of the coefficient for *partisanship* is expected to be negative but the sign of the coefficient for the interaction term between *partisanship* and *capital* is positive.

The variables measuring corporatism and consensus democracy are also included since domestic political and economic institutions mediate the effects of globalization (Garrett 1998; Swank 2002; Hays 2003). Following the previous studies, the data from Lijphart and Crepaz (1992) is used. Hays argues that consensus democracies tend to have higher corporate tax rates compared to majoritarian system. In consensus democracies, the influence of the right-wing pro-capital parties is partly guaranteed due to the consensual nature of the system. However, in the majoritarian system, the labor is dominant since the median voter always has a pro-labor preference since the number of voters with a pro-labor preference is always larger than the number of voters with a pro-

[4] The fixed assets include land improvements (fence, ditches, drains, and so on), plant, machinery, and equipment purchases. They also include the construction of roads, railways, and the like, including schools, offices, hospitals, private residential dwellings, and commercial and industrial buildings. Inventories are stocks of goods held by firms to meet temporary or unexpected fluctuations in production or sales, and "work in progress" (*WDI* 2010).

capital preference. As a result, a country with the majoritarian system tends to have a higher corporate tax rate than a country with the consensus system. Hays included the consensus democracy variable interacted with capital openness in his empirical model. In this study, the same methodology and control variables are used. Garrett (1998) argues that the combination of the left-wing party and the corporatist institution is politically sustainable and economically successful in spite of the pressure from the globalization. A country with corporatism is expected to have a higher corporate tax rate when the left-wing parties hold political power. Therefore, the variable *corporatism* is interacted with *partisanship* in this model. A well-organized labor union is an essential for the corporatist institutions work. In a corporatist institution, important economic decisions are made by the agreement between the government, the business, and the labor. Therefore, in the empirical model, the labor union density, which basically measures the amount of labor forces organized by the labor union, is also included.

Various economic variables are incorporated into the model as control variables. First, trade dependency is included in the empirical model. The variable *tradedep* is constructed by the total trade, exports and imports as a percentage of Gross Domestic Product. This is one of the most commonly used indicators to capture a country's economic integration to the global economy. If an economy is integrated into the global economy in terms of the trade, it is expected that the corporate tax rate is low due to the openness of the system. In addition, a lower corporate tax rate will promote the competitiveness of the product of the country in the export market. An indicator of financial openness to the international market is included as a measure of capital mobility. Following Cao (2010), Chinn-Ito Financial Openness Index is used in this study. This measure covers most of the country from 1981 to 2009. In addition to the coverage, the Chinn-Ito Index includes Quinn's capital openness measurement (Quinn and Inclán 1997), which is one of the widely used measures of capital openness in political science (Chinn and Ito 2008). A country with high level of capital openness is

likely to have a low corporate tax rate since the capital can move in and out with relatively small costs. EU membership is also controlled since the capital moves around more easily within EU member countries. Following Hays (2003), it is a dummy variable and a country is counted as a member of EU if the country belongs to EU after the Single European Act 1986.

The corporate tax rate is a part of the entire government tax system. Therefore, the variables related to the government tax revenue are included as control variables. First, the total government debt, *debt*, is included. The debt is based only upon the federal or central government debt excluding regional government debt since the major explanatory variable in this study is the partisan balance of power in the central government. A government with a large amount of debt is expected to increase the total tax collection. However, raising tax rates do not always guarantee the larger tax revenue according to the assumptions of the theoretical model in this study. When the tax base is small, raising tax rates does not increase the total tax revenue significantly. In fact, this is exactly the argument made by Mr. Richard Burton, the Irish minister of enterprise in the chapter 1. Therefore, it is not clear whether the debt increases the corporate tax rate or not. However, it is included as a control variable. The variable *revenue* measures the total tax revenue in the central government as a percentage of gross domestic product. A high ratio of tax revenue to GDP implies that the country has a big government. If a country has a big government, then it is likely to have a high corporate tax rate, too.

The variables that capture the domestic economic structure and performances are incorporated into the empirical model as control variable. These variables include GDP growth, inflation, unemployment, age dependency, and total labor. Age dependency is measured as the proportion of population that are older than 65 or younger than 15. It is expected to push high level of government spending and taxation since the old and the young is not a working population. The source of all the independent variables related to

economic characteristics, if not specified above, is *World Development Indicator 2010* (World Bank). Table 3-2 shows the descriptive statistics for the independent variables.

Empirical Strategy: Regression with Spatial Lag

The basic idea of corporate tax competition is that the countries in the world are connected and interdependent in some ways, i.e. geography, policy networks, etc. If a country reduces its corporate tax rate, then the competing country will reduce its tax rate as a response, according to the prediction of the theory of tax competition. In this sense, empirically, the corporate tax competition can be modeled as a policy diffusion. Recent research on policy diffusion and interdependence frequently utilizes some type of spatial models. There are different types of spatial models (Anselin 1988; Fotheringham, Brunsdon, and Charlton 2002). Compared to spatial error model, spatial lag model, also known as spatial auto regressive model (Beck, Gleditsch, and Beardsley 2006), is conceptually more appropriate to the study of policy diffusion. In a spatial error model, the observations are interdependent through some unmeasured variables that are correlated (Beck, Gleditsch, and Beardsley 2006; Ward and Gleditsch 2008). However, a spatial model assumes that the dependent variable is affected by the value of the dependent variable in connected units. In other words, a country's policy choice on the dependent variable is influenced by the policy choice of nearby countries. In this sense, following Cao's approach (2010), a spatial lag model is used in this analysis:

$$\mathbf{y} = \mathbf{X}\beta + \rho\mathbf{W}\mathbf{y} + \varepsilon \quad (3\text{-}1)$$

where $\mathbf{y}$ is the dependent variable and $\mathbf{X}\beta$ is the linear domestic covariates[5]. The major independent variables and other control variables are included here. Since we use a pooled time series data, fixed country and year effects are included here. Fixed year effects are important because we want to control the effects of the common external

[5] I directly follow the modeling strategy of Cao (2010), which is based upon the spatial lag model described in Ward and Gleditsch (2008).

shocks to identify the effect of policy interdependence among countries. Country fixed effects are also used since it controls cross-sectional heterogeneity.

In equation (1), ρ represents the overall strength of policy interdependence. $\mathbf{W}$ is a connectivity matrix in cross sectional context. Each element of the connectivity matrix captures the relative connectivity or influence from one unit to the other. In the cross-sectional-time-series context, there is a connectivity matrix for a given year. It can vary over time, if the connection changes over time. However, it can be same over the year if the connection does not change, i.e. geography. $\mathbf{W}$ in (1) represents a connectivity matrix in a given year. $\mathbf{Wy}$ gives a weighted average of other observations in a given year. The weight is specified by the connectivity matrix. For example, if we want to model the dependent variable connected by the geography, $\mathbf{Wy}$ gives us the weighted average of the corporate tax rates of the countries nearby, defined by the connectivity matrix. All the connectivity matrices used in this study is row-standardized (Ward and Gleditsch 2008).

To estimate the spatial lag model in equation (1), there is a problem to be solved: both side of the equation (1) contains the dependent variable $\mathbf{y}$ at the same time. Estimating by Ordinary Least Squares (OLS) would cause simultaneity bias (Anselin 1988; Beck, Gleditsch, and Beardsley 2006; Franzese and Hays 2008; Cao 2010). Beck, Gleditsch, and Beardsley suggest a simple solution. Lagging the spatial lag $\mathbf{Wy}$ by 1 year and use OLS to estimate the model. By doing this, the original spatial model in (3-1) can be modified to the following form:

$$y_{i,t} = \mathbf{x}'_{i,t}\beta + \varphi y_{i,t-1} + \rho \mathbf{w}_i \mathbf{y}_{t-1} + \varepsilon_{i,t}. \qquad (3\text{-}2)$$

In (3-2), the connectivity matrix becomes $\mathbf{w}_i \mathbf{y}_{t-1}$. $\mathbf{w}_i$ is the *i*th row of the connectivity matrix. By lagging the spatial lag, we impose a restriction that the change of corporate tax rate in the countries connected to the country *i* takes time, 1 year in this case, to affect the tax rate of the country *i*. Although 1 year can be arbitrary, the assumption that the policy diffusion takes time makes sense since changing tax policy

takes time in practice. To estimate the model with OLS, the error term $\varepsilon_{i,t}$ should not be serially correlated. If this condition is violated, it is likely that the estimation results are affected by the simultaneity bias (Beck, Gleditsch, and Beardsley 2006; Franzese and Hays 2008). The solution to this problem, temporally lagged dependent variable, $\varphi y_{i,t-1}$, is included in the right-hand side. Although including the lagged dependent variable helps to eliminate serial correlation, the existence of the serial correlation will be tested using Lagrange Multiplier test. This approach is not a perfect solution for the simultaneity bias, but it is a strategy commonly applied in the study of policy diffusion. It gives us a convenient, flexible, and unbiased estimation for spatial effects by allowing us using OLS if the underlying assumptions are met (Elkins, Guzman, and Simmons 2006; Lee and Strang 2006, Cao 2010).

Connectivity in Geography and FDI structure

To estimate the model in equation (3-2), the connectivity matrix needs to be defined. One of the most popular approaches in the policy diffusion studies is geographic proximity. According to this view, geographically connected or close countries are much more interdependent with each other compared to the countries with long distance. In the context of the tax competition, a country's corporate tax rate is affected by the corporate tax rates of the countries geographically located nearby. Hays (2003) and Cao (2010) take into account this connectivity mechanism when they estimate their empirical models of capital tax competition. Elkins, Guzman, and Simmons also point out that the policy diffusion is more likely to be observed among the geographically close countries.

This claim sounds plausible in the context of tax competition. In addition to the learning effect and the policy diffusion to the neighboring countries, there are a few reasons for the international investors to consider alternative investment destination geographically close to each other. Geographic distance is an important factor for firms to make a business decisions since the location factor is an essential variable in calculating

the over all cost of production and marketing. According to the previous literature reviewed above, there is a link between the behavior of the firms and the policy of the government. If the geography is an important factor for the firms, the government should take this into account when the governments respond to the policy interdependence induced by the multinational enterprise. For example, if a firm plans to make an investment decision for the Central European market, the geographical proximity to the market or to the clients should be an important factor. The firm will choose the investment destination with the best business environment among the countries geographically close to the market. To attract the investment, geographically proximate countries compete with each other. Firms also build up their production facilities in the neighboring countries for serving domestic market, if they can significantly reduce the production costs by taking advantage of tax incentives and low-cost labor forces. These firms can reduce the cost without paying large amount of transportation cost by choosing geographically proximate countries as investment destinations. According to this reasoning, it is reasonable to claim that a country's corporate tax rate is more likely to be affected by the geographically proximate countries than the countries far away.

The connectivity matrix for geographic proximity is constructed using the data (Gleditsch and Ward 2001) and the procedure by Ward and Gleditsch (2007). Hays (2003) uses the geographic contiguity to define the connectivity in his work on the tax competition among industrial democracies. In this work, the two countries are connected if they share the border. Cao (2010) uses various measures to define geographic connectivity. He uses the distance between the capital cities, the minimum distance between the countries (Gleditsch and Ward 2001), and the distance variable from the data set, the Correlates of War. Cao (2010) makes the point that when we study the policy interdependence, the minimum distance approach is more appropriate compared to the distance between the capital cities. Measuring the connectivity by the distance between the capital cities fails to take the size of the countries into account. The US and Canada

share a common border. The two countries are expected to have a significant level of policy interdependence. However, according to the distance between capital cities approach, the US and Canada is far away because the distance between Washington D.C. and Ottawa is fairly long. The minimum distance approach is a better measure in this case. The contiguity measure can be incorporated into the minimum distance approach since the contiguity measure is an extreme case because the countries are contiguous when the minimum distance between the two countries is zero. For these reasons, the minimum distance approach is used to measure the policy connectivity among countries. To set up the connectivity matrix, $\mathbf{W}^{dist}$, a threshold value for the minimum distance should be set up. If the minimum distance is set up as *m* km, then $w_{i,j}^{dist}$ in a given year is equal to 1 if the distance between the country *i* and *j* is smaller than *m* km. Otherwise, $w_{i,j}^{dist}$ equals to zero. By definition, $w_{i,j}^{dist} = w_{j,i}^{dist}$ and $w_{i,i}^{dist} = 0$. The *i*th row of the connectivity matrix, $\mathbf{w}_i$ for a given year looks like (1, 0, 0, …, 1, 1, 0). For the estimation, $\mathbf{W}^{dist}$ is row standardized so that the total weights in each row sum to one. The connectivity matrix $\mathbf{W}^{dist}$ makes the spatial lag term $\mathbf{w}_i\mathbf{y}_{t-1}$ in (3-2) as a weighted average of the corporate tax rates of the countries geographically connected to the country *i*. In his study on tax competition, Hays (2003) uses the contiguity as a threshold. Setting up the threshold minimum distance as zero is sensible but there is no rigorous theoretical justification for it (Ward and Gleditsch 2008). Is it reasonable to argue that the corporate tax rate of the countries sharing the borderline matters but the countries away by 100 km does not? In this study, Cao's approach (2010) is adopted. The connectivity matrix with various values of the minimum threshold distance will be estimated empirically. By this way we can find out what value of the minimum distance threshold is empirically significant, if there is any policy interdependence between the geographically connected countries.

The connectivity matrix does not need to be restricted to the 'spatial' characteristics. As Beck, Gleditsch, and Beardsley (2006) argue, the policy network can

be another mechanism that explains with whom the countries are interdependent considering the mobility of capital nowadays. The cost of moving capital across the borderline has become inexpensive compared to the past. The tax policy of the countries with significant amount of geographic distance can be interdependent if they compete for the same source of foreign investment. Recall the example of the Ireland in the chapter 1. Why do many member countries of EU care about the ultra low corporate tax rate in Ireland, although many countries are geographically not that close to Ireland except a few neighbors? This implies that there should be a mechanism of policy interdependence other than the geographic proximity. Cao (2010) compares the structural equivalence of inward portfolio investment, export, and inflow of foreign direct investment among countries. The basic idea is that a country's corporate tax rate is more sensitive to the tax rate of the countries with similar economic structure. Since the countries with similar economic structure tend to look for the similar source of investment, the level of policy interdependence among them is likely to be higher than the interdependence with the countries with a different economic structure. Among them, the structural equivalence of the inward portfolio investment and that of the inward foreign direct investment are the good candidates for the connectivity mechanism relevant to the corporate tax competition. It is plausible to argue that countries competing with each other for the foreign direct investment from the similar sources are more likely to be involved in a tax competition. Same logic can be applied to the portfolio investment, too. Due to the data availability, only the structural equivalence of FDI will be used to define connectivity matrix in this chapter.[6] The connectivity matrix for foreign direct investment is constructed in a similar way to the geographic proximity case. For OECD countries, the

[6] Portfolio investment data is available from 2001 (UNCTAD) while the corporate tax data covers from 1981 to 2006 for the 18 industrial democracies. If the connectivity matrix constructed by the portfolio investment data is used, then the observations from 1981 to 2005 need to be excluded from the analysis.

data on FDI inflow by partner[7] is available from 1985 to 2009 from OECD (2010b). The data set identifies the amount of inward and outward capital by the partner country. Since the tax competition for foreign investment is a major variable in this study, the data on the inward FDI is used. From the data, we can find $fdi_{i,j}$, the amount of foreign direct investment from the country *j* toward the country *i* in a given year. Then, a vector, $\mathbf{fdi}_i$, can be obtained. Each element of this vector is the amount of foreign direct investment from other countries. To calculate the structural equivalence score, I calculated the Pearson correlation of $\mathbf{fid}_i$ and $\mathbf{fdi}_j$ in each year. By this way, the structural equivalence score between the two countries is obtained (Cao 2010). The structural equivalence score between the country *i* and *j* is $w_{i,j}^{FDI} (= w_{j,i}^{FDI})$. This score will give us the vector $\mathbf{w}_i^{FDI}$. Same as the procedure described above in the case of geographic proximity, a row-standardized connectivity matrix $\mathbf{W}^{FDI}$ is constructed. Using this connectivity matrix, the 'spatial' lag for foreign direct investment is included in the empirical model.

Empirical Test of Interactive Effect of Partisan Politics

The equation (3-2) is estimated using OLS method with the fixed effects.[8] The estimation results for the baseline model (without spatial lag) and the model with spatial lag will be discussed. The table 3-3 shows the estimation results[9]. Note that in the model 2 and 4, 200km minimum distance was used for the threshold value for the connectivity matrix. In model 3 and 4, 0.7 was used for the threshold of structural equivalence value for the connectivity matrix. We will discuss this choice in detail later.

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[7] The partner countries include not only OECD members but also non-OECD members. Cao (2010) constructed the connectivity matrix for FDI using UNCTAD data and OECD data both for the developed and for the developing economy from 1998 to 2006. In this study, I used OECD data set since this covers longer periods for the developed economies.

[8] The fixed effects for country and year are included in the model but not reported in the table 3-3.

[9] I run the Lagrangian multiplier test for model 2-4 to check the existence of the simultaneity bias. The result shows that there is no serial correlation in the error term and therefore no simultaneity bias in the estimation.

The coefficients for the major variables are stable throughout the model. From model 1 to model 4, the coefficient for the *partisanship* is negative and significant The coefficient of the interaction term between *partisanship* and *capital* is positive. This implies that the effect of partisanship is conditional upon the amount of capital investment in the country. The negative effect of the partisan balance of power toward the left is mitigated when the amount of capital in the country becomes larger and larger. And at last, the effect of the strong left-wing parties in the Congress is positive when the capital investment is abundant in the country. Since the magnitude of the effects of the partisanship changes as the amount of the capital investment changes, the result is presented graphically. With the variance-covariance matrix of the coefficients, the standard error of the marginal effect of the partisanship in each point is calculated (Brambor, Clark, and Golder 2006; Kam and Franzese 2007).

The figure 3-1 and 3-2 shows the marginal effect of *partisanship* for each value of the capital investment[10]. The value on the line represents the marginal effect of partisanship for each value of *capital*. The x-axis of the graph is the amount of *capital* in the country. The y-axis indicates the marginal effect of *partisanship*. In both figure, it is clear that the value of the marginal effect is negative when the value of *capital* is small and the marginal effect is positive when the value of *capital* is large. The upper bound and the lower bound represent 10 percent confidence interval for each value of *capital*. In figure 3-1, the standard error is relatively large. The marginal effect is positive and statistically significant when the size of *capital* is large. However, when the size of *capital* is small, the marginal effect is negative but statistically not significant. In figure 3-2, the marginal effect is significant in larger area. When the size of *capital* is large, the marginal effect of *partisanship* is positive and statistically significant. When *capital* is

[10] Figure 3-1 and 3-2 are drawn from the result of model 2 and model 4. The graph for the model 1 is omitted since it is a baseline model without the spatial lag. The graph for the model 3 is also omitted since the results are similar to model 4 in terms of the marginal effect of *partisanship*.

small, the marginal effect is negative and statistically significant. In both figures, when the amount of *capital* is moderate, the effect of *partisanship* is around zero. This result supports the hypothesis driven by the new theory of partisan politics and tax competition. Different from the standard partisan theory that assumes that left-wing parties always prefer higher tax and redistribution, the new theory claims that left-wing parties prefer lower tax rates compared to its counterpart when the tax base is tiny. An interesting point is that the coefficient of partisanship and capital turn out to be statistically not significant when the model is estimated without interaction term between them (see table 3-4). As discussed in the chapter 1, many studies claim that the effect of partisan politics has disappeared with the globalization. Due to the increasing capital mobility across the borderline, the left-wing parties are not able to pursue their agenda any more. Capital can fly out to other countries for more generous business environment (Hart 2009; Moses 1994; Potrafke 2009; Strange 1995). The analysis in this chapter suggests that the argument for the "death of partisan" may not account for the interaction effect between the partisan politics and the amount of capital stock.

Other variables for political and economic institutions are not significant in general throughout the models in the table 3-3. This indicates that the hypothesis from Hays (2003) and Garrett (1998a, 1998b) is not supported in this model specification. Corporatism is not significant in model 1-3, and is statistically significant at 10% in model 4, although the sign is negative in all four models. Corporatism is incorporated here with the interaction with partisanship. The coefficient of corporatism without the interaction disappeared in the model due to the fixed year effects. Corporatism is included with the interaction for two reasons. First, Garrett (1998) argues that the left-wing politics is able to pursue its political agenda under the pressure from the globalization when combined with corporatism. Therefore, corporatism is expected to have a positive effect on the corporate tax rate when combined with corporatism. The negative sign of the coefficient indicates the opposite direction. In this setting, the

combination of the left-wing politics and corporatism reduces the tax rates, although only statistically significant in model 4. Second, Hays (2003) includes the 'constant' institutional variable with the interaction term in the exactly same setting. In his study of capital taxation, corporatism and consensus democracy are included with the interaction.

The coefficient of consensus democracy, also interacted with *partisanship*, is also not significant from model 1 to model 4. In every model, the sign of the coefficient of consensus democracy is positive. Hays (2003) argues that the consensus democracies tend to have higher capital tax rates compared to the majoritarian system since the governing coalition always includes some faction of pro-capital parties. As a result, the preference of the capital owners is somewhat represented in the consensus system. According to this logic, a consensus democracy with a left-wing majority in the legislature is likely to have a lower corporate tax rate than a majoritarian system with a left-wing majority. In the majoritarian system, Hays (2003) points out that the left-wing majority dominates the policy decisions. According to this argument, the coefficient of the consensus democracy is positive. The result in the table 3-3 shows the opposite, although statistically not significant.

Note that the coefficients of the spatial lags are not significant. As shown in figure 3-3, the corporate tax rate in country *i* is positively correlated with the countries geographically close to it, within 200 km in this case. However, in the regression result in the table 3-3, when the domestic variables are added to the analysis, the spatial lag for geographic proximity is not significant in model 2 and 4. Since it is difficult to theoretically justify a certain threshold value in advance, the analyses were conducted with various values of the threshold minimum distance. Figure 3-4 shows the confidence intervals of the spatial lag term defined by the minimum distance threshold. From 0 to 1000km, all the coefficients show positive sign, but are not statistically significant consistently. All the confidence intervals overlap with $x=0$ line. This shows that the insignificance of the spatial lag term in the model 2 and 4 is not a result of the arbitrary

selection of the threshold minimum distance value. This result is different from the previous studies on the capital tax competition (Hays 2003, Cao 2010).

The spatial lag defined by the structural equivalence of FDI inflow is significant in model 3, but in a strange direction. The sign of the coefficient is negative. This implies that a county's tax rate is reacting to the tax rate of the country with a similar structure of FDI inflow, but reacting in an opposite way. According to the logic of the tax competition, one would reduce tax rate if his competitor reduces its tax rate. As a result, the tax rates of the two competing countries move together with the same direction. The coefficient of the spatial lag is expected to be positive. The result in the table 3-3 is the opposite of this expectation. With the spatial lag of FDI inflow structure, the same exercise was done. The figure 3-5 shows the confident interval of the spatial lag term defined by the structural equivalence of FDI inflow. The coefficient is consistently negative and not statistically significant in general except a few values of the threshold equivalence. In Cao's analysis (2010), the spatial lag defined by FDI inflow is insignificant, too. The weighted average of the corporate tax rate of the countries competing for the foreign direct investment from the same countries is expected to have a strong effect on the tax rate of a country. However, the result is significant but in the opposite direction. Cao blamed the quality of the data since his observation included large number of developing countries. However, in this project, the sample is composed of industrial democracies and there is almost no missing data after 1985 in terms of the structural equivalence score of FDI inflow. There is no clear answer for now, but this point should be studied later. [11]

[11] According to the analysis, the domestic variables explain the patterns of tax policy of a country. The effect of tax competition with foreign countries seems to be weak and insignificant. For this reason, the long-term feedback effect of tax rate of foreign countries is not calculated here. Instead, we focus on the short-term effects of domestic covariates.

In the previous studies on the tax competition, the spatial lag was a critical factor explaining the pattern of the tax competition. The critical difference between these studies and the project here is whether the measure of capital stock is included or not. Previous studies do not include the direct measure of capital stock although they included other measures, such as GDP per capita. Hay's study does include capital endowment but he only controls for the initial capital endowment. In this study, the amount of capital stock is included to measure the size of the tax base. The most critical factor leading to the corporate tax competition is the fear against the capital flight. If all the capital moves out of the country and the country fails to attract any foreign investment, then the government is not able to collect tax revenue to fund its project. Therefore, both the left-wing and the right-wing parties are expected to be sensitive to the size of the tax base. A left-wing government should be even more sensitive in a given circumstances since it needs to collect taxes for the redistribution. In this sense, although the effect of the weighted average tax rate by geographic proximity is not significant, it does not imply that there is no international tax competition. Countries are not reacting directly against the tax rate of the competitors. Instead, the tax rate is a function of the size of the tax base and the partisan balance of power in the country. Some portion of the size of the tax base today might be a result of the tax competition with foreign competitors yesterday. If a country was successful in mobilizing investment yesterday, then the country is relatively free from the pressure from the tax competition with foreign countries today.

The control variables-the effects of unemployment, total tax revenue, and the amount of labor force available-goes with the common prediction. High unemployment rate leads to the reduction of corporate tax rate to promote investment for the job creation. If a country has large total tax revenue, it is reasonable to expect the corporate tax rate to be high. If a country has a large labor force, it will be an attractive destination of investment. The country can take advantage of this strength by increasing the corporate tax rate. The firms can overcome the tax burden by utilizing the abundant labor

force. The coefficient of the tax on goods and services is negative and insignificant. Previous studies (Garrett 1998a; Rodrick 1997; Mendoza and Tesar 2005; Slemrod 2004; Swank 2006; Swank and Steinmo 2002) argue that a government increases the tax on the immobile factors while reduces the taxes on the mobile capital with the globalization. Throughout the model 1 to 4, the tax on goods and services, that includes VAT and sales tax, has a negative effect on the corporate tax rate, but the effect is not statistically significant.

Another interesting point in the result is the effect of economic openness. A country's economic openness is measured by the two variables, capital openness and trade dependency. Simple bivariate analysis between the economic openness and the corporate tax rate gives us the negative relationship. If your economy is more open, then the corporate tax rate is lower. If the capital market of a country is freer than the other countries, then the country is expected to have a lower corporate tax rate since the capital can move out easily. However, the effect of the capital openness and trade dependency is insignificant after the domestic variables are included in the analysis.

Illustrating Examples: Germany

There are some illustrative examples in the dataset used in this research. Those examples can be explained by the theoretical framework developed here, but conflict with alternative theories. I will briefly describe one example: Germany. The corporate tax rate in Germany was reduced during the period under the control of Chancellor Gerhard Schröder, a member of the Social Democratic Party of Germany (SPD). From the figure 3-5, we can find out that the amount of capital per capita and the corporate tax rate moves together while the partisan balance of power remains stable. As the amount of capital stock decreases, the corporate tax rate also decreases. In this period, 1977-2006, the top corporate tax rate in Germany went down in spite of the fact that Germany had a leftist government.

Second, the recent discussion on the corporate tax rate in the US is also illustrative, although this is not included in the dataset used in this study. President Obama proposed a corporate tax cut in his State of the Union address in January 2011. After the subprime mortgage crisis, the US was running short of investment since the bubble had gone. Although President Obama is relatively left in the context of the US politics, he argued that the US needs a corporate tax cut.

All these examples make sense according to the framework developed in this study. Even a left government reduces corporate tax rate when the tax base is shrinking. However, alternative theories are not able to explain these examples. The standard partisan politics argument cannot explain these examples, since the standard argument assumes a left government always prefers higher corporate tax rate for the redistribution (Garrett 1998). Institutional theories, i.e. Hays (2003), cannot explain this change since institutions do not change over time frequently but corporate tax rate does.

Conclusion

I developed a simple model of the partisan politics and the tax competition to illustrate how underlying economic structures and partisan politics shape the corporate tax policies. The empirical analysis indicates that the effect of partisan politics is conditional upon a country's capital endowment. The effect of partisan politics is still significant in spite of the pressure from the globalization. Previous studies claimed the death of the partisan politics and moved to the study of the political and economic institutional characteristics. The relationship between the institutional structure and economic outcome is a fascinating area of study. How does consensus democracy affect tax policy? How does corporatism work in a globalized world? The institutional approach is a growing area of study. But this approach has a few limitations. First, it is difficult to explain the cross-time variance of the economic outcomes with a relatively stable institutional structure, while the institutional study is extremely useful when we try to

identify the cross-national variance. Second, some of the institutional characteristics scholars are interested in, i.e. corporatism, consensus democracy, is developed and wide-spread in the Europe[12]. Unfortunately, these characteristics are difficult to apply to the rest of the world since it is not easy to observe the Western European style corporatism and consensus democracy in the developing world.

Compared to the institutional approach, the partisan politics has some advantages. First, the partisan politics has dynamics. It changes over time. Therefore, it is useful when we identify the change of the tax policy while the institutional structure remains same. Second, the concept of partisan politics is widely applicable to the world including developing countries. Therefore, in the following chapters, the patterns of the corporate tax competition will be analyzed with the observation including the developing countries as well as the developed democracies.

[12] Of course there are many other institutional characteristics applicable to all over the world, i.e. majoritarian electoral system vs. proportional system.

Table 3-1 Mean and Standard Deviation of Corporate Statutory Tax Rates

Year	Industrial Democracies		OECD	
	Mean	Std. Dev.	Mean	Std. Dev.
1981	48.77	7.70	47.52	7.82
1982	49.29	7.21	48.03	7.54
1983	49.23	7.01	48.19	7.52
1984	48.52	7.17	47.71	7.38
1985	48.86	7.26	48.18	7.45
1986	47.97	7.05	47.23	7.05
1987	47.46	7.13	46.64	7.09
1988	44.52	8.92	44.19	8.43
1989	42.97	9.29	42.66	8.58
1990	41.50	7.42	41.05	6.83
1991	39.68	7.80	39.56	7.13
1992	37.99	8.40	37.85	7.33
1993	36.89	8.77	37.63	7.65
1994	36.81	8.34	37.09	7.07
1995	37.23	8.56	36.64	8.15
1996	37.33	8.44	36.63	8.04
1997	37.54	8.69	36.62	8.19
1998	36.14	7.42	35.61	7.20
1999	34.97	6.84	34.76	6.75
2000	34.53	6.98	32.59	7.09
2001	33.00	5.95	31.65	6.33
2002	32.54	6.34	30.55	6.75
2003	31.82	6.60	30.06	6.68
2004	31.53	6.34	29.23	6.99
2005	30.40	6.72	28.16	6.83
2006	30.25	6.68	27.51	6.78
2007			26.99	6.63
2008			25.97	6.20
2009			25.69	6.20

Source : OECD. 2010. "Revenue Statistics: Comparative tables." *OECD Tax Statistics* (database). Paris: OECD. Industrial democracies include Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Ireland, Italy, Japan, the Netherlands, New Zealand, Norway, Sweden, Switzerland, the United Kingdom, the United States of America. OECD includes all the OECD members for each year.

Table 3-2 Descriptive Statistics (Developed Democracies)

variables	min	mean	max	S.D.	obs.
inflation	-1.77	3.49	18.79	3.25	468
growth	-6.01	2.61	11.46	1.98	468
debt	1.00	15.00	164.5	20.29	468
total revenue	2.00	18.94	38.84	8.38	468
unemp	1.59	7.09	18.08	3.28	431
agedep	43.12	50.46	69.89	4.11	468
gdppc	10.20	22.60	41.21	6.81	468
capopen	-1.84	1.90	2.48	0.93	453
tradedep	16.01	67.88	184.70	33.38	468
eumem	0.00	0.39	1.00	0.49	468
tax.gs	5.00	25.15	51.43	11.76	468
totallabor	12.69	208.1	1553.00	323.23	468
capital	3.40	9.445	20.08	3.17	468
partisanship	0.00	36.37	65.00	16.43	468
union density	2.00	17.16	32.00	7.82	468
corporatism	-1.34	0.00	1.60	0.97	468
consdem	-1.48	0.00	1.67	0.97	468

Table 3-3 OLS estimation results: developed countries

variables	model 1		model 2		model 3		model 4	
tax.lag	0.7151	***	0.7115	***	0.6613	***	0.6616	***
	0.0343		0.0343		0.0407		0.0409	
partisanship	-0.1238	.	-0.1186	.	-0.2023	*	-0.2021	*
	0.0710		0.0710		0.0868		0.0870	
cap x partisan	0.0119	*	0.0122	*	0.0184	*	0.0185	*
	0.0060		0.0060		0.0071		0.0072	
inflation	-0.0664		-0.0426		0.0242		0.0259	
	0.0952		0.0963		0.1043		0.1056	
growth	0.0299		0.0505		-0.0336		-0.0358	
	0.1163		0.1169		0.1317		0.1334	
unemployment	-0.4558	***	-0.3976	**	-0.4478	**	-0.4450	**
	0.1163		0.1377		0.1527		0.1549	
agedep	0.1097		0.1584		0.1195		0.1258	
	0.1145		0.1187		0.1440		0.1550	
debt	0.0014		0.0005		0.0067		0.0066	
	0.0135		0.0135		0.0144		0.0144	
revenue	0.2418	**	0.2138	**	0.2986	***	0.2970	***
	0.0740		0.0761		0.0818		0.0833	
gdp.pc	-0.5043	*	-0.3621	.	-0.6196	*	-0.6074	*
	0.1971		0.2179		0.2425		0.2661	
capopen	-0.1219		-0.0459		-0.3031		-0.2887	
	0.3538		0.3567		0.4098		0.4303	
tradeopen	-0.0245		-0.0216		0.0112		0.0121	
	0.0283		0.0283		0.0328		0.0338	
totallabor	0.0254	**	0.0242	**	0.0367	***	0.0367	***
	0.0080		0.0080		0.0107		0.0108	
tax.gs	-0.0864		-0.0501		-0.0447		-0.0436	
	0.1011		0.1037		0.1164		0.1170	
EUmem	1.1694		1.4870	.	1.1537		1.1732	
	0.7630		0.7900		1.0650		1.0809	
capital	-0.1953		-0.2482		-0.3516		-0.3584	
	0.3755		0.3764		0.4392		0.4441	
trade.union	0.0703		0.0767		0.0782		0.0795	
	0.0550		0.0551		0.0651		0.0662	
corporatism	-0.0451		-0.0465		-0.0951		-0.0955	.
	0.0470		0.0469		0.0508		0.0511	
consensus	0.0185		0.0157		0.0193		0.0189	
	0.0418		0.0418		0.0468		0.0470	
geography			0.0829				0.0107	
			0.0547				0.0957	
fdi					-0.0326	*	-0.0325	*
					0.0154		0.0154	
obs	406		406		357		357	
Adjust. R Sq	0.9036		0.904		0.8841		0.8837	

Note: '***': 0.001, '**': 0.01, '*':0.05, '.': 0.1. The fixed effects for year and for country are included in the OLS estimation. They are not reported here. Intercepts are also not included in the report.

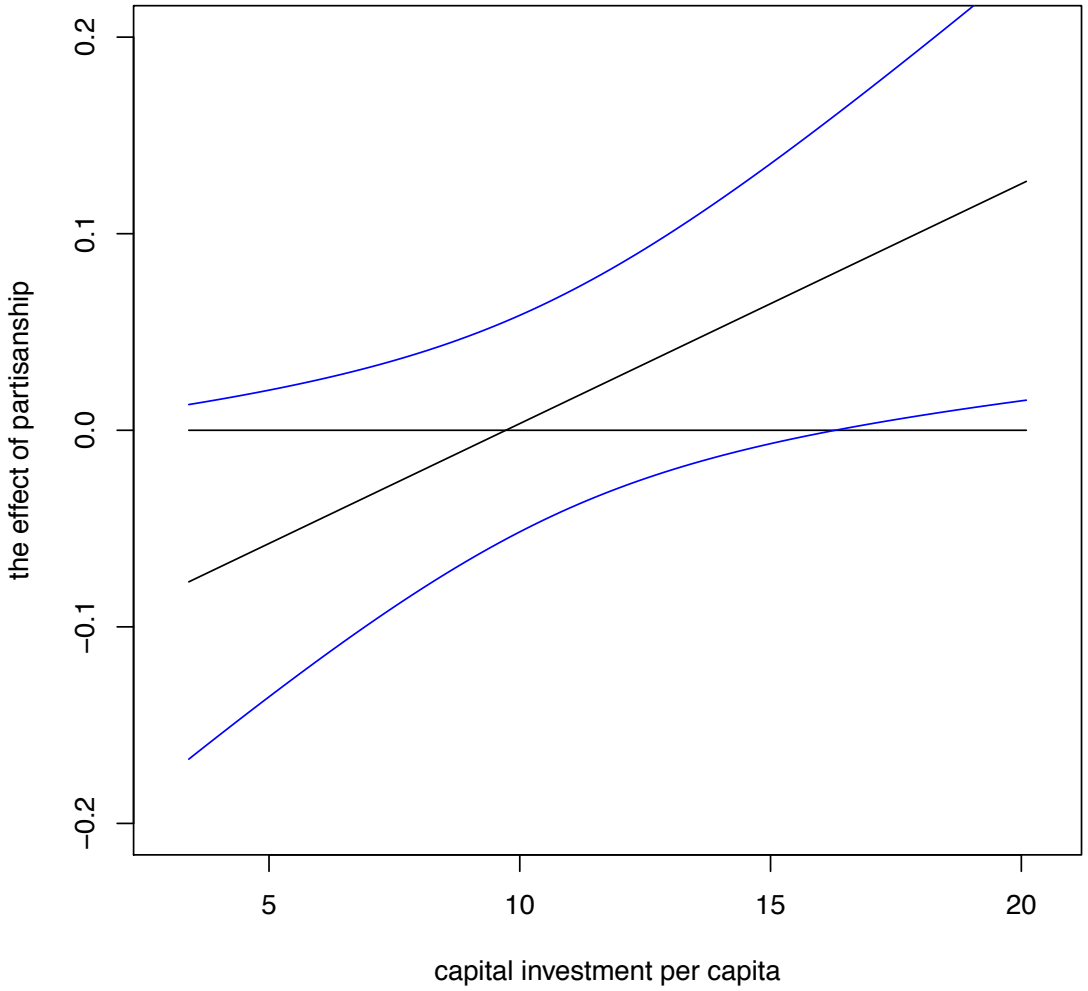

Figure 3-1 The marginal effect of *partisanship* in model 2.

Note: the graph shows the results when consensus democracy=0 and corporatism=0. The results are consistent with the changes in the values of these variables.

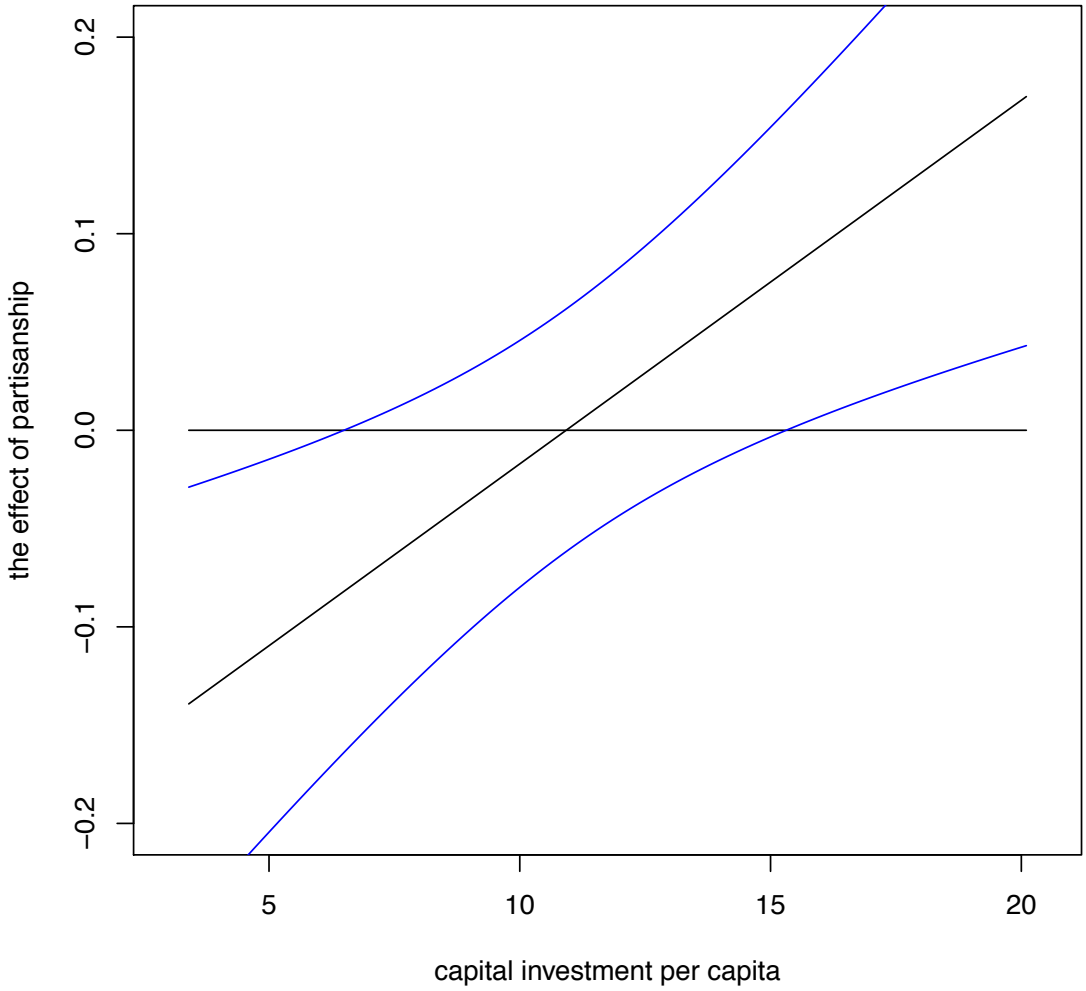

Figure 3-2 The marginal effect of partisanship in model 4.

Note: the graph shows the results when consensus democracy=0 and corporatism=0. The results are consistent with the changes in the values of these variables.

Table 3-4 Coefficient of *partisanship* and *capital*

	model1	model2	model3	model4
partisanship	0.0017	0.0021	0.0021	0.0005
	0.0325	0.0332	0.0357	0.0371
capital	0.3328	0.3316	0.4711	0.4754
	0.2659	0.2670	0.3043	0.3060

Note: This table reports the coefficients of partisanship and capital without interaction term in each model. The rest of the model remains same but none of the coefficients in this table is statistically significant.

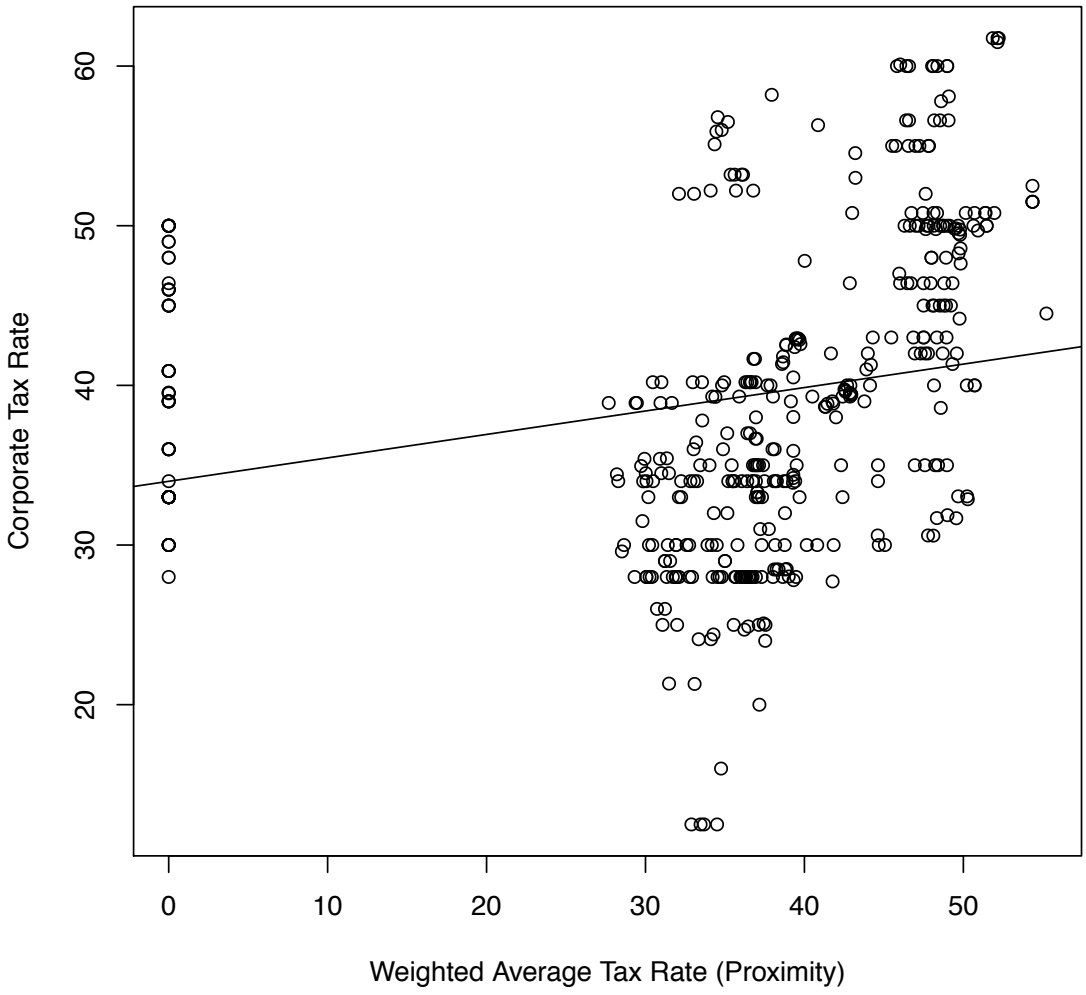

Figure 3-3 Scatterplot of Corporate Tax Rate by Spatial lag term (geography)

Note: the dots on the line of 0 on the x-axis represents Japan. It is clear that Japan is not geographically connected with any countries in the dataset.

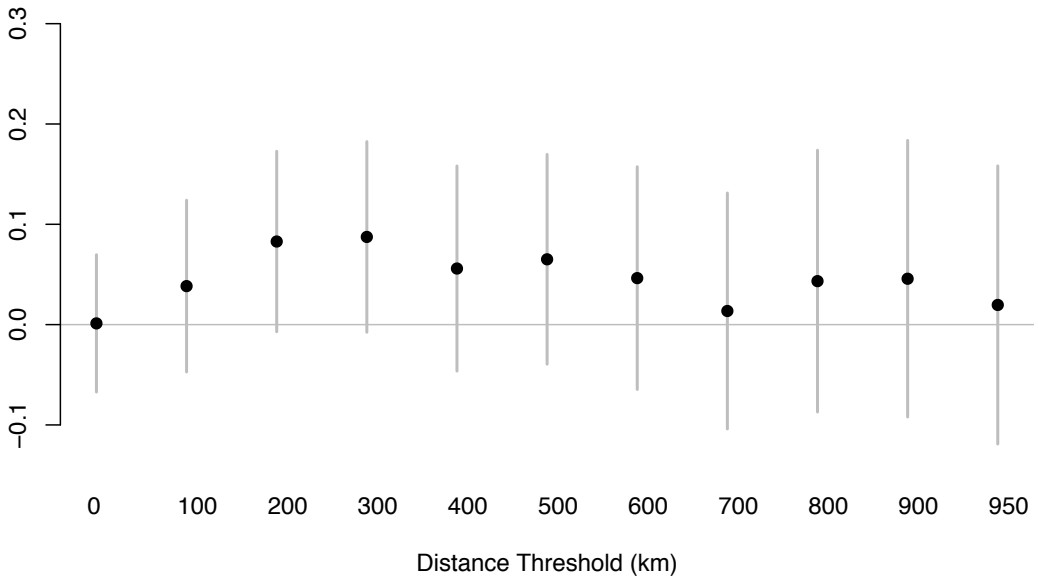

Figure 3-4 The confidence interval of spatial lag term (minimum distance) at 10% level.

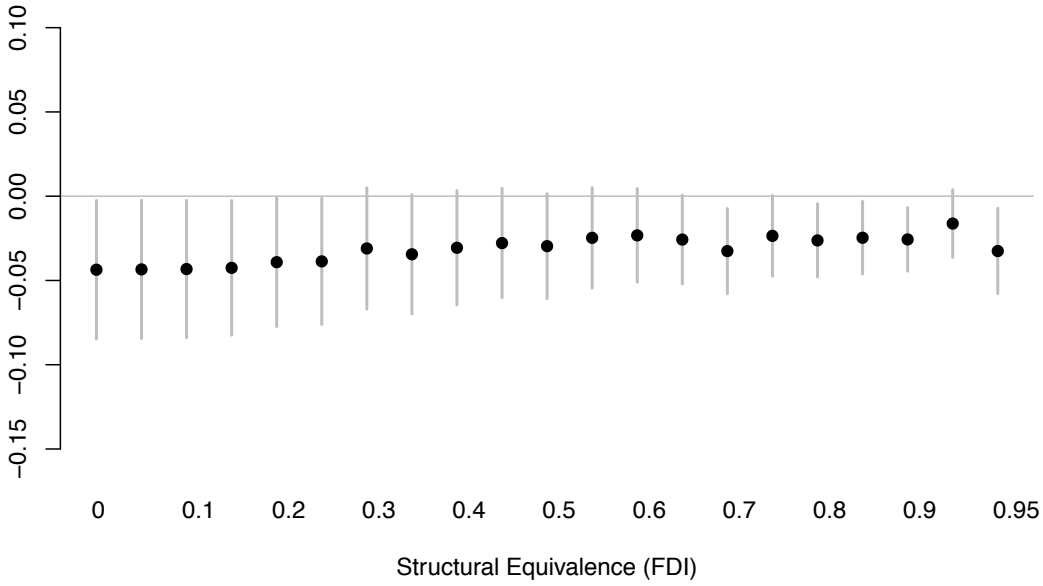

Figure 3-5 The confidence interval of spatial lag term
(the structural equivalence of FDI inflow)

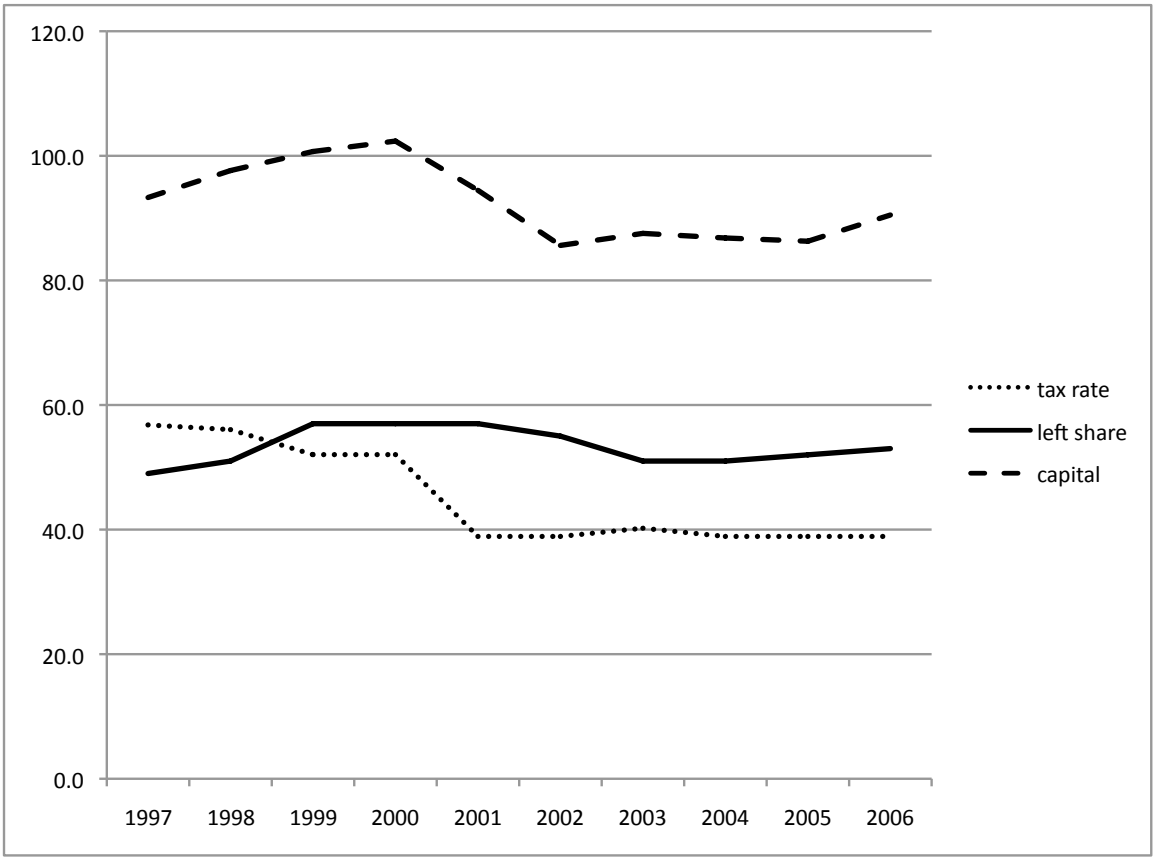

Figure 3-6 Tax rate, Partisanship, and Capital in Germany

CHAPTER 4
THE EMPIRICAL EVALUATION OF THE CONDITIONAL EFFECT OF PARTISAN POLITICS: TAX COMPETITION IN THE WORLD

Chapter 3 used data on developed democracies to establish the relationship between partisan politics and corporate tax rate, which was conditional upon the size of capital stock per capita. The current chapter investigates the relationship in the context of both developed and developing countries. The main aim of the current chapter is to check the robustness of the results found in the last chapter. Additional data from the developing countries will be incorporated to the models presented in chapter 3 to test the robustness of the results found to be significant for the developed countries.

The developed democracies are homogenous in the sense that all of them are democracies and developed capitalist countries. The extended dataset that includes the information about developing countries, however, will introduce variation by including both non-democracies and developing economies. By extending the scope of the data, not only can we check the robustness of the result, but we can also test the effect of various political and institutional characteristics on the corporate tax competition, such as the level of democracy, corruption, private property regime, etc. The current chapter will particularly focus on the effect of democracy on corporate tax competition.

Institutions, Foreign Direct Investment, and Corporate Tax Competition

Previous studies on the relationship between the political environment and the foreign direct investment show that political variables affect the amount of the inflow of FDI. Lee and Mansfield (1996) find that the level of intellectual property protection affects the amount of FDI inflow. When the multinational firms make their investment decisions in the developing world, they are worried about the interruption of the property

rights, such as the possibility of the expropriation by nationalization. If a country is equipped with a strong private property protection system, the country is more likely to attract foreign investment. Wei (2000) also shows that the level of corruption is linked with the amount of FDI inflow. Corruption is negatively related with foreign direct investments, since corruption increases the cost of transaction for business. Recently, many studies find that a democratic country is a more attractive investment destination for multinational firms (Busse 2004; Harms and Ursprung 2002; Jensen 2003). However, Li and Resnick (2003) argue that the effect of democracy on the inflow of FDI is mixed. Democracy promotes the protection of the private property rights. In this sense, democracy indirectly promotes FDI inflow. However, other aspects of democracy decrease the incentive for the foreign firms to invest in a democratic country since democies are associated with political uncertainty due to the regular change of political power.

Studies on the political determinant of FDI inflow are relevant to the study of the corporate tax competition, since the corporate tax rate is also expected to affect the inflow of foreign investment. The effect of democracy on corporate tax rate can go in both directions. If the foreign firms are more likely to invest in a democratic country compared to a non-democratic country, as Jensen (2003) argues, the democratic countries can take advantage of the competitiveness by imposing higher corporate tax rate than the tax rate in non-democracies, all other things being equal. However, democracies are expected to compensate for the additional cost incurred by the political uncertainty intrinsic to the democratic practice of changing governments on a regular basis (Li and Resnick 2003). Same logic can be applied to the private property protection system and corruption. A country with a strong private property right protection system is more likely to attract foreign investment since it can be an advantage for the foreign firms. Therefore, the country is likely to have a higher corporate tax rate when everything else is being equal. Similarly, a country with high level of corruption is less likely to be an

attractive destination of the foreign investment. Therefore, the country with high level of corruption is expected to compensate the foreign investors for the high level of corruption by offering lenient corporate tax rate to attract them. Since the sample in this chapter includes democracies and non-democracies, the level of democracy should be controlled in the empirical test. For the similar reason, the strength of the rule of the law and the level of corruption will be included as the control variable.

Dependent Variable and Independent Variables

The dependent variable in this chapter is the statutory corporate tax rate similar to the previous chapter. However, the observation covers 120 countries in the world from 1999 to 2009. This sample includes democracies and non-democracies. It also includes both developed and developing economies. Different from the developed democracies, there are some missing data here. The table 4-1 shows a trend that the mean value of the statutory corporate tax rate from the sample in a given year decreases over time.

The share of the left parties in the legislature is also included, too. Although the Swank's data set (2002) is widely used to measure the share of the left wing parties in the legislature, the data set only covers 18 developed democracies. Swank's data is used in the chapter 3. However, due to the limited coverage, the variable measuring the left parties' share in the legislature is constructed by utilizing DPI data set. DPI provides the number of seats taken by the major parties. The major parties include top 3 biggest parties in the government and the biggest opposition party. DPI also coded the ideological orientation of the major parties. Therefore, we can count the number of seats taken by the major left-wing parties in the legislature all over the world.

The characteristics of the electoral system are included in the analysis. The dummy variables for majoritarian and proportional system are used. According to Hays (2003), majoritarian system tends to have higher corporate tax rate due to the dominant influence from the labor. In the majoritarian system, the winner takes all. Since the

number of votes from the labor is always bigger than the number of votes from the capital, the influence from the labor is dominant in the majoritarian system. This logic implies that the majoritarian system is less likely to adopt a neoliberal tax reform. However, under the proportional rule, the interest of the capital is always represented in the legislature, although the magnitude of the influence varies over time and across the country. Therefore, a country with the proportional rule is more likely to launch a neoliberal tax reform usually preferred by the capital similar to the consensus democracy in the chapter 3.

The level of democracy is measured by the polity score from POLITY IV. If a democracy provides a stable environment for the business compared to non-democracies and is likely to attract more foreign direct investment (Jensen 2003), then the neoliberal tax reform is less likely to be adopted in the democracy. A democracy can take advantage of the strength by maintaining relatively high corporate tax rate. If the policy stability is low in democracies due to the frequent and regular changes of political power, then democracy is more likely to launch a neoliberal tax reform to compensate for the policy instability (Li and Resnick 2003). It is not clear whether a democracy is more likely to reduce its corporate tax rate or not since we can establish the logic for both directions. However, in any case, the level of democracy is expected to affect the likelihood of the corporate tax rate. For the similar reason, a variable measuring the level of private property protection and legal structure, *rule of law* from World Bank Governance Indicator (Kaufmann 2009) is included in the empirical model (Li and Resnick 2003). The measure of corruption from Transparency International is also used to measure the level of corruption. A country with high level of corruption may impose high level of tax rate since the tax collection is not enforced well. Or the country with high level of corruption needs to compensate the investors since the corruption increases the transaction costs for the business. Although the direction is not clear, it is expected to affect the level of tax reform.

Usual economic variables are included in the model to control the economic causes of the neoliberal tax reform. The size of the capital stock, measured by the Gross Capital Formation from WDI data set is the major economic variable. This is interacted with *partisanship* to test the interactive effect of partisan politics and the size of the capital stock on the corporate tax rate. Inflation, GDP growth, capital openness, trade dependency, age dependency, unemployment, the size of the total labor, and the percentage of the tax revenue from the goods and services to the total tax revenue are the list of economic control variables.

Spatial Lag:

Minimum Distance and Portfolio Investment Network

The method of the estimation is the same as the method in the previous chapter. Fixed effects OLS regression with spatial lags is used to estimate the effect of the partisanship while controlling for the effect of the policy interdependence among the countries connected with each other. By this way, the effect of domestic factors and the effect of international factors on the tax competition can be separately identified in the empirical model.

The spatial lag based upon the minimum distance is constructed as it is in chapter 3. Instead of the structural equivalence of the FDI inflow, the data on the portfolio investment from International Monetary Fund (IMF) Coordinated Portfolio Investment Survey is used to construct a spatial lag of portfolio investment since the data of FDI is only available for OECD countries. The data set identifies the origin country of the inward portfolio investment for each country from 2001 to 2009. The Pearson correlation between the countries was calculated to measure the similarity of the portfolio investment structure. If the two countries attracted the portfolio investment from the similar origins, then the value of the Pearson correlation is high. The level of correlation measures the equivalence of the portfolio investment structure. This calculation method is taken from

Cao (2010). Cao's data covers up to the year of 2005. In this chapter, the data is updated and covers up to the year of 2009. Once the weight matrices are constructed using the data of geographic proximity and the portfolio investment structure, the weighted average of the tax rates among the countries connected with each other can be calculated.

Empirical Test of Interactive Effect of Partisan Politics

Table 4-3 shows the results. As in the chapter 3, model 1 is a baseline model without a spatial lag. Model 2 is estimated with the spatial lag of geographic proximity. In model 3, the spatial lag with the structure of portfolio investment is included. Model 4 has both of the spatial lags. Similar to the previous chapter, model 1 and model 2 show almost identical results. However, when the spatial lag with the similarity of the portfolio structure is added, the coefficient of the partisanship turned out to be insignificant. Overall, as in the chapter 3, after controlling the domestic factors, the coefficients of the spatial lag indicating the international policy interdependence, are not significant from model 1 to model 4.

In model 1 and model 2, the coefficient of the partisanship (the share of the left-wing party in the legislature) and the coefficient of the interaction term between the partisanship and the size of the capital stock show the sign expected from the theoretical prediction. In this case, as opposed to what was seen in the models for the developed countries, the coefficient of the interaction term is not significant. To check the significance of the interaction effect over all, the graph with the confidence interval is constructed in figure 4-1. The pattern of the change in the value of the marginal effect is similar to that of the developed democracies. When the size of the capital stock is large, the marginal effect of the partisanship is positive, but it is negative when the size of the capital stock is small. However, when the size of the capital is large, the marginal effect is not statistically significant. In this model, standard error is bigger than the model with the developed democracies. The marginal effect is only significant when the size of the

capital stock is small. The theory developed in chapter 2 predicts that the equilibrium tax rate for the left wing parties becomes lower and lower as the size of the capital stock decreases. The result is consistent with the prediction of the theoretical model since the graph indicates that the effect of the left-wing parties is not positive when the size of the capital stock is small due to the small size of the tax base. However, the result here is different from the theoretical prediction since the effect of being left on the tax rate is positive according to the theoretical model. The magnitude of the marginal effect of partisan switch from the right to the left should be positive but not significant. In the figure 4-1, the result is negative and significant. On the other hand, when the size of the capital stock is large, the theory predicts that the marginal effect should be positive and significant. The result shows that the marginal effect is positive but not significant.

In model 2 and model 4, other political variables are statistically significant. The coefficient for the majoritarian electoral system is positive and significant. This implies that a country with the majoritarian electoral system tends to have a higher corporate tax rate compared to the countries with other type of electoral system or without any competitive election. This result holds throughout the models in the current chapter. It is consistent with Hays's argument (2003). Hays observes that majoritarian system is likely to have a higher capital tax rate since the influence of the labor is dominant under the majoritarian system. Hays also points out that a consensus democracy is likely to have a lower capital tax rate since the preference of the capital is always represented. Consensus democracy is a European concept. It is difficult to find a consensus democracy in continents other than Europe. However, proportional systems can be used as an alternative when we evaluate the empirical model with the data covering countries outside of the Western Europe. In a proportional electoral system, almost every vote counts. It is different from the winner-takes-all system. Therefore, as the case of the consensus democracy, the preference of the capital is always represented through the proportional representation, although the strength of the capital influence varies over time

and across the countries. Different from the case of majoritarian system, the coefficient for the proportional electoral system is not significant here.

In model 1 and model 2, POLITY and the variable rule of law have negative and significant coefficients. A more democratic country tends to have a lower corporate tax rate while controlling for the effect of the private property regime through the variable rule of law. Although it is not reported in the table 4-3, POLITY score still has a negative and significant coefficient without the variable rule of law. This result can be interpreted several ways. First, it may be the case that the result supports the compensation hypothesis. In a democracy, the political leader is selected by the regular election. This is a source of the uncertainty from the perspective of the business. Therefore, a democracy compensates for this uncertainty by lowering the tax rate. Second, it may be related to the enforcement mechanism. Due to the concern that the effect of the level of democracy can be different between the transitional democracies and the stable democracies, the square of POLITY was also tested, although not reported in the table 4-3. This implies that the country with higher POLITY score also has a lower corporate tax rate compared to the countries with lower POLITY score. Considering the association between the democracy and the economic development, high-level democracies impose lower level of corporate tax since they have a better enforcement mechanism to collect the tax imposed on the firms compared to the countries with low level of democracy.

Similar arguments can be applied to the variable *rule of law*. According to the result in table 4-3, a country equipped with better rule of law offers a lower corporate tax rate compared to the countries with a lower rule of law score. It is the opposite of the prediction of the compensation hypothesis. Why does a country with better protection of property rights and a better legal dispute resolution system offer lower corporate tax rate although it can take advantage of its strength compared to others? There could be many alternative explanations, but the quality of the enforcement mechanism to collect taxes is one of the answers to explain the result.

In model 3 and model 4, the results are different. Both the coefficient of partisanship and the interaction between partisanship and capital are not significant. The sign of the coefficient of the interaction term is negative instead of positive. The conditional effect of partisanship is not supported with the spatial lag of the inflow of portfolio investment structure. There are other noticeable changes in the political variables. The coefficients of POLITY and rule of law are not significant here. Instead, the coefficient of corruption is negative and significant. The corruption score is scaled in a way that a country with higher corruption score has less corruption. Again, compensation hypothesis is not supported here. Cleaner countries tend to have a lower corporate tax rate.

Note that the coefficients of the spatial lags are not significant throughout all the models. They are not significant consistently for various threshold values[13]. Figure 4-2 and 4-3 shows the coefficients and the confidence interval graphically, similar to the chapter 3. In both cases, the confidence interval indicates that the coefficients of the spatial lags are not statistically distinguishable from zero. Both of the spatial lags are correlated with the corporate tax rate. However, after including all the control variables, the relationship disappears. This result can be interpreted in two ways. First, the intensity of the corporate tax competition among countries disappears when we consider the domestic determinant of the corporate tax rate. Or the effect of the competition appears indirectly through the domestic variables. For example, it would be the case that if a country becomes a loser in the competition then the size of its capital stock decreases. Then, the government responds to the decreasing capital stock. The coefficient of the size of the capital stock is positive and significant in all four models. A country with bigger capital stock tends to have a higher corporate tax rate.

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[13] In the table 4-3, 950 km is used as a threshold value of minimum distance in the model 2 and model 4. For the spatial lag of portfolio investment, the equivalence score 0.3 was used in model 3 and model 4.

Second, it might be a result of the empirical strategy adopted in this analysis. As Ward and Gleditsch (2008) point out, the empirical strategy here is conservative. By including all the fixed effects and the lag of the dependent variable on the right hand side of the equation, it minimizes the possibility of overestimating the coefficient of the spatial lag. The lagged dependent variable has a good amount of information about the interdependence, since the tax rate at year *t*-1 is affected by the average tax rate of interconnected countries at year *t*-2.

Conclusion

The conditional effect of partisan politics on the tax competition is empirically tested with the data including both the developed and the developing countries. By this way, the robustness of the results in chapter 3 is tested. In this chapter, we were able to empirically test the effects of other political variables on the corporate tax policy as a byproduct. The result of the robustness test is mixed here. With the spatial lag of minimum distance, the conditional effect hypothesis is partially supported. When the size of the capital stock is small, the number of veto player does not block a neoliberal tax cut and corporate tax competition. When the size of the capital stock is large, the marginal effect of veto player is positive as predicted, but not significant. The theory predict that the effect of the veto player should be significant when the size of the capital stock is large, but not significant when the size of the capital stock is small. In case of the model 1 and model 2, the result is understandable since the large standard error may be a result of a large number of missing data. However, the results in the models 3 and 4 require further investigation. Why does the conditional effect of partisan politics disappear when the spatial lag of portfolio investment structure is included? Capital is expected to move around the world without paying a large amount of costs regardless of the distance. It is expected that the portfolio investment structure might be a more influential link among the countries than the geographic proximity. However, both of the spatial lags are not

significant in the empirical test. Even more, the spatial lag with portfolio investment structure changes the result of the model in an unpredicted way. This should be a topic for further examination.

Table 4-1 Mean and Standard Deviation of Corporate Tax Rate

Year	Mean	Std. Dev.	Obs.
1999	32.43	9.40	94
2000	31.87	8.68	95
2001	30.79	8.69	88
2002	30.40	8.38	100
2003	29.13	7.88	104
2004	28.59	8.05	102
2005	27.35	9.09	99
2006	27.20	9.08	106
2007	26.86	9.08	110
2008	25.58	8.93	107
2009	25.30	9.28	110

Source: World Development Indicators (2009).

Table 4-2 Descriptive Statistics (all countries 1999-2009)

variables	min	mean	max	S.D.	obs.
inflation	-27.05	10.12	556.90	32.23	1306
growth	-17.70	4.30	26.75	3.86	1309
unemployment	0.52	8.69	37.58	5.86	914
agedep	20.89	53.30	70.71	17.57	1320
GDP per capita	0.08	8.81	56.39	11.12	1305
capopen	-1.84	0.68	2.48	1.61	1282
trade dep	15.87	91.12	438.10	54.04	1293
EU mem	0.00	0.16	1.00	0.36	1320
tax.gs	0.03	30.72	79.46	12.92	807
total labor	0.14	22.60	776.90	79.68	1287
capital	0.05	3.90	24.88	4.53	1097
left share	0.00	0.24	1.00	0.28	1215
majoritarian	0.00	0.46	1.00	0.50	1263
corruption	0.00	3.91	10.00	2.73	1309
POLITY IV	0.00	14.38	20.00	6.49	1208
rule of law	-2.11	0.15	2.12	1.01	1309

Table 4-3 OLS estimation results: World

variable	model 1	model 2	model 3	model 4
tax.lg	0.5033***	0.5014***	0.4697***	0.4648***
	0.0373	0.0379	0.0477	0.0482
partisanship	-1.9520*	-1.9480*	-0.3916	-0.3768
	0.8075	0.8086	0.8310	0.8319
partisan x cap	0.1611	0.1621	-0.0342	-0.0279
	0.1161	0.1164	0.1126	0.1130
inflation	-0.0003	-0.0005	-0.0194	-0.0186
	0.0318	0.0318	0.0326	0.0327
growth	-0.1541**	-0.1549**	-0.1087*	-0.1106*
	0.0521	0.0523	0.0531	0.0532
unemp	-0.0015	-0.0009	-0.0356	-0.0388
	0.0700	0.0701	0.0779	0.0781
agedep	-0.2528**	-0.2542**	-0.2786*	-0.2752*
	0.0888	0.0891	0.1076	0.1078
GDP per capita	-0.2173	-0.2192	-0.1488	-0.1768
	0.2655	0.2659	0.2895	0.2923
capopen	-0.1158	-0.1100	-0.2564	-0.2377
	0.2868	0.2879	0.3871	0.3883
tradedep	-0.0045	-0.0045	-0.0110	-0.0107
	0.0167	0.0168	0.0171	0.0171
EU mem	0.2220	0.2261	0.2982	0.3002
	0.6566	0.6576	0.6531	0.6536
tax.gs	0.0339	0.0334	0.0553.	0.0534.
	0.0295	0.0296	0.0302	0.0304
totallabor	-0.0099	-0.0099	-0.0233	-0.0247
	0.0369	0.0369	0.0510	0.0511
capital	0.6677**	0.6736**	0.5397*	0.5570*
	0.2422	0.2435	0.2418	0.2431
majoritarian	2.9910*	2.9820*	3.3299*	3.2549*
	1.3000	1.3020	1.4374	1.4423
proportional	-0.1724	-0.1613	-0.1837	-0.2012
	1.0600	1.0620	1.0775	1.0786
corruption	-0.1933	-0.1970	-0.8562**	-0.8862**
	0.2064	0.2071	0.2910	0.2941
POLITY IV	-0.2785**	-0.2764**	-0.0166	-0.0086
	0.0950	0.0954	0.1073	0.1079
rule of law	-3.5390**	-3.5330**	-1.2722	-1.2400
	1.1660	1.1680	1.2323	1.2341
geography		-0.0165		-0.0496
		0.0607		0.0682
portfolio			0.0354	0.0363
			0.0488	0.0488
obs	468	468	381	381
Adjust R Sq.	0.9218	0.9216	0.9407	0.9406

Note: '***': 0.001, '**': 0.01, '*':0.05, '.': 0.1. The fixed effects for year and for country are included in the OLS estimation. They are not reported here. Intercepts are also not included in the report.

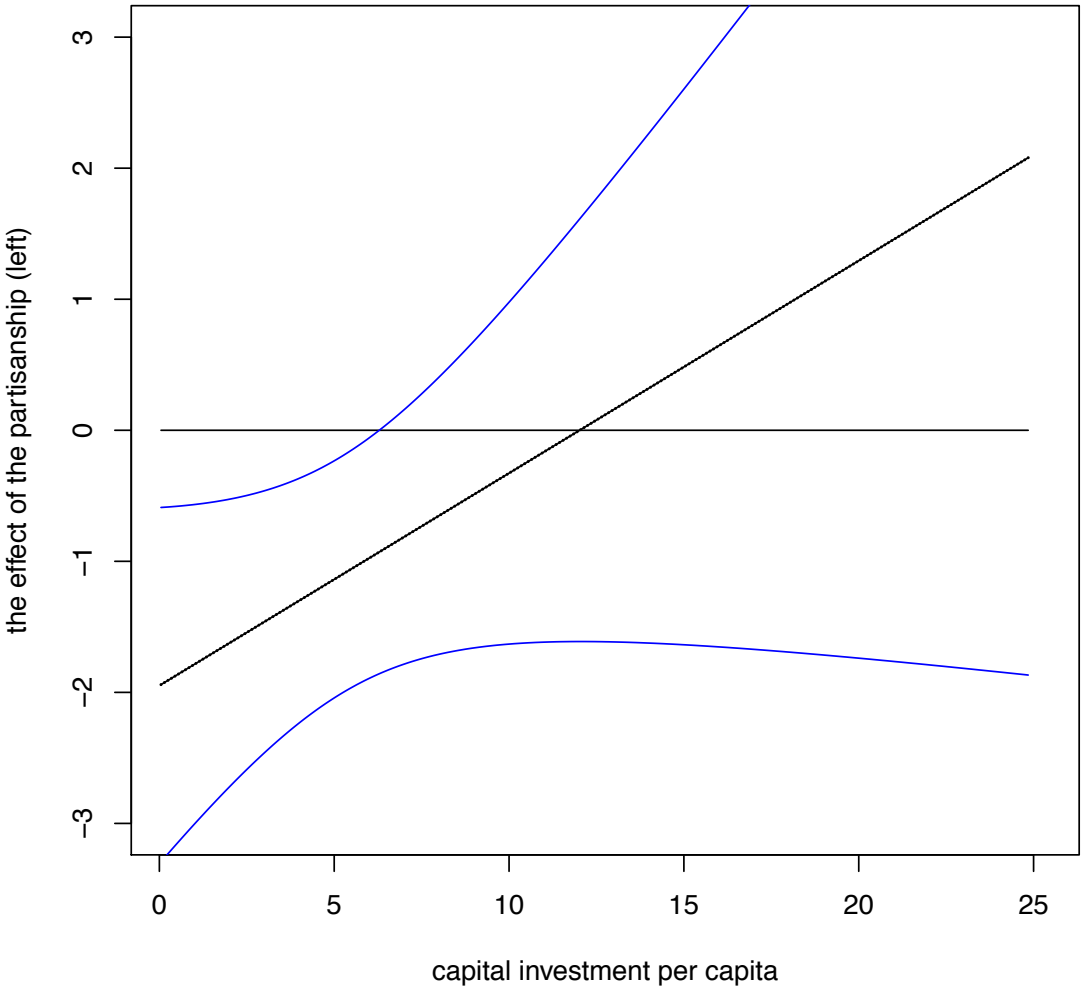

Figure 4-1 Tax rate, Partisanship, and Capital in Germany

Note: The marginal effect and the standard errors are calculated from the result of the model 2. The result for the model 1 is almost identical to this graph.

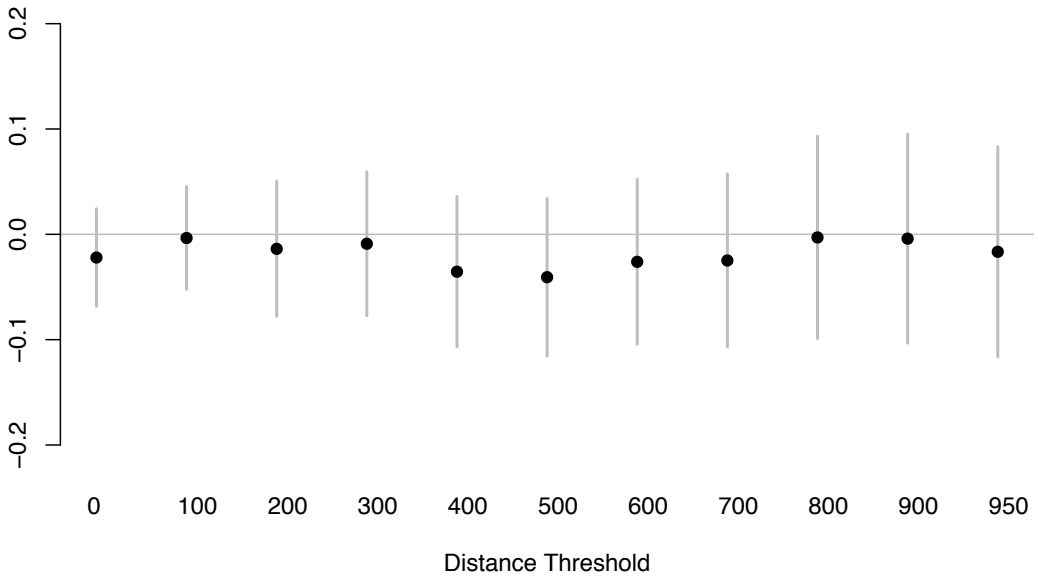

Figure 4-2 The confidence interval of the spatial lag term (minimum distance)

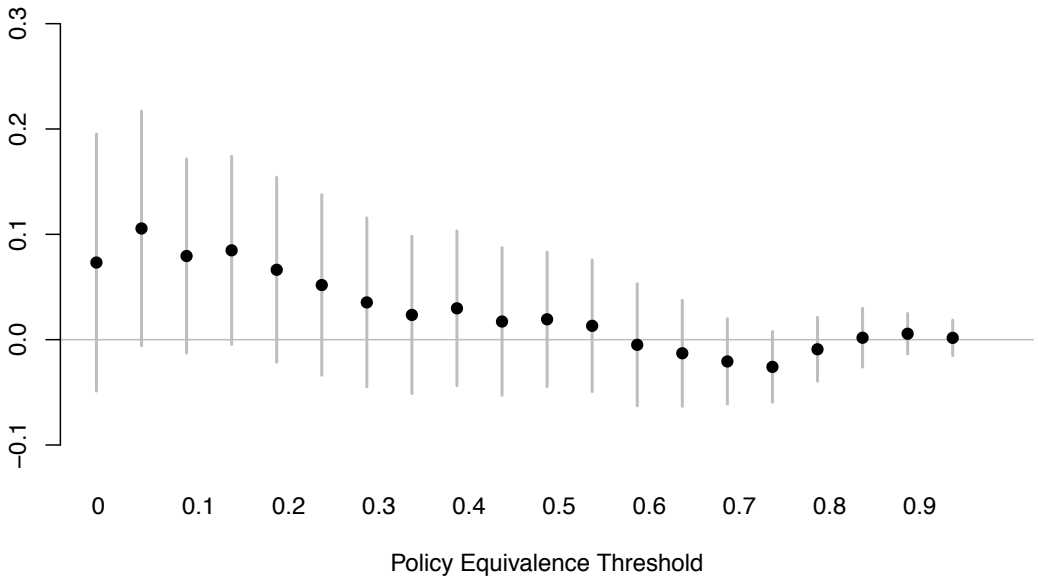

Figure 4-3 The confidence interval of spatial lag term (portfolio investment)

CHAPTER 5
THE POLITICAL COSTS OF NEOLIBERAL TAX REFORM: PARTISAN POLITICS AND VETO PLAYERS

In the previous chapters, a theory of partisan politics is developed to explain the variation of the corporate tax rate among the countries within a globalized economy. By looking at the comparative statics, the model made predictions about the change of the equilibrium outcome. In this chapter, the change of the corporate tax rate, rather than the corporate tax rate as an outcome, is explained by applying the theory of partisan politics and the tax competition developed in earlier chapters to the theory of veto players. The partisan politics theory in chapter 2 shows that the corporate tax rate each party prefers varies with the country's capital stock. When the size of the capital stock is large, the left-wing party prefers high corporate tax rate but the right-wing party wants the tax rate low. In this situation, it is difficult to reduce the tax rate since the left-wing party will veto it. However, when the size of the capital stock is small, the left-wing party prefers low corporate tax rate similar to the right-wing party since the left-wing party is not able to collect enough tax revenue for redistribution due to the limited size of the tax base. If both the tax rate preferred by the right-wing party and the tax rate by the left-wing party are low, then the left-wing party may accept the right-wing party's proposal of neoliberal tax reform, or the left-wing party may initiate a conservative tax reform as the case of Germany in chapter 3 illustrates. As a result, the effect of veto players on the neoliberal corporate tax reform is minimal or not significant when the size of the capital stock in the country is small.

The political hypotheses in the previous studies and the one developed in this project point out that the domestic political constraints, either the institutional characteristics or the partisan politics, on the corporate tax competition explain the patterns of the tax policy in each country. For example, the standard partisan politics

argument implies that the left-wing parties prevent the neoliberal tax reform from being implemented. If the right-wing parties pursue neoliberal tax reform, then the left-wing parties will oppose it since the left-wing parties prefer high corporate tax rate for redistribution. According to Garrett 1998a, 1998b) and Rodrick (1997), the demand for the government protection for the losers of the globalization has been increased. The political parties, especially pro-labor parties, responded this demand by maintaining high capital tax rate for the redistribution programs. In this situation, it is difficult to 'change' the corporate tax rate in favor of the capital investment. Then, how can we explain the patterns of tax rate change? When is the corporate tax rate likely to change? How can we explain the magnitude of the change of the tax rate? These questions are important since they are related to the overarching argument of political hypotheses on the corporate tax competition: the domestic political constraint on the change of tax rate.

Partisan Politics and the Effect of Veto Players

Tsebelis (1995, 2002) provided a useful concept, the veto players, to generalize various kind of political resistance to the change from the status quo policy. Veto players are "individual or collective decision makers whose agreement is required for the change of the status quo" (Tsebelis 2002: 442). In other words, veto players can turn down the proposal of the policy change from the status quo if they prefer the status quo to the expected policy outcome from the change. As Tsebelis and many other scholars point out, veto player is a useful concept since this concept can be applied to various kinds of institutions and partisan arrangements. Some studies have applied the veto player theory to the corporate tax competition (Hallerberg and Basinger 1998, Basinger and Hallerberg 2004). These studies are adopting a standard view on the veto players. The increasing number of the veto players contributes the stability of the policy. The economic reforms are more difficult when the number of the veto players increases. (Henisz and Mansfield 2006; Keefer and Stasavage 2003; Mansfield, Milner, and Pevehouse 2007; Treisman

2000; Tsebelis 2000). In these studies, the most important factor is the number of parties whose consent is needed for any bill to become a law. If a large number of parties need to reach an agreement for a policy change, it is difficult to reduce the corporate tax rate since the change from the status quo is difficult. If only one party's consent is necessary to change the policy from the status quo and the party is willing to launch a neoliberal corporate tax cut, then the tax cut will be adopted without serious vetoes. With the increase of the number of effective partisan veto players in the political system, the tax reform becomes politically more difficult.

However, the relationship between the number of veto players and the difficulty of the policy change may not be negative. While the standard veto player argument (Hallerberg and Basinger 1998; Basinger and Hallerberg 2004; Huber, Ragin, and Stephens 1993) suggest that more veto points measured by the number of parties in the political system, implies more difficulties in changing the status quo, Roubini and Sachs (1989a; 1989b), Swank (2001; 2002), and Crepaz (2001; 2002) argue that more parties is likely to change the status quo toward the direction of expanding government expenditure. Crepaz and Moser (2004) conceptualize this tendency using the concept of 'collective veto players' compared to 'competitive veto players.' Collective veto players share the common interests, such as promoting the government spending on the 'pork' project by cooperating for logrolling. The party system in the government fragmented by many parties is associated with the expanding government expenditure. According to the veto players argument, the status quo policy is difficult to change when there are multiple number of veto players. However, the collective veto players cooperate with each other, instead of vetoing the proposal, to promote the rent.

Another line of studies show that the economic reforms are more likely with the large number of veto players. Conventional wisdom about the veto player is that a reform is difficult with a large number of veto players. However, once the veto players agree to pursue an economic reform, then the lobby from the special interest groups to block the

reform is more difficult with the increase of the number of veto players. To stop the reform, the anti-reform interest groups should persuade all the veto players. Even one veto player can block the reversal of the reform. Therefore, the stability of the reform process is guaranteed with a large number of veto players. Frye and Mansfield (2003) show that the trade liberalization is more likely in postcommunist countries with fragmented political power. With the similar logic, Andrews and Montinola (2004) point out that the institutionalization of the rule of law is more likely to be promoted by a large number of veto players since the rent seeker are difficult to bribe a large number of the veto player to change the direction of the policy change. Horowitz and Browne (2008) also show the interactive effect of party fragmentation and ideological consensus. The ideological consensus on the market reform mitigates the effect of party fragmentation on the economic reform.

This study builds on the argument made by these previous studies. The difference of the tax policy preference between the left and the right diminishes as the size of capital stock in the country decreases. As shown in the previous chapters, the size of capital stock decreases, the left-wing parties prefer to reduce the corporate tax rate instead of the high-tax high-redistribution policy. The right wing party prefers relatively low corporate tax rate. Therefore, the tax policy preference between the left and the right converges as the size of the capital stock decreases, as the figure 2-1 indicates. In this situation, the effect of the veto players on the neoliberal tax reform is minimal since the left-wing parties will not veto a neoliberal tax reform. However, when the size of the capital stock is large, then the policy difference between the left and the right is significant since the left wants to increase redistribution but the right prefers to reduce the tax rate from the capital. This point is illustrated in the figures 5-1 and 5-2. The figure 5-1 graphically represents a situation when the country has a sizable capital stock. When the size of the capital stock in the country is large enough, the preferred tax rate by the left-wing party is relatively high, but the tax rate preferred by the right-wing party is significantly low

compared to the tax rate for the left. Assume the current tax rate is high and the right wing party wants to initiate a neoliberal tax reform by cutting the corporate tax rate. The reform is difficult to implement due to the veto from the left-wing parties since the left wing parties want the status quo. However, in the figure 5-2, the size of the capital stock in the country has been decreased significantly. Due to the small size of the tax base, even the left wing parties want to reduce the corporate tax rate to attract more foreign investment to boost up the labor wage and to extend the tax base. Since the ideal point of the left-wing parties moved toward the ideal point of the right-wing party, now a neoliberal tax reform is likely to be adopted since every veto player wants to move from the status quo to the lower corporate tax rate. In the following sections of this chapter, this interactive effect of veto players and capital stock on the neoliberal tax reform is tested by the interaction term between them in the empirical model.

Dependent Variable and Independent Variables

The dependent variable in this chapter is the tax reform. Tax reform is defined by the change of the tax rate. From *World Development Indicators 2010* by World Bank, the data on the statutory corporate tax rate of 120 countries are available from 1999 to 2009. Tax reform is calculated by the tax rate in the year *t* minus the tax rate in the year *t-1*. If the corporate tax rate has been reduced compared to the tax rate from the last year, then the value of the tax reform is negative. If the value of the tax reform is positive, then the corporate tax rate is increased compared to the tax rate from the last year. By differencing the tax rate, we lost the data from 1999. In addition, if necessary, the lag term of the tax reform is included in the regression model with the spatial lag. Reflecting the downward trend of the world average statutory corporate tax rate in the figure 1-1, the average value of the tax reform in each year shows negative sign (table 5-1).

One of the major independent variables in this chapter is *veto player*. To measure the number of the veto players, *checks* variable from the Database of Political Institutions

(DPI) by World Bank is used. The measure counts the number of effective veto players. The countries without a competitive legislative election get the smallest count. Add 1 if the chief executive is elected competitively. The *checks* variable is incremented as the number of parties with effective veto power to the government policy proposal increases. The political parties in the governing coalition but under the strong control of the chief executive is not counted as a veto player since it is not going to veto the proposal of the chief executive.

The ideological orientation of the executive branch is another important independent variable. We assume that the executive branch has an agenda setting power compared to the legislature. The executive branch initiates the policy reform proposal and the veto players in the executive and in the legislature may veto it. By considering the ideological orientation of the executive branch, the direction of the policy change in the proposal is measured. The variable *execrlc* from DPI is used to measure the ideological orientation of the executive. This variable categorizes the ideological orientation of the executive in terms of economic policies by right, center, left.

The rest of the independent variables are the same ones used in chapter 4. Although they are same, the number of observation is different because the dependent variable is the difference of the corporate tax rate between year *t* and *t-1*. The observations from the year of 1999 are not available to be used in the analysis. This is the reason why the number of observations in the table 5-2 is different from the number of observations in the table 4-2 for the variables common in the analysis in the chapter 3 and the chapter 4.

Empirical Strategies:

Partisan Politics, Capital Stock, and Veto Players

The empirical strategy adopted in this chapter is same as the one in the previous chapters. The interactive effect of the number of veto players and the size of the capital

stock is estimated by OLS regression with the spatial lag. A three-way interaction term is included in the model: veto player × ideology of executive × capital stock. It is straight forward that the interaction between veto player and capital stock is necessary to measure the interactive effect. The effect of veto player is expected to be significant when the size of the capital stock is large. The effect of veto player is less salient when the size of the capital stock is small since the ideal point of various veto players converge to a relatively low corporate tax rate. However, the interaction between the two may not be enough to capture the interactive effect of veto players. Consider a hypothetical example: the corporate tax rate in country 1 is relatively high. To see the effect of the veto player, then there should be an initiative for the tax cut. If nobody suggests a proposal of the tax cut, then there is nothing to veto. The veto players are affecting the tax policy when the government is trying to cut the corporate tax rate but the left-wing veto players block the neoliberal tax reform. To capture this interaction, veto player × capital sock is interacted with the ideological orientation of the executive branch. The executive branch is assumed to be an agenda setter and make a proposal. An executive branch with a right-wing ideology is expected to invest significant amount of time and effort to launch a tax cut compared to the executive branch with moderate or left wing ideology. Therefore, the veto player blocks the neoliberal tax reform effort made by a conservative government when the size of the capital stock in the country is large. However, when the size of the capital stock is small, the left-wing veto player will not veto the proposal of the corporate tax cut since the ideal tax rate of the left-wing party moves toward the ideal tax rate of the right-wing party. Under the executive branch with a moderate ideology, the size of veto player's effect would be moderate. If the ideological origin of the executive branch is prone to left-wing party, then we expect the insignificant effect of the left-wing veto players. However, in this situation, the effect of the right-wing veto players can be significant. The executive branch with the left-wing ideology tries to increase the corporate tax rate, but the right-wing veto players may block the effort. When the size of

the capital stock is small, then we do not expect a significant effect of veto players in any case since the ideal point of all the veto players and the executive branch converges to a relatively low corporate tax rate. The executive branch may make a similar proposal for the tax cut regardless of the ideological position and the veto players with various partisan backgrounds will not veto the proposal.

Spatial Lag:

Minimum Distance and Portfolio Investment Network

In this chapter, the same weight matrices as the chapter 4 are used to calculate the spatial lags, minimum distance data and the inward portfolio investment structure. However, the weighted average of the change of tax rate is taken instead of the weighted average of the corporate tax rate. The dependent variable in this chapter is the change of the tax rate. Therefore, the weighted average of the change of the tax rate is calculated for each country in each year. Although the spatial lags for the dependent variable are already included, the weighted average of the tax rate is also included in the model. If the average corporate tax rate of the countries connected to the country by geography or by the structural equivalence of the portfolio investment is high, the international pressure toward the country is relatively weak. However, if the weighted average tax rate of the connected countries are low, then the country have a good reason to pursue a neoliberal corporate tax cut to compete with the countries to attract more capital investment.

Empirical Test of Interactive Effect of Veto Players

Table 5-3 shows the result of the empirical estimation[14]. Model 1 is a baseline model without any spatial lag. The spatial lag by the geography is included in the model 2. In the model 3, the spatial weight matrix is constructed by the equivalence of FDI

[14] Country fixed effect and year fixed effect are controlled in the model, but not reported in the table 5-3.

inflow structure. Model 4 includes both geography and the equivalence of FDI inflow structure. In model 1 and model 2, the major independent variables and their interactions seem to be statistically significant with a similar pattern. The coefficient of veto player term is negative and significant. The ideological origin of the executive branch also shows the negative effects. All the relevant interaction terms in the model 1 and model 2 shows the same sign. To see whether those interaction effects are jointly significant, the value of the net effect and the confidence interval is presented graphically in the figure 5-3. Two graphs in the figure 3 are constructed with the values from the model 2. Table 5-4 is the variance-covariance matrix used to calculate the confidence interval.

Figure 5-3 (a) shows the marginal effect of veto players by the size of capital stock, when the country is governed by an executive branch with the right-wing ideological orientation. Here, the marginal effect of veto player is positive and significant when the size of the capital stock in the country is large. In this situation, although the right-wing executive sets up an agenda for the neoliberal tax cut, the left-wing veto players try to veto the proposal. It is less likely to cut the corporate tax rate with the increase of the number of the veto players. Here, the dependent variable is the change of the tax rate. If a country launched a neoliberal tax reform, then the value of the dependent variable should be negative. The increase of the number of veto player increases the value of the dependent variable. In figure 5-3 (b), however, the situation is different when the ideological orientation of the executive branch is left. When the size of the capital is large, a left wing party prefers not to reduce tax rate, or to increase the tax rate. The effect of the veto from the left wing parties is expected to be insignificant since the veto players share the same idea with the executive branch who sets up the agenda for the tax policy. Instead, we may expect the veto from the right wing parties if the left-wing executive branch tries to increase the corporate tax rate. Figure 5-3 (b) shows that the effect of veto players is close to zero and statistically not significantly different from zero. The results confirms the argument that the effect of the veto from the left wing is close to zero since

the proposal made by the left-wing executive is similar to the ideal tax rate of the left wing parties. However, this result does not support for the effect of the right wing vetoes against the tax increase proposed by the left-wing executive.

The coefficients and the standard errors of the interacted variables show the similar pattern in model 3 and 4. Moreover, the pattern found in the model 3 and 4 is also similar to the pattern in the model 1 and 2. However, the standard errors are relatively larger in the model 3 and 4. To check whether the interaction terms are jointly significant, the marginal effect of veto players is displayed with the graphs, too. The figure 5-4 is similar to the figure 5-3 if we look at the pattern of the change in the value of the marginal effect of veto players by the size of the capital stock. However, as expected from the large standard errors in the model 3 and 4, the confidence interval is larger in the model 3 and 4 and the marginal effects are not significantly different from zero.

Another interesting result is the effect of electoral system. Different from the chapter 3, the effect of majoritarian electoral system on the tax reform is significant from model 1 to model 4. The coefficient of majoritarian system is positive and significant. A country with a majoritarian electoral system is less likely to have a neoliberal tax cut. This confirms the argument of Hays (2003). He argues that the labor is dominant in the election with majoritarian system. Therefore, the corporate tax rate is likely to be higher than the one in a country with consensus democracy, if everything else is equal. The level of corruption is also significant. The coefficient is negative and significant in all models. Higher corruption score implies cleaner environment. A country is more likely to adopt a neoliberal tax cut as the level of corruption decreases. This result confirms the compensation hypothesis: a country with higher level of corruption need to compensate the foreign investors for the cost from the corruption by reducing the tax rate if everything else is same. Although POLITY IV score is not significant, the coefficients for the *rule of law* variable in 4 models are consistently negative and significant. The compensation hypothesis is not supported by this result. A country with a high score of

rule of law provides a business environment more stable and predictable. The private property rights are well enforced and the disputes are resolved through the fair legal system. This kind of environment is an asset for the country. A country with a strong rule of law tends to attract more FDI compared to the countries without it (Li and Resnick 2003). If we follow this line of reasoning, it is expected that a country with a solid rule of law can take advantage of this strength by setting up the corporate tax higher than its competitor without the strong rule of law. However, the result indicates that a country with high quality of rule of law is more likely to adopt a neoliberal tax cut, consistent with the result in the chapter 4.

In all four models, the economic control variables show the expected pattern. Among them, the coefficient for *tax on goods and services* shows an interesting point. They are consistently positive and significant in all 4 models. This variable measures the amount of taxes collected from the goods and services, such as VAT, as a percentage to the total tax revenue. Previous studies on the tax policy, i.e. Swank and Steinmo (2002), point out that many countries are able to cut the corporate tax rate by collecting more taxes from immobile sources. Countries cut the tax rate from the mobile sources and increase the tax rate from the immobile sources. However, the positive coefficient does not support this argument. If the tax revenue of a country is more dependent upon the taxes collected from the immobile sources, the country is less likely to cut the corporate tax rate.

Again, the coefficients of the spatial lags are consistently insignificant in all 4 models. In the model 2, the spatial lag term represents the average value of the tax rate change in geographically proximate countries. The weighted average of tax rate is also included since the average tax rate from the last year is low, then a country is expected to adopt a neoliberal tax reform to compete with them. In model 2 and model 4, they are not statistically significant, although they show the expected positive sign. Strangely, in

model 3 and 4, the coefficients of the spatial lag with FDI structure show negative signs, although they are not statistically significant.[15]

Conclusion

In this chapter, the prediction from the new theory of partisan politics is applied to the theory of veto players. A large number of veto players are expected to increase the stability of the tax rate since it is difficult to change the tax rate due to the opposition from the veto players. A few studies consider this as one reason why the actual data on the tax rates shows a different pattern from the prediction of the theoretical literature on the capital tax competition. (Basinger and Hallerberg 2004; Hallerberg and Basinger 1998). The theory of partisan politics developed in the previous chapters provides a more nuanced framework to understand the effect of veto players on the tax competition. The conditional effect hypothesis is supported by the empirical analysis in this chapter. This result has two implications.

First, it suggests that, again, the claim that the difference between the left and the right has disappeared with the globalization has gone too far. The left and the right seem to be similar when the size of the capital stock in the country is relatively small. In this case, we observe the partisan difference disappeared. If the size of the capital stock grows, we will observe the difference between the left and the right again. Moreover, although the left and the right look similar when the size of the capital stock is small, they prefer similar policy outcome due to the different reasons. The right-wing parties prefer a low corporate tax rate since they want to minimize the tax burden of the firm. By reducing the tax rate, the right-wing parties aims to increase the return to the capital. On the other hand, the left-wing parties adopt a tax cut to promote labor income by boosting

[15] In model 2, 3, and 4, 950 km is used as the threshold value for the geographic spatial lag. For the FDI structure, 0.8 is used as a threshold value. As in the chapter 3, I estimated the models with various threshold values. The coefficients are consistently not significant.

up the labor wage and by increasing the size of the tax revenue for the redistribution. Both of them look similar. But they pursue a similar policy for different goals.

Second, the conditional effect hypothesis in this chapter contributes to the literature on the veto players. The claim that the number of the veto players is positively linked to the policy stability is based on an assumption: the preferences of the veto players are fixed. This assumption is satisfied in some context, but not in the context of the partisan politics and tax competition. The ideal point of the partisan veto player changes with respect to the change in the size of the capital stock. If the ideal points of the veto players converge toward the same point, then the effect of veto players will be insignificant. This argument is applicable to various issue areas where the ideal points of the partisan veto players change in a systematic way.

Figure 5-1 Spatial Representation of veto players when the capital stock is large.

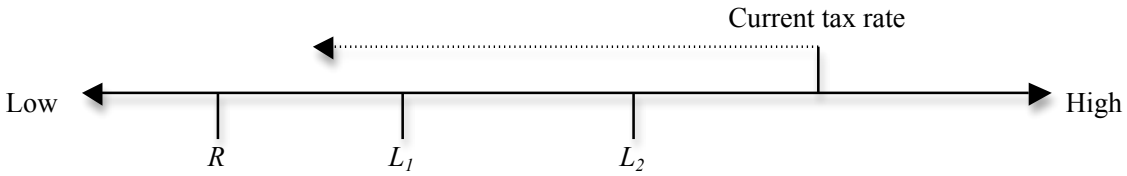

Figure 5-2 Spatial Representation of veto players when the capital stock is small.

Table 5-1 Mean and Standard Deviation of Dependent Variable

year	mean	s.d	obs.
2000	-0.55	2.61	92
2001	-0.86	3.04	83
2002	-0.64	2.95	88
2003	-1.02	3.88	97
2004	-0.44	1.84	101
2005	-0.51	2.69	94
2006	-0.47	1.98	99
2007	-0.43	1.33	104
2008	-1.37	4.69	107
2009	-0.18	2.01	107
total	-0.64	2.88	972

Note: The dependent variable in this chapter is tax reform. Tax reform equals the corporate tax rate in year *t* minus the tax rate in year *t-1*. The data on the corporate tax rate is available from 1999 to 2009. By taking the difference, we lost the data on 1999. In the analysis, the lag variable of the tax reform is included. Therefore, in the model, the data from 2000 is also lost.

Table 5-2 Descriptive Statistics (Explanatory Variables)

variables	min	mean	max	sd	obs
inflation	-27.05	10.12	556.90	32.23	1066
grow	-17.70	4.30	26.75	3.86	1069
unemployment	0.52	8.69	37.58	5.86	674
agedep	20.89	59.74	109.40	17.57	1080
gdppc	0.08	8.81	56.39	11.12	1065
capopen	-1.84	0.68	2.48	1.61	1042
tradedep	15.87	91.12	438.10	54.04	1053
eumem	0.00	0.16	1.00	0.36	1080
tax.gs	0.03	30.72	79.46	12.92	567
totallabor	1.40	226.00	7769.00	796.78	1047
capital	0.05	3.90	24.88	4.53	857
left share	0.00	0.24	1.00	0.28	975
execrlc	1.00	2.08	3.00	0.93	547
veto	0.00	3.12	18.00	1.75	1035
majoritarian	0.00	0.46	1.00	0.50	1023
corruption	0.00	3.91	10.00	2.73	1069
polity	0.00	14.38	20.00	6.49	968
rule of law	-2.11	0.15	2.12	1.01	1069

Table 5-3 OLS Estimation Results: DV-tax reform

variables	model 1		model 2		model 3		model 4	
tax.lag	-0.4166	***	-0.5344	***	-0.5379	**	-0.5367	***
	0.0446		0.0518		0.0559		0.0566	
tax.reform.lag			0.0860		0.0628		0.0629	
			0.0594		0.0570		0.0573	
veto player	-2.6980	***	-3.2600	***	-1.8000	.	-1.8030	
	0.7152		0.7328		1.0250		1.0310	.
exec. ideology	-2.6530	.	-3.5810	*	-2.1280		-2.1150	
	1.3650		1.3880		1.7150		1.7300	
capital	-0.1872		-0.3993		0.0997		0.0999	
	0.4991		0.5131		0.6286		0.6319	
exec x veto	0.8087	*	1.0250	**	0.6421		0.6417	
	0.3237		0.3302		0.4078		0.4108	
capital x veto	0.2868	**	0.3447	***	0.2047	.	0.2053	
	0.0872		0.0892		0.1178		0.1184	.
capital x exec	0.3395	.	0.4506	*	0.2933		0.2922	
	0.1883		0.1918		0.2235		0.2249	
exec x cap x veto	-0.0936	*	-0.1180	**	-0.0790		-0.0791	
	0.0399		0.0408		0.0486		0.0489	
left share	0.9113		0.1045		0.2057		0.2208	
	1.1890		1.1990		1.2020		1.2110	
left x capital	-0.1298		-0.0522		-0.0871		-0.0911	
	0.1649		0.1656		0.1619		0.1642	
inflation	-0.0025		-0.0063		-0.0644		-0.0648	
	0.0397		0.0404		0.0425		0.0427	
growth	-0.2109	**	-0.1904	*	-0.2277	**	-0.2274	**
	0.0758		0.0821		0.0867		0.0872	
unemployment	-0.0513		0.0249		-0.0421		-0.0425	
	0.0910		0.0971		0.1014		0.1019	
age dep	-0.0776		-0.1156		-0.2607	*	-0.2596	*
	0.1111		0.1245		0.1294		0.1304	
GDP pc	-0.5836	*	-0.6010	.	-0.4401		-0.4389	
	0.2830		0.3189		0.3347		0.3424	
cap openness	-0.3251		-0.4994		-0.7409		-0.7446	
	0.3655		0.4035		0.6067		0.6110	
trade dep	0.0005		-0.0097		-0.0156		-0.0160	
	0.0205		0.0213		0.0206		0.0208	
EU mem	0.3590		0.2572		0.3389		0.3480	
	0.7582		0.7676		0.7900		0.7955	
tax.goods.serv	0.0733	*	0.0812	*	0.0786	*	0.0790	*
	0.0349		0.0359		0.0376		0.0379	
labor	-0.0002		0.0001		0.0012		0.0013	
	0.0039		0.0045		0.0058		0.0059	
majoritarian	5.2420	***	5.1180	***	4.9730	***	4.9920	***
	1.2440		1.2380		1.1920		1.2040	
corruption	-0.5290	*	-0.4862	*	-0.6845	*	-0.6744	*
	0.2266		0.2407		0.3332		0.3398	
polity	0.2021		0.0203		-26.8700		-26.8000	
	1.0720		1.1430		23.3400		23.4600	
polity.sq	0.0011		0.0121		0.7036		0.7016	
	0.0354		0.0358		0.6153		0.6185	
rule of law	-4.0640	**	-3.9220	*	-3.4230	*	-3.4400	*
	1.4830		1.6280		1.6730		1.6860	
geography x tax	-0.0049		0.0000				0.0097	
	0.0632		0.0670				0.0767	
geography x tax reform			-0.0014				0.0120	
			0.1179				0.1193	
portf x tax					-0.0139		-0.0139	
					0.0236		0.0238	
portf x tax reform					-0.0867		-0.0942	
					0.2579		0.2626	
obs	357		328		286		286	

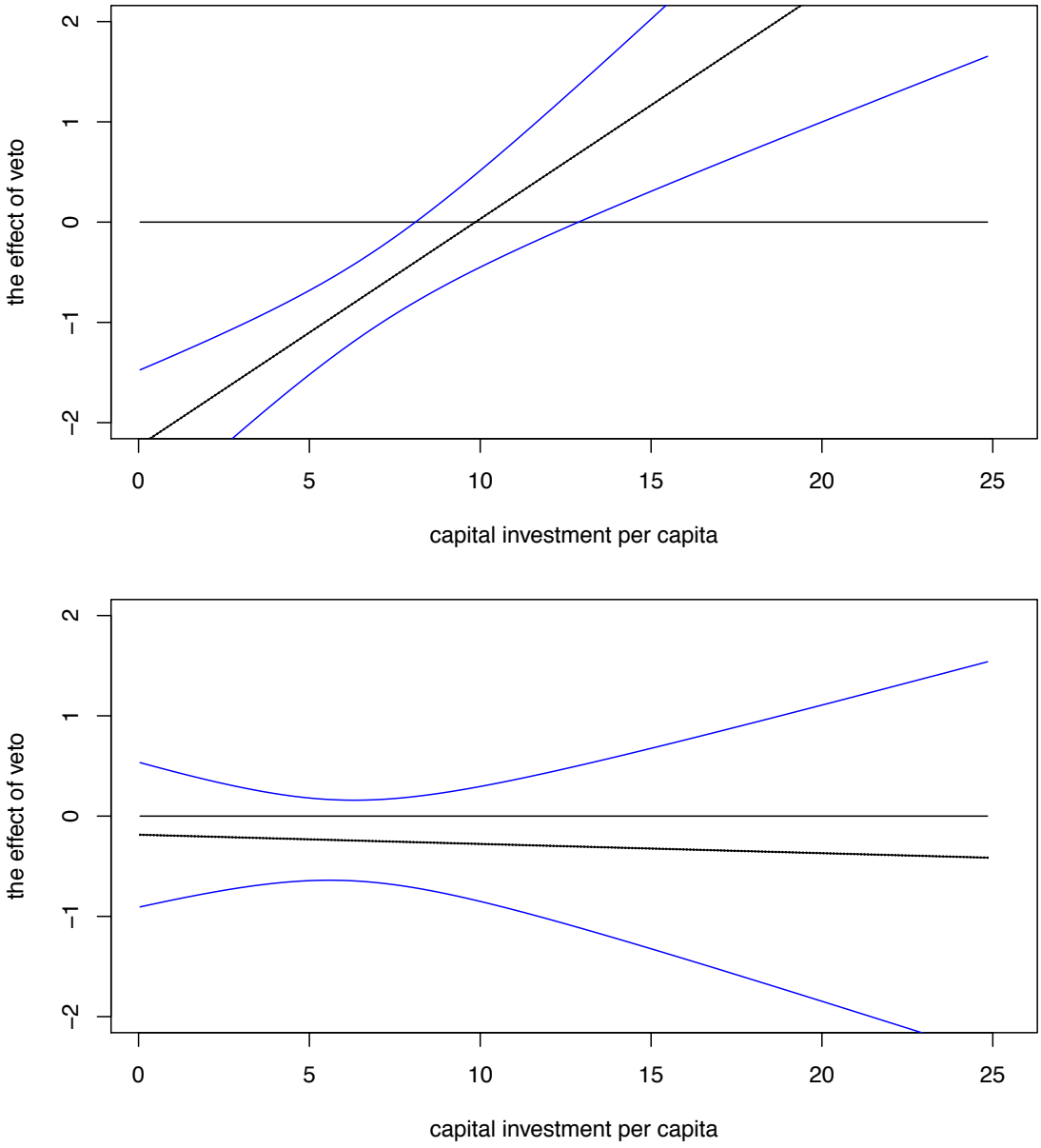

Figure 5-3 Marginal effects of veto players in the model 2

(a) executive ideology: right (above), (b) executive ideology: left (below)

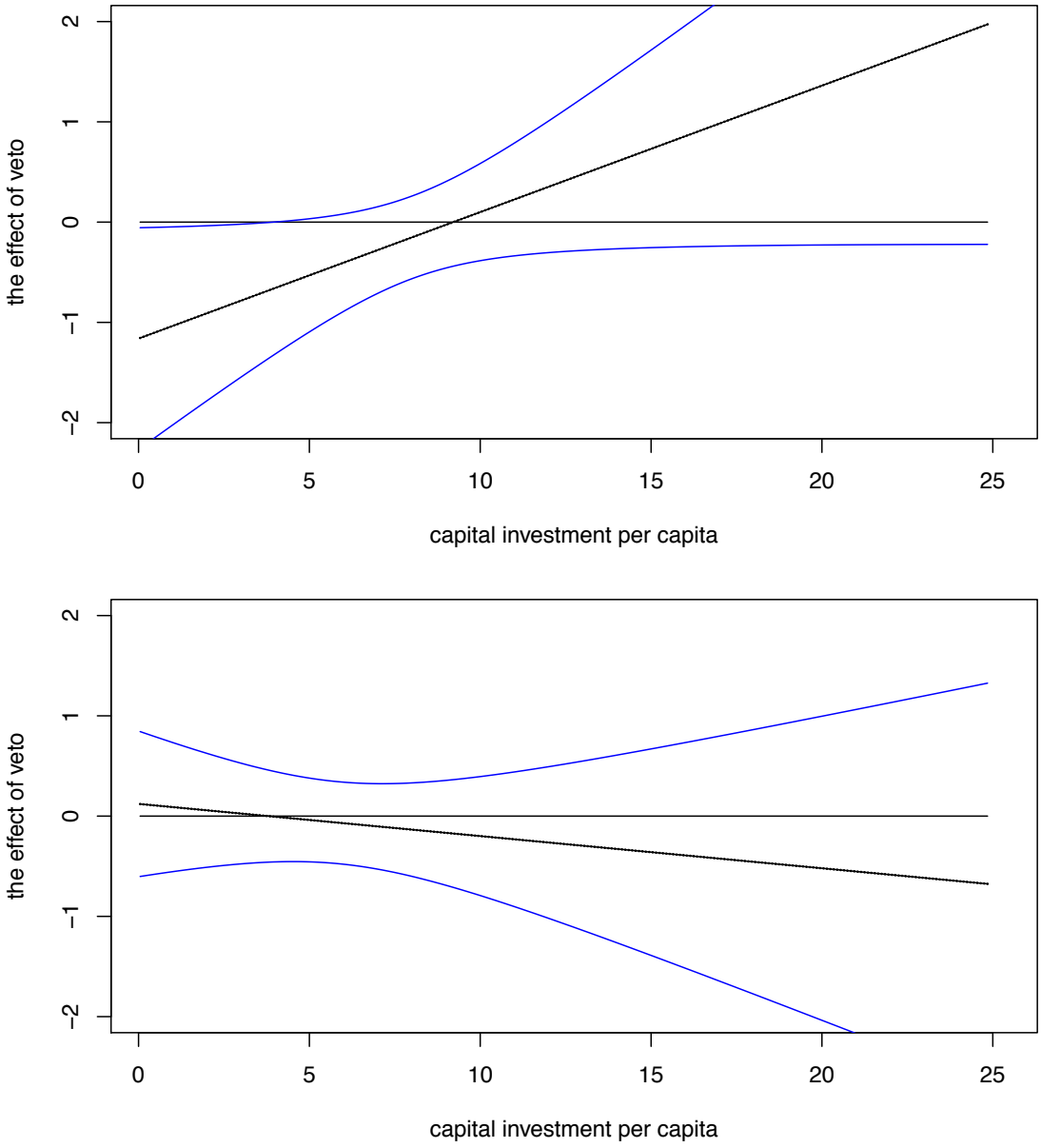

Figure 5-4 Marginal effects of veto players in the model 4
(a) executive ideology: right (above), (b) executive ideology: left (below)

Table 5-4 Variance-Covariance Matrix

(a) model 2

	veto players	veto x cap	veto x exec	vet x cap x exec
veto players	0.5369700			
veto x cap	-0.0574318	0.0079609		
veto x exec	-0.2220913	0.0232548	0.1090006	
veto x cap x exec	0.0240770	-0.0032216	-0.0117956	0.0016664

(b) model 4

	veto players	veto x cap	veto x exec	vet x cap x exec
veto players	1.0622164			
veto x cap	-0.1138781	0.0140165		
veto x exec	-0.3990591	0.0422481	0.1687914	
veto x cap x exec	0.0434551	-0.0053019	-0.0183505	0.0023951

CHAPTER 6

CONCLUSION

This project explains the observed patterns of corporate tax competition by highlighting the role of partisan politics in the global economy. A formal model of corporate tax competition is developed in chapter 2, from which a number of hypotheses are derived. One of the major hypotheses predicted the effect of partisan politics on the tax competition conditional upon the size of the capital stock in a country. When the size of the capital is large, the difference between the left-wing parties and the right-wing parties is also large. However, the difference diminishes as the size of the capital stock decreases. This hypothesis is tested with interaction terms between partisanship and the size of the capital stock per capita. The second prediction is directly related to the tax competition: the corporate tax rate of a country is positively affected by the tax rate of other countries with interdependence. The tax rate of the country moves up as the average tax rate of the competing counties goes up. Similarly, the tax rate of the country moves down as the average tax rate of the competing countries goes down. Typically the latter case is described as a tax competition. Third, the interactive partisanship effect hypothesis is extended to the theory of veto players. If the size of the capital stock decreases, then the ideal points of the left-wing parties and the right-wing parties converges to a low tax rate. Therefore, the effect of partisan veto players disappears and the neoliberal tax cut is observed in spite of the existence of the veto players.

First hypothesis is empirically supported with a sample of 18 developed capitalist economies. However, when we use the sample including the developing countries, the results are mixed. Empirical support for the second hypothesis is weak. Throughout the models in the chapter 3, 4, and 5, the coefficients of the spatial lags are consistently insignificant. In some settings, the coefficients are negative and not significant. However, we should be careful to conclude that the effect of the international tax competition is not

significant and the corporate tax policy is determined by the domestic factors. The effect of the tax competition can be indirect. The results show that countries are sensitive to the size of the capital stock. The effect of the tax competition might be transferred through the channel of the size of the capital stock. Defeated in the competition, the size of the capital stock in the country will decrease.

The third hypothesis on the veto players is empirically supported. The effect of veto players on the tax competition is also conditional upon the size of the capital stock. The result shows that the marginal effect of veto player is conditional upon the size of the capital stock. This result is interesting for two reasons. First, it makes a contribution to the literature on the veto players. When we apply the theory of veto players, we need to think about the context since the ideal point of the veto players sometimes changes systematically. Second, it also gives us a hint to explain why there is a race to the bottom, but why there is no race to the top ceiling. According to the conditional effect hypothesis, a tax competition is observed when the size of the capital stock in the country is small. Both the left-wing parties and the right-wing parties want to adopt a policy of tax cut since the ideal points of these veto players converges to a low corporate tax rate. However, from this framework, the ideal points of various partisan veto players will not converge to a relatively high corporate tax rate since the right-wing parties always veto a proposal for high corporate rate. In other word, the tax cut is possible when the size of the capital stock is small. However, the tax increase is always difficult. It is possible that the left-wing parties overwhelm the right-wing vetoes when there is a large size of capital stock.

This study contributes to the literature of political economy of globalization. First, this study revives the importance of partisan politics in a globalized economy. Many claimed that the relevance of partisan politics disappeared with globalization. Due to the pressure of the capital flight, the left-wing parties are unable to pursue their agenda of equality and redistribution. However, with a framework developed in this project, it

shows that partisan politics is still important and useful in explaining the patterns of the corporate tax competition. When partisan politics becomes irrelevant, it is due to the inability of a government to collect tax revenue from the mobile sources, such as capital. The empirical results in the previous chapters show that partisan politics might seem to be irrelevant when the size of capital stock is small in the country. With a framework developed in this study, the same phenomena can be interpreted in a different way. The ideal tax rate of the left and the right converges to a low tax rate. However, the calculation of the left and the right is different. They prefer a low corporate tax rate for different reasons. A right-wing party wants to increase the profit of the firms by reducing the tax rate. A left-wing party pursues tax cut to attract more investment for the purpose of boosting up labor income and increasing the tax base. The framework of partisan politics is useful for several reasons. It allows us to explain the dynamic interaction of partisan politics and the size of capital stock on tax competition, which could not be possible by looking only at the cross-sectional variation of the domestic institutions. Political and economic institutions are sticky and fixed for a long time compared to the partisan balance of power in the country. Second, partisan politics is applicable to the countries with various kinds of political institutions. It can be applied both democracies and non-democracies, developing as well as developed parts of the world.

This study also contributes to the literature on political economy of developing countries. Particularly in the area of political economy of tax competition, previous studies focused on developed economies. However, availability of such dataset as Database of Political Institutions allows us to shed more light on the developing nations, and in this study, I have done just that.

The theory developed in this study is stylized for the purpose of simplicity and the tractability. For example, the model in chapter 2 assumes that the government collects taxes only from the capital and transfers the revenue directly to the labor. However, there are many other important function of the government ignored in the model. Typically, the

government provides public goods that are useful for workers and firms. Governments provide social infrastructures such as transportation and postal service. Foreign firms are willing to pay the costs of using efficient infrastructure by paying tax, since the efficient infrastructures contribute to the productivity. Modern governments also spend the tax revenue on education, research, and development. This increases the labor income, but at the same time, boosts up the profit of the firms. It would be interesting to see how the predictions changes if the government is allowed to provide public goods in the model.

If a government is allowed to provide public goods in the model, we may want to consider the quality of the government. If a government is efficient in providing public goods, then the taxpayers are willing to pay more since the tax revenue will be used to benefit them. However, an efficient government may need smaller amount of resource to achieve the same goal compared to the low quality government.

Lastly, a policy selection mechanism, such as election, can be incorporated into the model. Here, the partisanship of the government is exogenously determined. This reflects the fact that the result of the election is decided by many important factors. The corporate tax rate is an important topic of debate during the election time. However, it is an over-stretch to argue that the corporate tax policy determines the election outcome. Therefore, the partisanship of the government is simply given in this study. However, we can think about various kinds of influence from labor and capital to the government from voter mobilization to interest group lobbying.

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