

Can the Welfare State be Enhanced with Higher Corporate Tax in an Era of Trade Liberalization?

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Abstract

We investigate globalization (trade liberalization)'s linkages to corporate tax burdens (the share of corporate tax revenues in GDP) and social welfare expenditures and present three major findings. First, there is no significant evidence of tax competition on the corporate tax burden due to globalization. Instead, we find evidence that a positive or curvilinear relationship exists between globalization and corporate tax burdens. Second, there is a weak possibility that globalization deteriorates the welfare state; as the world economy becomes more integrated, we observe a decrease in the share of social welfare expenditures as a proportion of GDP. Finally, we provide a negative relationship between corporate tax burdens and the share of social welfare expenditures as a proportion of GDP. Conclusively, our finding could suggest two possible relationships among globalization, the corporate tax burden, and social welfare expenditures.

Keywords: Globalization, Corporate Tax, Social Welfare Expenditures, OECD

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1 Introduction

In an increasingly interdependent world, globalization is thought to be an important growth engine creating a more open, integrated world economy. Among globalization's many positive effects are the rationalization of production, diversification of consumer choices, and an increase in real income. However, globalization is also believed to induce tax competition on the mobile factors of production, resulting in the deterioration of corporate tax revenue. In turn, governments are pressured to mitigate the adverse impacts of globalization on certain industrial sectors by relying on returns to unskilled labor.

Globalization seems to deteriorate government budgets in two different ways. First, reduced corporate tax revenues limit the ability of the government to expand expenditures. Critics argue that globalization is thus responsible for the shift in the tax burden from capital which is mobile to labor which is relatively immobile. Secondly, increased demand for social welfare expenditures incurred by globalization diminishes national fiscal balances. In order to soften social dislocations that accompany globalization, governments may have to consider enhancing certain social welfare programs. But as Rodrik (1997), Hines (2006) and others point out, governments that are willing to maintain or strengthen their social welfare programs find that their main challenge is precisely that: the effect of accelerating globalization on their budgets limit their ability to finance these projects.

Critics of globalization argue that globalization drives down the corporate tax burden so social welfare expenditures are reduced. For instance, the corporate income tax rate has been decreased from 46.5% in 1980 to 25.2% in 2007 among OECD countries. However, data indicates that social welfare expenditures have not been reduced at all since the 1980's when rapid economic integration began. Among OECD countries, the average share of social welfare expenditures as a percentage of GDP was 15.6% in 1980, which increased to 19.2% in 2007. During the same period, the average OECD share of total tax revenues (corporate tax revenues) as a percentage of GDP increased to 35.1% (3.77%) from 30.9% (2.34%). The trends indicated by these three series do not seem to be consistent with

the argument of critics mentioned above, one of the reasons why many scholarly works are still controversial.

In recent years, raising taxes on the wealthy and on corporations has become a controversial political issue in countries such as the US, France and Korea, and are contentious points of debate in their respective presidential and legislative elections in 2012. Progressive parties, such as the Democrats in the United States and South Korea and Socialists in France, emphasize the importance of taxing wealth and large businesses at higher rates. On the other side, conservatives in the United States and France tend to oppose higher taxes, especially on corporations. Conservatives in Korea, currently the ruling party, have had a more tempered stance, seeking to increase tax revenues from the wealthy and from corporations in order to finance the universal social safety net of the Korean welfare system.

The purpose of this paper is to reexamine the linkages among globalization, the corporate tax burden, and social welfare expenditures focusing on whether tax competition exacerbates social welfare expenditures, which has rarely been discussed in related studies. This will provide some insights into those countries facing a possibility of political regime change. First, we find evidence that a positive or curvilinear relationship exists between globalization and corporate tax burdens, the share of corporate tax revenues in GDP. Our finding is consistent with Garrett (1995) and Quinn (1997). They show that corporate tax revenues increase as economies become more integrated with the world economy. Second, there is a weak possibility that globalization deteriorates the welfare state; as the world economy becomes more integrated, we observe a decrease in the share of social welfare expenditures as a proportion of GDP. This empirical finding is consistent with Stryker (1998), Mishra (1999), Garrett and Mitchell (2001), and Swank (2001). However, they show a direct channel between globalization and social welfare expenditure. They argue that governments lose control over fiscal policies to retrench social welfare spending. Finally, we provide a negative relationship between corporate tax burdens and the share of social welfare expenditures as a proportion of GDP. In conclusion, our findings could suggest two possible relationships among globalization, the corporate tax burden, and social welfare expenditures. First, international competition drives corporate tax rates lower, but more FDI makes the base of corporate income tax larger, so that the corporate tax burden becomes higher. If tax cuts reduce unemployment, social welfare expendi-

tures are likely to be lower. Second, if subsidiaries of foreign MNEs have greater economic power than domestic competitors, they could destruct jobs in host countries to reduce income tax revenue. Since social welfare expenditures are financed by corporate tax revenue and other tax revenue, social welfare expenditures are likely to be lower in the country with higher corporate tax revenue.

This paper is organized as follows: The next section briefly reviews previous works related to this topic. We will then introduce our empirical model and its results, and conclude by drawing some policy implications.

2 Literature Review

The theoretical, but nonetheless controversial, background on the relationship between globalization and corporate taxes goes back to studies on tax competition among local jurisdictions. One school of thought originates from the classic analysis of Tiebout (1956), who argues that tax competition among local jurisdictions results in an efficient supply of public goods at different equilibrium tax rates. Rogowski (2003) extended this argument to the international sphere. That is, different countries supply various types of public goods efficiently imposing efficient tax burdens on residents.⁴ However, Tiebout type tax competition theories do not accommodate for the tax-avoidance behaviors of multinational firms, and rely on the assumption that taxpayers cannot avoid paying taxes to gain access to the exchange of public goods.

Another school of thought argues that tax competition for mobile factors such as capital could force governments to levy an inefficiently low level of corporate tax, which results in providing low levels of public goods. Diamond and Mirrlees (1971), Oates (1972), Gordon (1986), Zodrow and Miezowski (1986), and Mintz and Tulkens (1996) are among the proponents of this school. These studies imply that international competition could drive corporate tax rates toward zero. Specially, Diamond and Mir-

⁴In addition, Kehoe (1989), Edwards and Keen (1996), and Dhillon *et al.* (2007) are in the same vein implying that international tax competition on mobile factors would not result in a race to the bottom or the convergence of tax burden, as pointed in Stewart and Webb (2006).

reels (1971) show that small, open countries would be better off if they do not levy tax on capital at all.

Others suggest a different point of view — that distinct effects on international tax competition may depend on the mobility of capital, and that governments could design corporate tax systems in which the corporate tax burdens of each country exhibit a tendency towards convergence without engaging in a race to the bottom. Keen (2001) shows that tax competition, especially regarding foreign capital, can be confined within certain limits, so that maintaining preferential tax treatment for foreign capital could be welfare-improving under certain conditions. Devereux *et al.* (2002) argue that governments in Europe were able to compete more effectively for mobile capital by lowering statutory rates while broadening their tax bases. However, Lee (2003) provides empirical evidence that the role of FDI is variant across countries. For instance, the contribution of FDI in capital formation of Korea has been negligible, while FDI has had strong effects on the total capital formation of China in recent years.

Empirical studies are as inconclusive as the theoretical ones mentioned above. Among others, Garrett (1995) and Quinn (1997) show that corporate tax revenues increase as economies become more integrated with the world economy. On the other hand, Bretschger and Hettich (2002) show just the opposite, using results from 14-country OECD panel data. Dreher (2006)⁵ reports that average effective tax rates on capital (defined as the ratio of actual revenues to the tax base) are positively affected by globalization, while average and marginal statutory tax rates are negatively related to globalization, implying that globalization causes tax competition.⁶ Yim and Parson (2005) suggest that the host government must suffer a loss in tax revenue if it is to acquire the best technology from a foreign market leader. Overesch and Rincke (2011) recently found no empirical evidence for any relationship between globalization and tax competition using panel data for up to 32 countries in Europe.

Many studies debate broadly on the relationship between globalization

⁵Dreher (2006) takes not only economic integration but also political integration into account in their regression analysis with correction for both endogeneity of explanatory variables and Nickell's bias caused by including a lagged dependent variable to allow dynamic adjustment of shocks.

⁶The author justifies these contrastive results with the explanation that countries might attract capital by reducing tax rates, which results in the increase in both tax base and revenues.

and social welfare expenditures. Previous studies can be categorized into four theories as Brady *et al.* (2005) remarked: they are (i) positively related, (ii) negatively related, (iii) inverted U-shaped according to the extent of globalization, or (iv) not related. Cameron (1978) suggests a positive relationship, and argues that welfare states expand to compensate industrial sectors and unskilled workers harmed by economic integration. Numerous works, for example, Garrett (1995), Rodrik (1997, 1998), Hicks (1999), and Brady *et al.* (2005), report that economic integration increases social welfare expenditures. A negative relationship was argued by many studies, such as Stryker (1998), Mishra (1999), Garrett and Mitchell (2001), and Swank (2001). These studies basically contend that overwhelming global competition force governments to lose control over social welfare policies, and that they choose to retrench social welfare spending. The third possibility, an inverted U-shape, posits that a welfare state expands at low levels of globalization, but declines at higher levels as globalization proceeds. This is contended by Rodrik (1997) and Hicks (1999). This final possibility is also supported by many studies.⁷

There is little research on the last linkage among globalization, corporate tax, and social welfare expenditures.. Recently, Keuschnigg (2009) presented a simple theoretical framework: corporate taxes increase revenue, but worsens the government's overall fiscal position, but a corporate tax cut can be self-financing, as pointed out in Blanchard and Summers (1987).⁸ In addition, Keuschnigg (2009) contends that corporate taxes should be increased to help finance social welfare expenditures in exceptional cases when unemployment is inefficiently low. Hines (2006) empirically analyzes the relationship between corporate taxation and social spending, which is the only study that we could find. Hines (2006) argues that social welfare spending is largely determined by the affluence of a country, and globalization will enhance provision of social welfare to the extent that income rises due to globalization. His empirical results are based on the comparison of trends of each variable and a simple cross sec-

⁷For example, Dreher (2006) presents no significant effect of globalization on government total spending or social welfare spending. For more such studies, please refer to Brady *et al.* (2005)

⁸Similar to Blanchard and Summers (1987), this result is possible if the public sector is large, corporate tax is not the only source of funds for social welfare spending, and tax cuts reduce unemployment.

tion regression using data for 37 to 38 countries.

3 Empirical Analysis

In this section, we will reexamine, with parsimonious specifications consisting of several important economic variables⁹, whether globalization indeed affects OECD countries' corporate tax burdens and social welfare expenditures as the major policy variables discussed in this paper. Furthermore, we will also contribute to the related literature by analyzing whethersocial welfare expenditures has been increased with heaviercorporate tax burdens in the era of economic integration using panel data¹⁰ for OECD countries since 1980 and a dynamic panel data analysis method.

For two policy variables, corporate tax burdens and social welfare expenditures, the following equation is estimated:

$$y_{it} = \beta y_{it-1} + \gamma X_{it} + \mu_i + \varepsilon_{it} \quad (1)$$

where y denotes different policy variables, X indicates a vector of explanatory variables other than the lagged dependent variable, μ represents a country specific effect, and ε is the observational error term. We do not specify time specific effects. Since the lagged dependent variable is included as an explanatory variable, time specific effects are essentially controlled. The reason for including the lagged dependent variable on the right hand side is to allow some short-run adjustment costs since policy variables do not change instantaneously when responding to a given shock such as globalization.

Since the lagged dependent variables are included in our regression

⁹Papers written by others, especially by sociologists, tend to include a few of non-economic variables such as political inclination of ruling party dummy, Christian democratic cabinet dummy, and so on. Even if these non-economic variables certainly have their own purposes and roles in the regression, it seems to be hard that these variables can explain variation in dependent variable especially when differenced GMM method is employed to estimate regression equations. Since they usually have the same value for a while, they are wiped out except for the case that changes in values for them occur.

¹⁰Definition and sources of variables is provided at the end of this paper. Refer to Appendix A.

equations, ordinary fixed effect estimates are subject to the dynamic panel bias pointed out by Nickell (1981). In addition, some explanatory variables such as GDP might be endogenous, since GDP and the two dependent variables are correlated. Considering that we have yearly unbalanced panel data from 1980 to 2007 that is smaller than the number in the cross section, with a maximum 34 OECD countries, we employ the differenced GMM suggested by Arellano and Bond (1991, 1998).¹¹ In order to estimate the equation (1) for each policy variable, we utilize a two-step differenced GMM code for STATA provided by Roodman (2009) with Windmeier's corrected standard errors.

Table 1. The Effect of Globalization on Corporate Tax Burden

	(1)	(2)	(3)	(4)
Corporate Tax Burden _{t-1}	0.4046 (0.1623 ^{**})	0.3373 (0.2885)	0.3405 (0.1551 ^{**})	0.2980 (0.1622 [*])
Openness	0.0304 (0.0370)	0.0174 (0.0602)		
Openness ²		0.0000 (0.0002)		
Trariff			-0.0079 (0.0106)	-0.1061 (0.0413 ^{**})
Trariff ²				0.0004 (0.0002 ^{**})
GDP	-1.9959 (2.7066)	-1.7007 (1.9109)	-0.0361 (0.7163)	-0.6756 (0.7655)
No. of Observations	695	695	429	429
No. of Countries	29	29	29	29
No. of Instruments	26	26	19	19
P-Value for AR(2) Test	0.863	0.894	0.177	0.278
P-Value for Hansen Test	0.317	0.449	0.251	0.227

^{*}, ^{**}, and ^{***} denote the significance level of 10%, 5%, and 1%, respectively.

¹¹Since our data set has only the maximum of 34 cross sections that is not so large, the estimation results of system GMM will not be useful due to the over-identification problem with too many instruments. In practice, it is recommended to avoid the over-identification problem that the number of instruments should be kept smaller than the number of cross sections. When we applied system GMM to our data set, Hansen test and difference in Hansen tests indicates the typical sign of too many instruments weakening their ability to detect the invalidity of instruments even if we use one lag for the lagged dependent variable.

Table 1 presents the estimated effect of globalization on the corporate tax burden to test if globalization causes international tax competition to engage in a race to the bottom. Before we examine the results in detail, we first look at the specification test for the validity of instruments used in differenced GMM estimation. Arellano and Bond's AR(2) tests indicate no autocorrelation of order 2. In addition, the number of instruments is kept less than the number of countries, and Hansen test results cannot reject the null of the validity of instruments. Therefore, it could be said that the results from differenced GMM estimation do not have an overall specification problem.¹²

We use two measures of globalization. One is openness defined by the ratio of trade to GDP, and the other is the average of effectively applied tariff rates for all products weighted by the product import share. The more an economy is integrated with the rest of the world, one expects to find a higher openness ratio and lower tariff rates. Therefore, if globalization causes tax competition as asserted by the critics, openness will be negatively correlated with corporate tax burdens while tariff rates will be positively correlated. However, the result in table 1 shows no evidence for tax competition in linear specifications.

We also squared each globalization measure to see if there is the possibility of a nonlinear relationship, as some previous works have argued that an inverted U-shape relationship exists between globalization and social spending. We find that each estimated coefficient on openness and the squared openness are not significant. However, as found in equation (4) of Table 1, both the tariff rate and the squared term are significant at the 5% level, indicating a curvilinear relationship between globalization and corporate tax burdens.

This is also an inverted U-shape like the one mentioned in subsection 2.2, indicating that the corporate tax burden increases in the early phases of globalization, perhaps in order to fund the increased demand for welfare programs that alleviate the adverse social impacts of globalization. However, tax competition really only occurs after the economy attains a certain level of globalization, most likely because firms' competitiveness and economic efficiency become more important than social protection.

¹²For brevity, we do not mention specification test results for table 2 or table 3 since they show basically the same results with Table 1 at the 5% level.

The magnitude of the estimated coefficient on the squared tariff rate is very small relative to the estimated coefficient on the tariff rate. The estimated results indicate that the slope of the estimated curve will be negative when the tariff rate is less than 132.5%, which implies a positive relationship between globalization and corporate tax burdens. However, our data show that the OECD mean tariff rate changes about 2~3% points from 1988 to 2007 and the level of the OECD mean tariff rate is also 2.07% in 2007. Considering all, it might be evidence for a Tiebout type positive relationship between globalization and corporate tax burdens.

Table 2. The Effect of Globalization on Social Welfare Expenditures

	(1)	(2)	(3)	(4)
SWE_{t-1}	0.6106 (0.0974 ^{***})	0.6696 (0.1115 ^{**})	0.5065 (0.3232)	0.4134 (0.3115)
Openness	-0.0718 (0.0388 [*])	-0.1581 (0.1079)		
Openness ²		0.0002 (0.0003)		
Tariff			0.0138 (0.0602)	0.0705 (0.0801)
Tariff ²				-0.0003 (0.0003)
GDP	8.1642 (3.7269 ^{**})	12.7018 (6.4550 [*])	-10.1588 (7.4296)	-11.0695 (7.4628)
Dependency Ratio	0.4408 (0.2709)	0.7949 (0.4683 [*])	-4.7864 (4.4721)	-5.0551 (4.5130)
No. of Observations	676	676	430	430
No. of Countries	30	30	30	30
No. of Instruments	26	26	19	19
P-Value for AR(2) Test	0.661	0.807	0.331	0.326
P-Value for Hansen Test	0.280	0.272	0.273	0.333

^{*}, ^{**}, and ^{***} denote the significance level of 10%, 5%, and 1%, respectively.

In table 2, we investigate to what extent globalization affects social welfare spending. Unlike the results in table 1, the openness measure for globalization indicates some possibility of retrenchment in social welfare spending, even though there is no evidence for a curvilinear relationship between them. The coefficient on openness in equation (1) of table 2 is sig-

nificant at the 10% level. For tariffs, there is no evidence for either a linear or curvilinear association between economic integration and social welfare expenditures. For equation (1), GDP also has a positive effect on social welfare expenditures indicating that the welfare state must be affordable even if the welfare state is mostly needed in poor counties. This argument is fortified by the fact that the dependency ratio, thought to be a major determinant of social spending, is not significant.

Table 3. The Effect of Corporate Tax Burden on Social Welfare Expenditures

	(1)	(2)	(3)	(4)	(5)
SWE _{t-1}	0.7748 (0.1004 ^{***})	0.7039 (0.0887 ^{***})	0.6981 (0.0935 ^{***})	0.4446 (0.1455 ^{***})	0.4128 (0.1631 ^{**})
Corporate Tax Burden _{t-1}	-0.4376 (0.1548 ^{***})			-2.0055 (0.3676 ^{***})	-2.0216 (0.3756 ^{***})
GDP		0.5309 (0.5116)		5.8305 (2.3157 ^{**})	5.2516 (2.8561 [*])
Dependency Ratio			0.0302 (0.1083)		-0.2556 (0.4369)
No. of Observations	672	676	722	645	645
No. of Countries	32	30	34	29	29
No. of Instruments	26	26	26	26	26
P-Value for AR(2) Test	0.096	0.088	0.087	0.892	0.989
P-Value for Hansen Test	0.328	0.225	0.151	0.261	0.218

^{*}, ^{**}, and ^{***} denote the significance level of 10%, 5%, and 1%, respectively.

The final agenda of this study is presented in table 3, which is almost of the same specification as Hines (2006) except that a dynamic panel model is constructed here and dependency is substituted for population. First, the estimated equation (5) in table 3 assures again the usual argument for competitiveness and efficiency. Social welfare spending increases as the corporate tax burden decreases. This result might imply that OECD countries would have attained higher social welfare spending, considering the fact that they have been increasing corporate tax burdens by broadening the corporate tax burden even if they have seemingly competed with lowering legislative corporate tax rates. Secondly, the long run

effect of a corporate tax cut is about 1.7 times larger than the estimated short run effect on social welfare spending. We can infer this from the significant coefficients on the lagged dependent variable and corporate tax burdens at the 5% and 1% level, respectively. Last but not least, it should be mentioned that a higher degree of welfare statism can be more easily attained by affluent countries rather than those in need.

We present three major empirical findings. First, we cannot find any evidence for tax competition caused by globalization. Instead, our result supports a possible positive or curvilinear relationship between globalization and corporate tax burdens. Secondly, we find evidence for the retrenchment of the welfare state caused by globalization, which can be explained by the results presented in table 1 and table 3 in that globalization increases corporate tax burdens and the heavier corporate tax burden decreases the share of social welfare spending in GDP. The last finding is that a higher level of welfare statism can be reached via the affluent economy and lower corporate tax burdens.

4 Conclusion

We examine whether globalization is as harmful as critics have asserted, and if higher levels of welfare statism could be better attained by taxing capital or affordability, using a dynamic panel model with a data set for OECD countries from 1980 to 2007. Summing up what we find in this paper, (i) there is weak evidence for a positive or curvilinear relationship between globalization and corporate tax burdens, (ii) there is a possibility that globalization deteriorates the welfare state in that the share of social welfare expenditures as a percentage of GDP decreases as the world economy becomes more integrated, and (iii) the welfare state can be enhanced with lower corporate tax burdens.

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Appendix

Definitions and Sources of Data

Variable	Definition	Source
Corporate Tax Burden	The share of corporate tax revenues in GDP, which is C1200 in OECD tax statistics classification. (%)	OECD Revenues Statistics in OECD.STAT
SWE	The share of social welfare Expenditures controlled by General Governments. (%)	OECD Social Expenditures Database in OECD.STAT
Openness	The share of trade (=imports + exports) inGDP measured by constant prices and-constant exchange rates. (%)	Macro Trade Indicators in OECD.STAT
Tariff	The average of tariff rates applied to all products, weighted by product import share. (%)	World Development indicators by World Bank
GDP	The log of real GDP	OECD.STAT
Dependency Ratio	The ratio of population over the age of 64 and under the age of 15. (%) World Development indicators by World Bank	

The share of trade(=imports+Exports) in GDP measured by constant prices and constant exchange rates. (%)