

PRO-BUSINESS TAX POLICIES, PUBLIC SPENDING, AND ECONOMIC GROWTH

A Thesis

by

FLÁVIO DOUGLAS DA SILVA SOUZA

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Chair of Committee,	Guy D. Whitten
Committee Members,	Christine Lipsmeyer
	Timm Betz
	Robert Kirby Goidel
Head of Department,	Guy D. Whitten

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ABSTRACT

In this work, I claim that business taxes affect economic growth conditional on public spending. When considering an entrepreneurial investment, businesses take their costs of operation and potential revenues into account. I argue that business taxes and government spending play a role in this “equation,” affecting economic outlook, investors’ incentives for capital accumulation, and, ultimately, economic growth. I test my hypotheses on a panel dataset of 25 OECD countries between 2000 and 2012. Finding some support for my theoretical expectations, I contribute to the literature by pointing out the circumstances under which low taxes may benefit the economy.

CONTRIBUTORS AND FUNDING SOURCES

Contributors

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The data utilized are publicly available, but they were suggestions from helpful conference attendees at the *brown bags* in the Department of Political Science at Texas A&M University. While I completed this work independently, I am incredibly grateful for the mentorship I received along the way. Still, any remaining errors are my own.

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1. INTRODUCTION

Pro-business politicians often argue that high taxes pose a challenge to healthy economic growth. The argument is that lower taxes allow individuals and companies alike to apply their disposable income to innovative ideas and operations that stimulate entrepreneurial activity and boost economic growth. Critics of this theory suggest that lower taxes decrease the state's ability to spend on public services (such as infrastructure and education) that, ultimately, lead to better economic outcomes. The many scholarly works attempting to address this contentious debate have reached fragile, mixed, or inconclusive findings (Harberger, 1962; Bartik, 1985; Helms, 1985; Buss, 2001; Prillaman and Meier, 2014).

I believe that the question of whether pro-business tax policies—generally implying lower business taxes—lead to economic growth is one that warrants a closer look. While it makes sense that tax rates affect the cost of doing business which might then affect economic output, the degree to which this relationship exists might depend on levels of public spending. I argue that the moderating role of public spending is the missing piece in the connection between taxation and growth.

Why might public spending matter in the connection between taxes and growth? Though lower taxes might signify lower business costs and profitable economic activity, greater spending in services such as communication and transportation infrastructure might also lead to profitable business operations. Because an inherent trade-off exists in the balance between taxing and spending, I argue that lowering taxes is only beneficial to growth when spending policies appropriately mirror tax policies. Naturally, low taxes should lead to low spending and high taxes should lead to high spending. I claim that when a mismatch exists such that states that tax too little are spending too much or states that tax too much are spending too little, economic growth may not materialize.

Although this is bound to be part of the story, I claim that government spending matters not simply because of the economic benefits it imparts on businesses. If this were the case, then only certain kinds of spending would matter. Instead, I argue that general government spending matters because, in addition to corporate tax rates, business profit forecasts and investment calculations

take fiscal policy uncertainty into account. A mismatch between taxes and spending is one such source of uncertainty.

This thesis proceeds as follows. First, I discuss previous works relevant to the topic. Next, I present my argument, its logic, and implications. I then test my hypotheses, present my findings, and conclude.

2. LITERATURE REVIEW

It is not uncommon to hear politicians discuss the virtues of pro-business tax policies. Right-leaning politicians are renowned for arguing that corporations “pay too much” in taxes and are inefficient and less competitive internationally because of it (Golshan, 2017; Berr, 2014). Their argument often emphasizes the corporate role in creating jobs, growing the economy, and “making everyone better off” (Golshan, 2017). Likely motivated by these common political claims, multiple scholars have addressed the relationship between tax policies and economic output—but to little avail. Findings have largely depended on the context and the type of taxes—often pointing to negligible effects (Bartik, 1985; Easterly and Rebelo, 1993*a,b*; Hassett and Hubbard, 2002; Prillaman and Meier, 2014).

The basic intuition behind pro-business tax policies—or tax and spending policies favorable to businesses—is that lower taxes necessarily translate into greater disposable income. Because taxes impose a deadweight loss on firms and individuals, lower taxes represent greater operational efficiency—meaning higher productivity—and greater profits (Hausman, 1981; Goolsbee, 1998). Greater profits generate increased incentives for capital accumulation—often associated with positive economic outcomes (Kaldor, 1961). Surprisingly, empirical models have not robustly substantiated these expectations. Scholars such as Easterly and Rebelo (1993*a*) and Prillaman and Meier (2014) have reached conclusions indicating a rather weak relationship between taxation and growth.^{1,2}

Tax incentives for business investments may depend on a myriad of market- and firm-specific factors. Morisset and Pirnia (2000) claim that fiscal incentives might only attract investments when non-tax benefits, such as “political and economic stability” are relatively equivalent across loca-

¹Note that Easterly and Rebelo (1993*a*) analyze the connection between overall taxation (without specifying business taxes separately) and income per capita. Prillaman and Meier (2014) look at business taxes and gross state product.

²Studies have extensively focused on the connection between taxes and business location decisions which might then affect economic growth (see Bartik, 1985; Papke, 1991; Buss, 2001). Although I recognize the relevance of these works for the discussion at hand, I believe that they merely explore an additional micro-level mechanism in the relationship between taxes and growth. Overall their findings mirror those of the works I do discuss.

tions (22). Additionally, they suggest that companies serving multiple international markets might have an upper hand at this game—considering that they can better capitalize on the different tax laws between countries (Morisset and Pirnia, 2000, 23). Baccini, Li and Mirkina (2014) also show that corporate tax cuts may attract foreign direct investments only when they are not selective. Both the works of Helms (1985) and Prillaman and Meier (2014) find that, among other market factors, increased public spending may counteract the negative effects of taxation. Unfortunately, few scholars have simultaneously modeled the effect of taxation and public spending on economic growth. I am unaware of any works considering the joint effects of tax and spending policies on growth.

An implicit assumption in much of the literature at hand is that governments spend *productively*—or appropriately as necessary. Although likely innocuous when discussing advanced industrialized economies, this assumption becomes problematic when analyzing emerging and developing countries. In fact, unproductive spending might even lead to greater tax rates and borrowing with no added benefits (Rajkumar and Swaroop, 2008). The specific budget categories benefiting from increased spending are also likely to influence the degree to which capital owners find such spending potentially profit-inducing. Spending in infrastructure, for one, might decrease the costs of energy and transportation. Education spending might also nurture an educated and productive labor force in the long-run. Military or welfare spending, on the other hand, might not have a direct impact in areas of relevance for business profitability (Hansson and Henrekson, 1994; Baffes and Shah, 1998).

The main problem that arises from the simultaneous modeling of taxation and spending is the fact that, on the surface, spending and taxation are endogenous to one another (Owoye, 1995; Kollias and Paleologou, 2006). Of course, lower business taxes do not necessarily suggest a perfectly equivalent decrease in spending since governments have other revenue sources at their hands—including non-business tax revenues. I argue that when democratic governments lower business taxes while maintaining spending at or above the level it was before the new tax policy, they will introduce a strain in other sources of tax revenue that will generate political divisiveness. Such

divisiveness is likely to communicate uncertainty to investors and harm economic growth in the long-run (Keefer and Knack, 2002).

All else constant, the divisiveness and uncertainty conveyed by mismatched business tax rates and spending policy will impart fears of tax increases or unavoidable budget deficits in the future. Scholars have connected budget deficits—where government liabilities exceed receipts—to meager economic prospects, leading to high risk perceptions and capital flight (Alesina and Tabellini, 1989). Additionally, deficits have been associated with high interest rates (Laubach, 2009)—sometimes repelling investment and growth (Hakkio and Rush, 1991). Deficits might also reflect government division (Poterba, 1994) and introduce a political source of investment risk (Bechtel, 2009).

It should be evident by now that fiscal policy matters for economic growth. Because tax and spending policies appear to go hand in hand, I claim that one should not be analyzed while holding the other constant. Instead, studies should consider what happens to growth as taxes and public spending vary simultaneously.

3. THEORETICAL FRAMEWORK

In this thesis, I set out to explain how pro-business fiscal policies affect economic growth. Policy makers have at their disposal two kinds of fiscal policy tools aimed at stability and growth: taxation and spending. I argue that these tools influence economic growth in two primary ways: first, by accelerating (or decelerating) current economically productive business activity. For instance, additional government spending in fiber optic infrastructure might encourage an internet provider to introduce new or enhanced services to a market previously unexplored. Second, taxation and spending might affect growth by attracting or repelling new business investments. This second mechanism is all the more credible in light of globalization and high capital mobility¹. Although fixed business costs (including real estate and machinery) may be too high for entrepreneurs to simply “pack up and leave,” investors can more easily invest in or divest from equity markets tied with companies within a jurisdiction whose fiscal policies are more or less favorable.

Intuitively, taxation might drive the mechanisms I discuss above in a distinct and opposite direction from spending. Entrepreneurs, investors, and citizens alike might encounter increased incentives for capital accumulation in the presence of lower business taxes. Conventional economic wisdom tells us that, all else equal, demand decreases with price—implying that entrepreneurs might be less inclined to introduce or expand enterprises where costs of operation are too high. When considering the decision to invest in a new or existing venture, capital owners will choose to operate a business so long as the expected marginal costs of operation are not higher than the firm’s expected marginal revenue. If, for similar levels of non-tax marginal costs, an entrepreneur expects the same revenue, then any added taxes increase the firm’s final marginal costs of operation. *Ceteris paribus*, entrepreneurs prefer to operate in jurisdictions that have relatively lower business taxes and capital investors prefer to invest in businesses located within those jurisdictions

¹Note that while increased capital mobility and financial globalization provide a more credible basis for my theory, they are not necessary for it. Even in the absence of international capital mobility, capital owners may choose not to apply their resources in growth-enhancing business activity (such as when they choose to park their money in a low-yield savings account).

too.

While high taxes might repel investments and wither incentives for capital accumulation, high spending might accomplish the exact opposite. Spending may affect business productivity by decreasing or removing certain costs of doing business (Hansson and Henrekson, 1994). For example, governments may decrease the costs of transporting merchandise by repaving or expanding roads. Of course, only *productive* spending—or spending objectively useful to businesses—would matter here. The time horizon under which businesses might expect to reap the benefits from government spending would also matter. Though government subsidized education might decrease the costs of employee training, such decreased costs might only materialize in the long run. When government subsidizes otherwise unemployable labor, on the other hand, private businesses are likely to reap the benefits right away (see Morgan, 2005).

Although it might be helpful to think of taxation and spending separately, they are not independent from one another. Empirical works examining the connection between taxation and growth assume that spending is held constant and, similarly, those analyzing the effect of spending on growth hold taxes constant. Such assumption, I argue, is both unrealistic and disingenuous. Frequently (though not always), increased spending requires higher taxes, and lower taxes translate into lower spending.² While it is true that corresponding taxation and spending policies often do not take effect simultaneously, I argue that investors make business decisions considering both taxes *and* government spending simultaneously. For this reason, any positive or negative effects of taxes on business activity (that might translate into growth) depend on spending.

Policy makers can and often do aim at economic stability (and growth) through a variety of policy tools available to them—including taxation and spending (Barro, 1990; Friedman, 1995; Blanchard, Dell’Ariccia and Mauro, 2010). The policy decisions they make signal the priorities, the constraints, and the conflicts inherent to democratic policy-making. These decisions may appease or intensify one’s unease about the future of her investments. As such, the effect of tax policies on the economy is not independent from the effect of spending policies. In fact, the

²Mauro et al. (2015) provide a useful discussion of “fiscal prudence”—one such evidence of simultaneous tax and spending policy decisions.

kind of spending that matters to investors might be more than just the kind of spending useful to businesses. Favorable tax codes might only propel economic growth when matched by similarly satisfactory spending policies more broadly. As shown in table 3.1, I argue that more positive economic growth will materialize when tax and spending policies are consistent with one another. That is, when taxes are low and spending is low or when taxes are high and spending is high, growth will be more substantial. When a mismatch exists such that high taxes are unmatched by high spending or low taxes are unmatched by low spending, growth is likely to be lower.

Table 3.1: Expected Effect of Business Taxes on Growth Conditional on Public Spending

	Low Spending	High Spending
Low Taxes	↑	↓
High Taxes	↓	↑

Note: this table shows expected increases/decreases in economic output at distinct (business) taxation and public spending levels. ↑: Marginal increase in economic output, ↓: marginal decrease in economic output.

Why might a mismatch be counterproductive for economic growth? My answer is that when entrepreneurs and investors consider making a capital investment, they ultimately contemplate its expected returns. Various market conditions and different sources of risk play a role here—including political ones. A mismatch in taxation and spending, I argue, introduces an additional source of risk and uncertainty. Economic uncertainty decreases expected returns to capital and has been shown to drive business cycles (Baker and Bloom, 2013). Asteriou and Price (2005, 276) find that in both developed and developing countries, “uncertainty about the future of benefits, or costs of the investment project” may influence investment choices and, ultimately, growth. Additionally, recall that taxation and spending policies may follow one another in the long-term—changes in ei-

ther tax or spending policies will distort the status-quo and generate a feeling of impending policy changes in the other.

This impending feeling of change is rarely good for business. In fact, what makes business planning most productive is the ability to forecast revenues and expenses reasonably accurately. Before making large investments, capital owners seek stability in the fiscal and regulatory system they operate under. Expected returns to capital are likely influenced by this *stability* or lack thereof. In practice, a mismatch in taxing and spending might, on average, suggest a mismanagement of the economy. For example, low taxes and high spending—often balanced through sovereign debt—might convey some apprehensions about the government’s ability to repay its lenders. Even if one sees government debt as a long-term *investment*, there ought to be a degree of uncertainty as to the returns from this investment for the economy overall—as with any kind of investment. When taxes are high and spending is low, on the other hand, investors might assume that government is spending unproductively and, perhaps, corruptly.³ In the absence of a mismatch, however, investment activity is less likely to be plagued by fiscal policy uncertainty and risky policy moves are less likely to play a huge role in investment calculations.

Of course, tax and spending policies are rarely completely unanticipated. Fiscal policy changes are likely to be announced by political candidates and incumbents over time. Shocks to the status quo are often slowly (or incrementally) phased in—delivering multiple prediction tools to the hands of investors (Mertens and Ravn, 2010; Ramey, 2011). Still, business decision-makers cannot be fully certain about the effects of these fiscal policies. Even when the timing of these policies can be anticipated, no one can predict with certainty their effects on the market and business profitability. As with other kinds of policy uncertainty, the uncertainty introduced by uneven or mismatched tax and spending policies are likely to intimidate capital investments and lead to precautionary investment behavior (Gulen and Ion, 2015).

³There is also the possibility that this scenario is due to the repayment of massive debt—perhaps after a war. I am agnostic as to the consequences of this for investment activity.

3.1 Hypotheses

Thus, my theoretical argument leads to the following hypotheses:

H_1 : Lower corporate tax rates, in the presence of relatively low public spending, lead to positive economic growth.

H_2 : Lower corporate tax rates, in the presence of relatively high public spending, lead to negative economic growth.

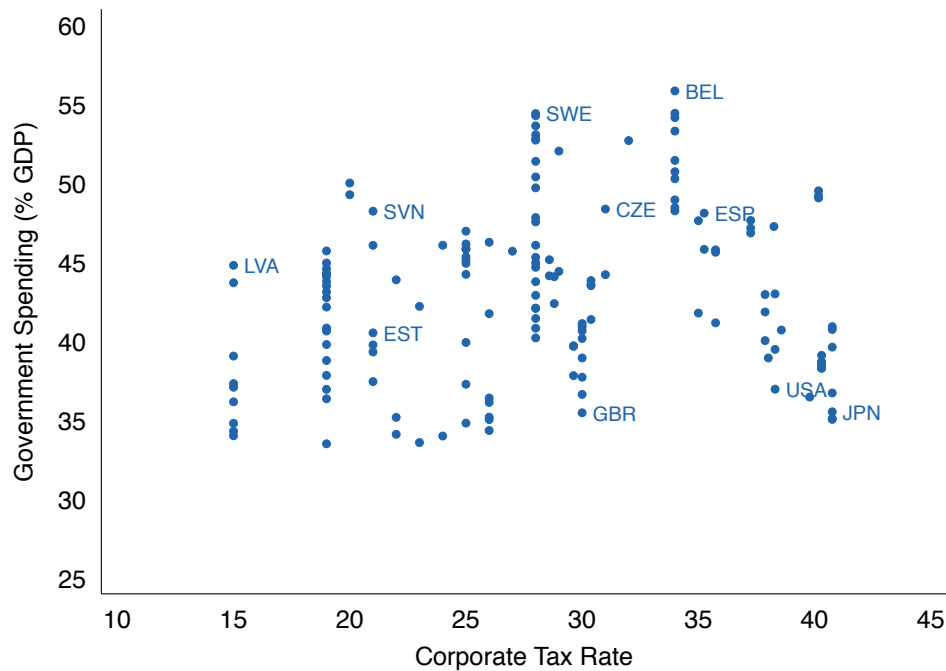
H_3 : Higher corporate tax rates, in the presence of relatively low public spending, lead to negative economic growth.

H_4 : High corporate tax rates, in the presence of relatively high public spending, lead to positive economic growth.

4. RESEARCH DESIGN AND DATA

4.1 Data

Figure 4.1: Country-Years Included in Analysis



Note: Country-Years are classified according to spending level and tax rate. Labels: GBR–United Kingdom, 1998; ITA–Italy, 2003; JPN–Japan, 2005; LVA–Latvia, 2010; SVN–Slovenia, 2009; Sweden, 2003; USA–United States, 2007.

I test the hypotheses presented in the previous section with data from 25 Organization for Economic Cooperation and Development (OECD) countries between 2000 and 2012. Although this is a sample of industrialized developed democracies, these countries display considerable variation across both my dependent and independent variables of interest. In figure 4.1 above, country-years included in the analysis are depicted as dots—classified according to government spending and corporate tax rates. Some country-years are labeled.

Cross-sectional time-series data on effective tax rates as well government spending are often of limited temporal coverage and not easily comparable across countries. An ideal measure of my main independent variable would capture the average corporate tax rate actually paid to central and local governments in a country. Unfortunately, this measure is not easily accessible (if at all collected and recorded). Alternatively, I employ a measure of effective statutory tax rates calculated and published by the Centre for European Economic Research (Spengel, 2012) following Devereux and Griffith's (2003) methodology for calculating an effective average corporate profit tax rate. This measure accounts for the stipulated corporate tax rate adjusted for the profitability of corporate investments. While this measure should suffice in measuring the main explanatory variable I theorize about, I should note that it does not account for tax deductions, credits, and other potential "loopholes" available to corporate tax payers. Thus, these are not the *actual* tax rates corporations pay, but rather an approximate indicator of the expected corporate tax burden. Government spending data—total government expenditures as a percentage of gross domestic product (GDP)—were obtained from the OECD.

My main outcome variable of interest is GDP growth rate in purchasing power parity measured in constant 2011 United States dollars. I obtain this variable from the Penn World Tables.

Following the literature and my theoretical expectations, I control for (statutory) central-government income tax rates. I am agnostic regarding the effects of income tax on growth. While some scholars have theorized that they have a negative effect on growth, empirical works have failed to substantiated these claims. I expect capital mobility and financial openness to exacerbate international competition for capital, affect tax rates, spending ability, and economic output. As such, I control for this using Quinn, Schindler and Toyoda's (2011) financial openness index.

I further expect government ideology to influence fiscal policy choices and other policy strategies—including environmental, health, and safety regulations, as well as international trade decisions—that are popularly argued to affect growth. Thus, I control for executive ideology using the World Bank's World Development Indicators (Beck et al., 2001; Keefer and Stasavage, 2003; Philip, 2012). This is a categorical variable coded 1 for right-leaning governments, 2 for center, and 3 for

left governments. Summary statistics are provided in table 4.1.

Table 4.1: Summary Statistics

Variable	Mean	Std. Dev.	Min.	Max.	N
GDP Growth PPP (in 2011 US\$)	0.027	0.041	-0.133	0.188	298
Corporate Tax Rate	28.06	7.646	10	52.35	298
Government Spending (% GDP)	45.368	6.019	30.877	65.092	298
Personal Income Tax	11.438	9.5	0	30	298
Quinn's Financial Openness	97.106	6.996	62.5	100	298
Ideology of Executive	1.829	1.055	0	3	298

4.2 Empirical Modeling

Following Pickup (2014) and Enders (2008), I model the relationship proposed above with a lagged dependent variable (LDV) model with a temporal lag of the dependent variable estimated with ordinary least squares regression (OLS). I test for stationarity across my dependent and independent variables using a Fisher-type unit root test based on the augmented Dickey-fuller and the Phillips-Perron tests for unbalanced panel data (see Choi 2001 for a detailed discussion). In addition to testing for unit roots, I ran versions of these tests examining the presence of time trends. Test results indicated a need to difference one independent variable: personal income tax rate.

Given my theoretical propositions and empirical motivations, the model I estimate can be mathematically represented as follows:

$$\text{Growth}_t = \text{Growth}_{t-1} + \text{Business Taxes} \times \text{Public Spending} + \text{Controls} \quad (4.1)$$

5. RESULTS

Table 5.1: Lagged Dependent Variable (LDV) Model Estimated with OLS

	(1) Growth
L.Growth	0.0818 (0.0645)
Corporate Tax Rate	-0.00520** (0.00199)
Government Spending (% GDP)	-0.00510*** (0.00141)
Corporate Tax Rate \times Government Spending (% GDP)	0.000111* (0.0000466)
D.Personal Income Tax	-0.000325 (0.00118)
Quinn's Financial Openness	-0.000901* (0.000361)
Ideology of Executive	-0.00183 (0.00214)
Constant	0.349*** (0.0725)
R^2	0.193
Adjusted R^2	0.172
Observations	279

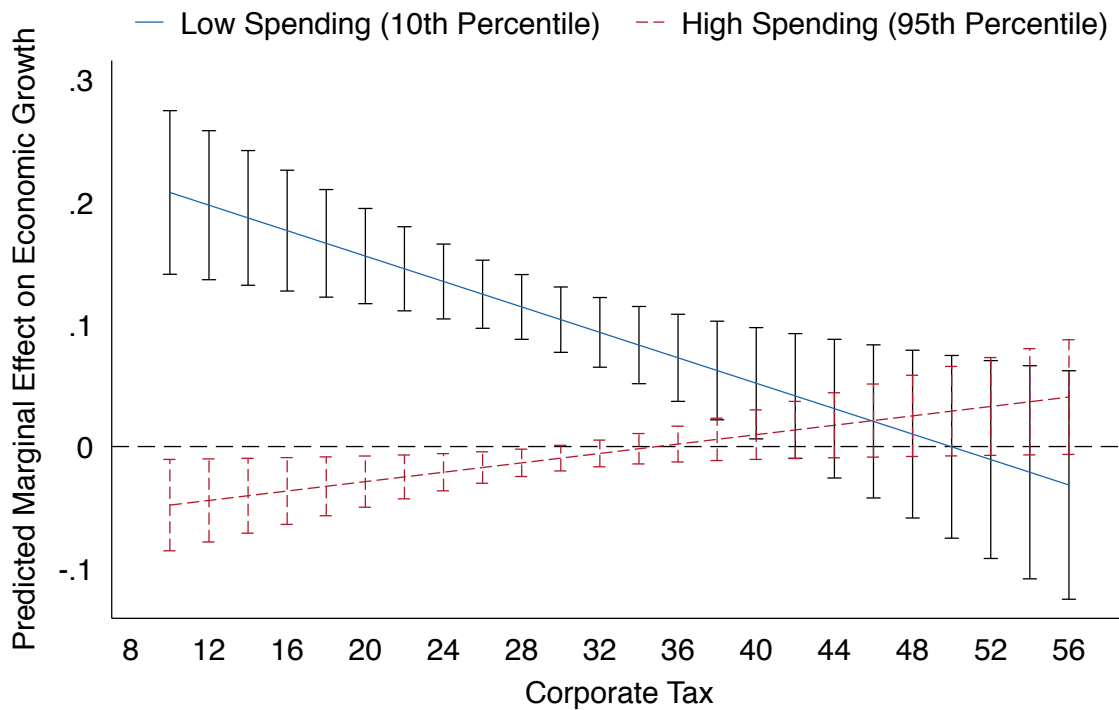
Standard errors in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Results shown in table 5.1 suggest that the interactive effect between corporate tax and spending on growth is statistically significant at the $p < 0.05$ threshold. I have also recovered statistically significant parameters on corporate tax rate, spending, and financial openness. No statistically significant relationship was identified regarding personal income tax rates. While this is evidence that personal taxes have little to do with economic growth, it is also a sign that further work is needed in order to better understand the role of personal taxes in the economy overall. In spite of my theoretical reasoning, the effect of ideology was also not statistically significant. This suggests

that the executive’s ideology bears little effect on economic outcomes. Perhaps it also has little to do with bureaucratic regulatory choices that ultimately affect growth.

Figure 5.1: Statutory Corporate Tax with High, Low spending



Note: Predicted marginal effects, with 95% confidence intervals, are shown.

Of particular interest to me is the conditional effect of business taxes and government spending on growth. Figure 5.1 above is a predicted margins plot of the interaction effect on growth. The inclusion of an interaction term between two continuous measures such as the ones I employ in this analysis has very specific implications and requires the researcher to make some arbitrary choices. This figure reports simulation predictions of the continuous effect of corporate taxes on growth across two alternative value of government spending. While it is hard to define with precision

what *low* or *high* spending might be, I calculate these predictions on the basis of *relatively* low or high spending. That is, I calculate the effect of corporate taxes on growth at the tenth and ninety-fifth percentiles of government spending.

Overall, the results depicted in Figure 5.1 garner mixed support for my theory. At lower levels of corporate tax rates, government spending seems to matter fairly significantly. In these settings, government spending at the tenth percentile leads to a positive and statistically significant effect on growth. Government spending at the ninety-fifth percentile, on the other hand, is associated with negative growth. As average effective statutory corporate taxes increase, the distinction between low and high spending fades away. When corporate taxes reach, roughly, 36 percent of business revenue, we are no longer able to find statistically different effects. In fact, at high tax rates, the effect of low and high spending are also not distinguishable from zero. This suggests that both the conditioning relationship and the mismatch I theorize about only matter when taxes are low. Perhaps this is because capital owners are more concerned about investment uncertainty when taxes are low than when they are high. Intuitively, when taxes are relatively low investors have more reason to be concerned that they might increase over time than when taxes are already high by global standards. One thing seems clear: the effect of low taxes on growth depends on government spending policies.

6. CONCLUSION

In this work, I claim that business taxes affect economic growth conditional on public spending levels. I argue that business taxes and government spending interact in affecting incentives for capital accumulation, and, ultimately, economic growth. I test my hypotheses on a panel dataset of 25 OECD countries between 2000 and 2012. Finding some support for my theoretical expectations, I contribute to the literature by pointing out the circumstances under which low taxes may be beneficial for the economy.

These novel findings have vast implications for fiscal policy making at large while building on numerous works addressing taxation and spending across the social sciences. Future research should consider specific kinds of taxes (e.g., direct, indirect) and specific kinds of spending (e.g., infrastructure, education, social security). Additionally, a valuable contribution to the literature would be to extend the argument put forth to contexts of emerging and developing countries.

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