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Reforming Business Taxes

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What Is the Effect on Private Sector Development?

Tax rates and the administrative costs of tax compliance are key concerns of business. Studies within and across countries suggest that lowering corporate tax rates can increase investment, reduce tax evasion by formal firms, promote the creation of formal firms, and ultimately raise sales and GDP. These benefits, however, need to be balanced against other objectives of the tax regime. Although less is known about the effects of reducing compliance costs, evidence suggests that this too can lead to more formal firms and higher sales.

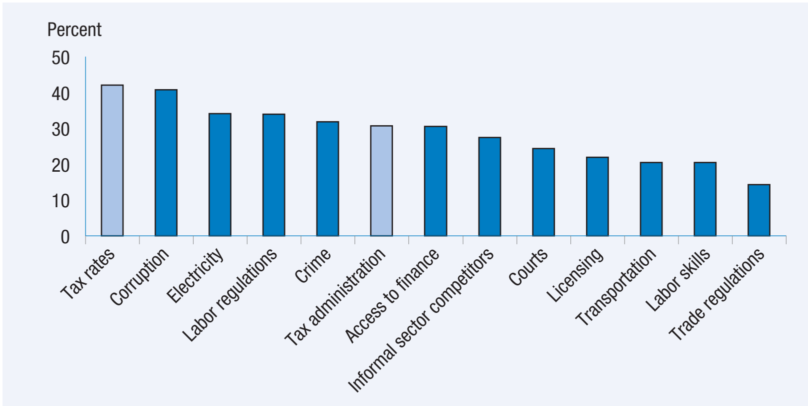
The tax regime is one of the most prominent aspects of a country's business environment. In many countries most formal firms are required to file and pay taxes repeatedly throughout the year and must dedicate substantial staff time to the process. Thus it is unsurprising that in the World Bank Enterprise Surveys businesses consistently rank tax rates and the tax administrative process among the most important constraints they face (figure 1). Tax policy and administration are a key part of a country's private sector development strategy. They are also often a political minefield, subject to conflicting objectives.

The regulatory burden of taxation has been increasingly highlighted in surveys on doing business, and country case studies suggest that high compliance costs can contribute to the decision of businesses to operate informally—that is, to not register with the tax authority at all (see, for example, Thiessen 2003). This is particularly relevant for small and medium-size firms, which tend to face disproportionately high compliance costs.[1]

Corporate tax rates have been almost universally reduced over the past decade as a result of the competition for increasingly mobile capital. Yet important differences remain across countries.[2] The World Bank's *Doing Business* report, which collects data on statutory tax rates around the world, finds significant variation, with rates ranging from 0 percent in Moldova to 40 percent in Chad in 2010 (World Bank 2011).

But statutory tax rates do not necessarily represent the taxes that firms actually need to pay. The reason is that deductions, depreciation, and other factors influence how much of corporate income is taxable. A more meaningful measure of corporate taxes is the effective tax rate, which measures the actual taxes paid (after taking into account deductions, depreciation, and other factors) as a percentage of profits. Djankov and others (2010) report both statutory and effec-

Figure 1 **Share of firms identifying issue as a major constraint**



Note: Data cover 128 countries and are the latest available for each country.
Source: Author's calculations based on data from World Bank Enterprise Surveys in 2005–10.

tive tax rates for 85 countries.[3] Effective tax rates tend to be lower (the average statutory tax rate is 29 percent, and the average effective tax rate 17.4 percent), but they still vary widely across countries—from 6.6 percent in Mongolia to 39.9 percent in Bolivia.[4]

Measuring the effects of tax reforms on economic outcomes such as investment is challenging. It involves extensive data requirements, nonuniform reporting practices, identification problems, and a wide range of imperfect measures and methodologies to overcome these challenges. Further complicating the task is that investment decisions usually are not based only on corporate income tax. Value added tax, depreciation, dividend tax, and capital taxes all play an important part as well, particularly for small domestic firms. Indeed, one reason why countries have lowered corporate income tax rates during the past decade is that they have also reduced tax incentives and have put more emphasis on value added tax instead, raising the rates and widening the coverage.

With these challenges in mind, this Note is aimed at providing an initial overview of the empirical evidence on the effects of business tax reforms that change the tax rate or administrative processes (particularly filing requirements and the time required to pay taxes) on investment, tax evasion by formal firms, formal firm creation, and economic performance.[5] Tax reforms clearly have implications for other economic outcomes as well, particularly government revenue. But the focus here is on the effect of these reforms on private sector development.

Lower tax rates, higher investment

While both tax rates and tax administration are key concerns of the business community, the lack of comparable information on administrative structures and, more important, administrative and taxpayer compliance costs constrains cross-country studies of tax administration.

The tax component of the World Bank's Doing Business survey is one of the few attempts to collect standardized information on tax compliance costs, though only for a single hypothetical firm. Using this database, Djankov and others (2010) examine the relationship between the complexity of paying taxes and investment. They find that neither the number of hours needed to comply with taxes nor the number of tax payments, as captured in the survey, is significantly correlated with investment across countries (table 1). But given the regressive nature of compliance costs, their effect can be expected to be more important for firms that are smaller than the case study firm used by the Doing Business survey. Thus more research is needed to study the relationship between tax simplification and investment across countries. There is no within-country study examining this relationship.

Most empirical papers on the private sector effect of tax reforms focus on the relationship between corporate income tax rates and investment across countries. For example, one recent study finds that a decrease in the statutory corporate tax rate of 10 percentage points is associated with an increase in foreign direct investment equivalent to between 0.33 and 0.45 percent of GDP (Klemm and Van Parys 2009). The same study finds no significant relationship between statutory tax rates and domestic investment.

Two cross-country studies using effective tax rates find stronger results. They show that a decrease in the effective corporate tax rate of 10 percentage points is associated with an increase in foreign direct investment equivalent to between 1.6 and 2.1 percent of GDP (Djankov and others 2010; Van Parys and James forthcoming).[6] Similarly, one shows that a decrease in the effective corporate tax rate of 10 percentage points is associated with an increase in domestic investment equivalent to 2 percent of GDP (Djankov and others 2010).[7]

A potential limitation of cross-country studies is that the estimated correlations between tax rates and investment are not necessarily causal, since they can be driven by other country characteristics that are hard to control for (see also OECD 2007). Within-country studies can often account for these factors, however, and can therefore identify a more reliable, causal relationship. Two within-country studies examine the effect of effective tax rates on investment. An analysis of the U.S. Tax Reform Act of 1986 shows that for sole proprietors a 10 percentage point decrease in the marginal tax rate led to a 20 percent increase in investment (Carroll and others 1998). In contrast, a within-country study in India finds that the Finance Act of 2000, which included a reduction in tax benefits for export income (increasing the effective tax rate from 0 to 18 percent), appears to have had no effect on firms' investment (James 2010). But further investigation suggests that firms were able to avoid paying higher taxes after the reform by overstating expenses.

Higher tax rates, more tax evasion by formal firms

Estimating the effect of compliance costs and tax rates on tax evasion by formal firms is difficult because tax evasion is hard to measure empirically. Using detailed data from tax auditors to capture tax evasion, the within-country study in India (James 2010) shows that the increase in effective tax rates ensuing from the Finance Act of 2000 increased tax evasion by formal firms by 10.6 percent of sales (table 2).

A micro-level study successfully measures tax evasion by calculating the reporting gap between administrative data on exports from Hong Kong SAR, China, to China and administrative data on imports by China from Hong Kong SAR, China (Fisman and Wei 2004). The study finds that a 10 percentage point increase in the tax rate on exports, defined as the import tariff plus value added tax rate for each product, raises the reporting gap between exports and imports by 30 percent.

There are no studies that measure the effect of compliance costs on tax evasion by formal firms.

Lower and simpler taxes, more formal firm creation

Another important outcome of tax reforms is formal firm creation, encompassing both the formation of new firms and the formalization of previously informal firms. A cross-country study shows that a 10 percentage point decrease in the effective corporate tax rate is associated with an increase in the total number of registered businesses of 2 per 100 people of working age (Djankov and others 2010; table 3).[8] The same study finds no significant correlation between the number of hours needed to comply with taxes and formal firm creation across countries. But a 10 percent decrease in the number of tax payments is associ-

Table 1 **Effect of tax reforms on investment**

Country	Study	Reform	Increase in domestic investment	Increase in foreign direct investment
United States	Carroll and others 1998[a]	Tax Reform Act of 1986: 10 percentage point decrease in marginal tax rate	20 percent	
India	James 2010	Finance Act of 2000 (marginal effective tax rates)[b]	None	
Cross-country	Djankov and others 2010	10 percentage point decrease in effective corporate income tax rate[c]	2 percent of GDP	2 percent of GDP
		10 percent decrease in number of hours needed to comply with taxes	None	
		10 percent decrease in number of tax payments	None	
Cross-country	Klemm and Van Parys 2009	10 percentage point decrease in statutory corporate income tax rate[d]	None	0.33–0.45 percent of GDP
Cross-country	Van Parys and James forthcoming	10 percentage point decrease in effective corporate income tax rate[b]		1.6–2.1 percent of GDP

a. Examines the effect of sole proprietors' personal income taxes on their capital investment decisions. The measure of income taxes used is the marginal federal individual income tax rate, which accounts for both the statutory rate schedule and implicit tax rates that arise from special features of the tax code.
b. Refers to the marginal effective tax rate on capital, defined as the amount of taxes paid as a percentage of the pretax return on investments that are marginal (that is, just sufficient to cover financing and tax costs).
c. Refers to the first-year effective tax rate, defined as the actual first-year corporate income tax liability relative to pretax earnings, taking into account all available deductions.
d. Tax data are from the PricewaterhouseCoopers worldwide summaries of statutory corporate tax rates.

Table 2 Effect of tax reforms on tax evasion by formal firms

Country	Study	Reform	Increase in tax evasion
China	Fisman and Wei 2004	10 percentage point increase in tax rate on exports from Hong Kong SAR, China, to China[a]	30 percent (in gap between reported exports and imports)
India	James 2010	Finance Act of 2000 (marginal effective tax rates)	10.6 percent of sales

a. Tax rate is import tariff plus value added tax rate.

ated with an increase in business registrations of 1.6 per 100 people of working age.

The study by Djankov and others (2010) does not disentangle whether the increase in business registrations is due to the formalization of previously unregistered firms or to new firm creation. But within-country evidence from Brazil suggests that tax reforms can provide an incentive for informal firms to register. Fajnzylber, Maloney, and Montes-Rojas (forthcoming) show that the introduction of the "SIMPLES" tax regime—which reduced the tax rate by up to 8 percent of annual revenue for both micro and small firms and consolidated six separate federal tax and social security payments into a single monthly payment—increased the share of micro firms that are registered with the tax authorities by 7.2 percentage points.[9]

Since the SIMPLES reform in Brazil included both a simplification of payments and a reduction in tax rates, the effects cannot be clearly attributed to either change. There is no within-country study that estimates the effects of simplifying payments and reducing tax rates separately.

Improved economic performance

Several studies suggest that the increases in investment and formal firm creation resulting from tax reforms are also reflected in higher sales and GDP. In the context of the U.S. Tax Reform Act of 1986, Carroll and others (2001) find that a 10 percentage point decrease in the marginal tax rate for sole proprietors led to an increase in firm sales of about 15 percent (table 4). Similarly, Fisman and Svensson (2007) show that a 10 percentage point decrease in the effective corporate tax rate in Uganda is associated with a 15 percentage point increase in annual sales growth. The introduction of the SIMPLES tax regime in Brazil increased firm revenues by 37 percent (Fajnzylber, Maloney, and Montes-Rojas forthcoming).

Only two papers examine how corporate tax rates affect GDP growth across countries. The first, using statutory tax rates, finds no robust correlation between these rates and GDP growth (Klemm and Van Parys 2009). The second uses statutory top corporate tax rates and finds that a 10 percentage point decrease in these rates increases GDP per capita growth by 1.82 percentage points (Lee and Gordon 2005). The results of the second paper may be more reliable, since this paper includes a larger set of countries and uses an instrumental variables strategy to capture the causal effect of corporate tax rates on growth.

Table 3 Effect of tax reforms on formal firm creation

Country	Study	Reform	Increase in formal firms
Brazil	Fajnzylber, Maloney, and Montes-Rojas forthcoming	Introduction of SIMPLES	7.2 percentage points[a]
Cross-country	Djankov and others 2010	10 percentage point decrease in effective corporate income tax rate[b]	2 per 100 people of working age
		10 percent decrease in number of hours needed to comply with taxes	None
		10 percent decrease in number of tax payments	1.6 per 100 people of working age

a. Refers to the share of micro firms (urban self-employed and firms with at most five paid employees, excluding domestic workers) registered with the tax authorities.
b. Refers to the first-year effective tax rate, defined as the actual first-year corporate income tax liability relative to pretax earnings, taking into account all available deductions.

Table 4 Effect of tax reforms on economic performance

Country	Study	Reform	Increase in sales (or GDP growth)
United States	Carroll and others 2001[a]	Tax Reform Act of 1986: 10 percentage point decrease in marginal tax rate	About 15 percent
Brazil	Fajnzylber, Maloney, and Montes-Rojas forthcoming	Introduction of SIMPLES	37 percent
Uganda	Fisman and Svensson 2007	10 percentage point decrease in effective corporate income tax rate[b]	15 percentage points[c]
Cross-country	Klemm and Van Parys 2009	10 percentage point decrease in statutory corporate income tax rate	None (GDP growth)
Cross-country	Lee and Gordon 2005	10 percentage point decrease in statutory top corporate tax rate[d]	1.82 percentage points (GDP per capita growth)

a. Examines the effect of sole proprietors' personal income taxes on the sales growth of their enterprises. The measure of income taxes used is the marginal federal individual income tax rate, which accounts for both the statutory rate schedule and implicit tax rates that arise from special features of the tax code.
b. Refers to firms' reported tax payment (all types of taxes) as a share of sales.
c. Refers to sales growth, not the level of sales.
d. Rates are from the World Tax Database of the Office of Tax Policy Research at the University of Michigan.

Conclusion

Both within- and cross-country studies suggest that lowering corporate tax rates can increase investment, reduce tax evasion by formal firms, promote the creation of formal firms, and ultimately raise sales and GDP. These benefits, however, need to be balanced against other objectives of the overall tax regime. Less is known about the effects of reducing compliance costs, largely because of a lack of comparable information. The few completed papers on this topic provide suggestive evidence that simplifying taxes can increase formal firm creation and firms' sales. But more work, particularly at the within-country level, is needed in this area to allow firm conclusions.

Notes

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1. These costs usually include the cost of preparing and paying taxes (above and beyond normal business accounting) for profit tax, value added or sales tax, and payroll taxes (see also Engelschalk 2007 and International Tax Dialogue 2007).
2. For an overview, see Deloitte (2011).
3. The effective tax rates are calculated for a standardized domestic enterprise operating in each country.
4. Moldova and Chad, the countries with the lowest and highest statutory tax rates according to the World Bank's *Doing Business 2012* (2011), are not in the sample of countries covered by Djankov and others (2010).
5. A related literature examines the effects on investment of tax incentives such as tax holidays and exemptions from import duties and consumption taxes on raw materials and inputs (for an overview of this literature, see Zee, Stotsky, and Ley 2002). This literature suggests that tax incentives can stimulate investment (for example, Van Parys and James 2010). But a country's overall economic characteristics may be more important for the success or failure of industries than any tax incentive package (Zee, Stotsky, and Ley 2002). Several papers find that even if tax incentives stimulate investment, they are not cost-effective, because they entail a revenue loss that is larger than the investment they create (Chai and Goyal 2008; Zee, Stotsky, and Ley 2002).
6. See OECD (2007) and Mooij and Ederveen (2008) for an overview of the earlier literature on corporate tax rates and foreign direct investment.
7. Using statutory rather than effective tax rates, Djankov and others (2010) find no significant effect on domestic investment and a slightly smaller effect on foreign direct investment.
8. Using statutory rather than effective tax rates, Djankov and others (2010) find a slightly smaller but positive and significant effect on the number of registered businesses per 100 people of working age.
9. This corresponds to a 55 percent increase in the share of micro firms registered with the tax authorities,

though from a low base (from only 13 percent before the reform to 20.2 percent after the reform).

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