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Fiscal Incentives and Firm Performance

Evidence from the Dominican Republic

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Abstract

This paper evaluates the impact of fiscal incentives on firm performance in the Dominican Republic. In recent years, the Dominican government has approved several new corporate tax benefits. While the literature on value-added tax incentives is extensive, the impact of corporate tax incentives is less well studied and is the subject of an ongoing debate. Using firm-level panel data from 2006 to 2015, this analysis uses fixed- and random-effects models to examine the relationship between corporate tax incentives and selected firm-level performance indicators. The results reveal that corporate income tax exemptions positively impact the performance of individual firms in the Dominican Republic, but uneven tax treatment across firms distorts competition in the industrial sector, with negative effects on overall economic productivity.

Fiscal Incentives and Firm Performance:
Evidence from the Dominican Republic

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I. Introduction

Fiscal policy is among the most important means through which governments influence the business cycle. Sound fiscal policies can promote sustained and inclusive development and reinforce both social and economic stability. Tax expenditures, which are fiscally equivalent to more traditional forms of public spending, can play an important role in attracting specific types of private investment and rewarding the production of positive externalities. Tax expenditures include tax exemptions, deductions, tax holidays, and other policies that reduce the tax liability of specific sectors, firms, and individuals.

The unique features of tax expenditures have made them both popular and controversial. Unlike public spending, tax expenditures are embedded in the tax code and are not recorded as outlays in the annual budget. They increase the complexity of the tax code, which raises both the private cost of tax compliance and the public cost of tax enforcement, while expanding opportunities for fraud. Although tax exemptions are often intended to advance worthwhile policy goals, their public benefits can be difficult to gauge, while their private benefits create a strong incentive for firms and investors to lobby for preferential tax treatment, even when such treatment serves no clear policy objective.

Like many other countries, the Dominican Republic (DR) has introduced various tax expenditures designed to advance strategic development objectives. To use tax expenditures effectively, policy makers must understand how they affect firm incentives and impact performance. Over the last two decades, an extensive empirical literature has emerged on the determinants of firm productivity, competitiveness, and growth and the effect of taxation on these and other performance variables. Some studies have found that fiscal incentives can spur investment, create jobs, and generate other social and economic benefits (Bora, 2002). However, other research suggests that the costs of fiscal incentives—both in foregone revenue and via their adverse effects on governance—outweigh the benefits (Cleeve, 2008).

Microeconomic analyses have yielded mixed results. Firms that receive tax incentives appear to exhibit faster growth, better performance and a positive impact on firm productivity. However, in some cases tax incentives and subsidized credit were not correlated with changes in total factor productivity.

This paper contributes to the international literature by examining the impact of fiscal incentives on firm performance in the DR. The analysis is based on a firm-level data set from 2006 to 2015, which the Dominican authorities provided to the World Bank. It employs both fixed- and random-effects estimation techniques to investigate the relationship between recently introduced fiscal incentives and various outcome indicators selected as proxies for firm performance.

The analysis yields several important policy implications. The results show that the existing exemption regime directly affects firm performance, sector-level competition, and economy-wide productivity. Firms located in special economic zones (SEZ) receive preferential tax treatment, and these firms tend to perform better than their non-SEZ-based peers. However, the disparity in tax liability between SEZ and non-SEZ firms creates distortions that inhibit the efficient allocation of factors, resulting in two parallel production and export structures.

The paper is organized into eight sections. Following the introduction, Section II reviews the international literature on fiscal incentives and firm performance. Section III analyzes the DR's fiscal incentives related to corporate income tax (CIT), and Section IV identifies the outcome variables used to gauge firm performance. Section V describes the data set, and Section VI details the empirical methodology. Section VII presents the results and Section VIII concludes the analysis.

II. Literature Review

Many studies have attempted to evaluate the impact of fiscal incentives on firm performance. These analyses have examined fiscal incentives in a wide range of countries and for a diverse set of reasons. Examining the effect of tax incentives on firms' gross sales and value added in Uganda, Mayende (2013) found that streamlining the tax-incentive structure would improve firms' overall performance. Ohaka and Agundu (2012) concluded that tax incentives had successfully increased the productivity and competitiveness of strategic sectors in Nigeria. Using propensity score matching, Rapuluchukwu et al. (2016) found that multiple types of fiscal incentives—including import duty exemptions, profit tax exemptions, and export financing—had a positive effect on firm productivity. Czarnitzki et al. (2011) also used a non-parametric matching approach to examine the effects of research and development (R&D) tax credits on innovation among Canadian manufacturers and found that firms that received tax credits scored higher on most but not all performance indicators, as well as that tax credits lead to additional innovation output. Lee (1996) examined the impact of the Korean government's industrial-promotion and trade-protection policies on productivity growth in the manufacturing sector, finding that while trade protections such as tariffs and import restrictions were negatively correlated with value addition, capital formation, and total factor productivity, industrial-promotion policies—and tax incentives in particular—were positively correlated with increased output and higher rates of capital formation.

For governments around the world, increasing firm productivity is a critical policy goal. UNCTAD (2015) describes improving firm productivity as a path to sustainable industrial development. In some cases, policy makers may regard the strategic allocation of fiscal incentives to firms and sectors as a way to offset the negative impact of an inhospitable business environment (Gui-Diby and Renard, 2015; UNCTAD, 2015). Yet despite the flaws of fiscal incentives, policy makers continue to embrace them as a viable tool for attracting and sustaining investment. To maximize their effectiveness while managing their externalities,

some countries have attempted to directly link fiscal incentives to firm performance and narrowly tailor them to advance specific development goals (UNCTAD, 2004). Due to their diverse design features and the unique characteristics of each country's political and economic context, the impact of fiscal incentives on firm productivity varies from case to case.

III. Corporate Income Tax

CIT is the DR's second-largest source of tax revenue. From 2002-2015, CIT revenue accounted for an average of almost 20 percent of total tax revenue and was equivalent to 1.6 percent of GDP. The DR's CIT rate is among the highest in the region at 27 percent, but its revenue efficiency falls short of most comparator countries (Figure 1).

Figure 1: CIT Revenue Efficiency, the DR and Regional Comparators, 2015

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Brasil	0.207
Chile	0.162
Colombia	0.122
México	0.109
Costa Rica	0.106
Perú	0.099
Uruguay	0.094
Panamá (2014)	0.083
Paraguay	0.080
DR	0.074
Ecuador	0.071
Guatemala	0.050
Average excl. DR	0.108
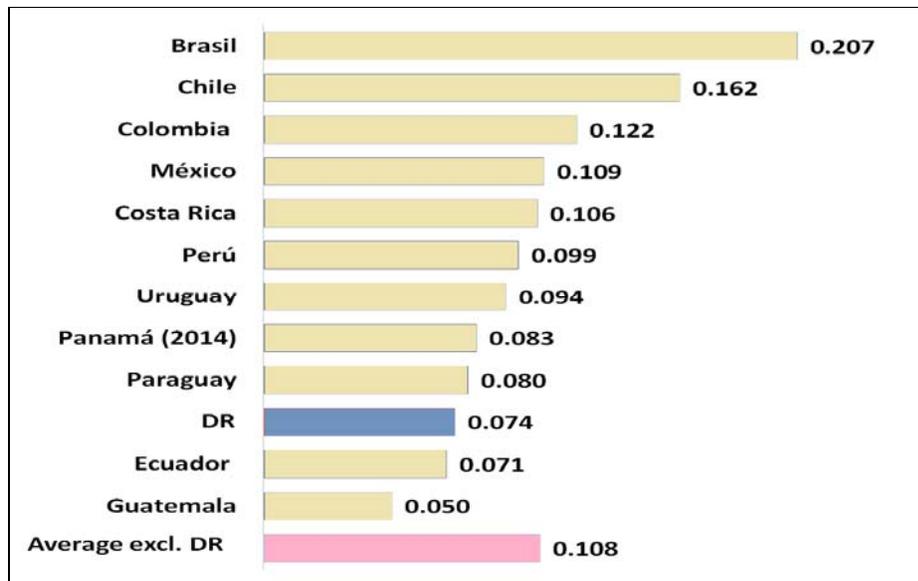
Source: World Bank staff estimates.

In the DR, tax expenditures significantly weaken revenue mobilization and further constrain the government's already limited fiscal space. Despite recent

efforts to boost tax efficiency, total public revenues reached just 14.6 percent of GDP in 2016, well below the peak of 16.6 percent observed in 2007. As a result, the DR's tax revenues are below the world average and far below the average for small states in the Caribbean (Figure 2).

Figure 2: Tax Revenue as a Percentage of GDP, the DR and Comparator Groups (2014 or most recent year)
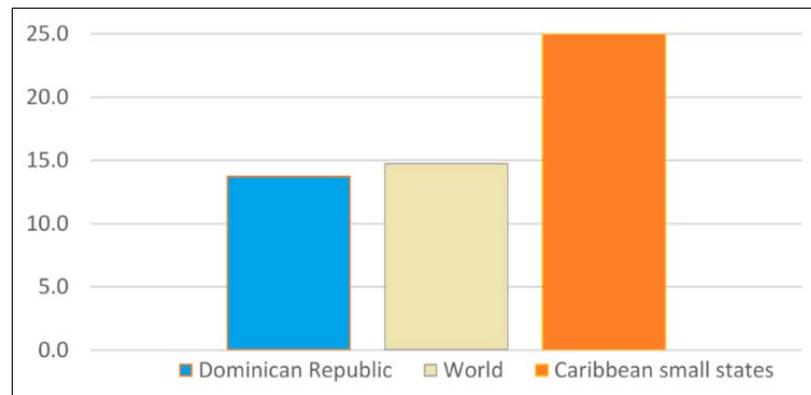
Source: World Bank's World Development Indicators (WDI)

In recent years, the DR's tax expenditures have exceeded 6 percent of GDP, and they represent a larger share of total public spending than in many comparator countries. Tax expenditures include tax exemptions, deductions, tax holidays, and other policies that reduce the tax liability of specific sectors, firms, and individuals. The DR's tax expenditures are ostensibly designed to promote various economic development objectives, and since 2008 the government has systematically monitored tax expenditures and published the estimated foregone revenue in a dedicated budget annex.

The DR's tax expenditures have become increasingly costly over time: total foregone revenue rose from 5.5 percent of GDP in 2010-13 to 6.6 percent in 2014-16. The country's National Development Strategy 2030 includes a plan to consolidate all existing tax-expenditure schemes into a single section of the tax code and to establish a coherent and sustainable approach to tax expenditures that reduces their fiscal impact and minimizes their distortive effect on economic incentives.

Table 1: Tax Expenditures as a Percentage of GDP, the DR and Comparator Countries

Country	Tax Expenditure (% of GDP)	Most Recent Year
Dominican Republic	6.5	2016
Uruguay	6,3	2014
Ecuador	4,6	2016
Chile	4,2	2016
Brazil	4.2	2016
Argentina	2.8	2016
Guatemala	2.5	2015

Source: Authors' estimates based on national authorities' data.

The largest category of tax expenditures are exemptions and deductions from the DR's value-added tax (VAT), which is known as the Tax on the Transfer of Industrial Goods and Services (*Impuesto sobre Transferencias de Bienes Industrializados y Servicios*, ITBIS). Other major tax-expenditure categories include preferential rates for fuel products, estate tax deductions, and CIT incentives. Most of the latter accrue to firms located in SEZs.

The CIT is subject to a complex and generous array of exemptions and tax credits, as well as long periods during which these exemptions can be claimed. In total, the DR's CIT expenditures equal close to 1 percent of GDP. Special CIT regimes apply to firms located in SEZs, tourism-development clusters, and specially designated regions, and many individual firms can claim additional exceptions to the standard regime. Under Law 8-1990, firms established in SEZs are fully exempt from the CIT, ITBIS, and all local taxes. Law 158-2001 exempts firms working in several tourism-development clusters from the CIT, ITBIS, and other taxes and fees. Law 195-2013 extended the tax exemption for newly established firms from 10 to 15 years. Law 28-2001 exempts firms located in border regions from the CIT and ITBIS, while Law 108-2010 provides tax incentives to firms related to the film industry, and Law 66-1997 provides

incentives to renewable-energy companies. Whereas previous studies have examined the impact of ITBIS incentives in the DR, the effects of CIT expenditures on investment and growth have yet to be fully assessed. The following analysis is designed to address that gap in the literature.

IV. The Data Set

Data from tax returns can be used to analyze whether the DR's CIT-related tax expenditures correlate with significant difference in firm-level outcome indicators. In 2016, the Ministry of Finance provided an anonymized CIT data set to the World Bank as a part of the authorities' ongoing fiscal policy dialogue. The panel data include administrative CIT declarations for 2006-2015 from more than 180,000 firms in 31 provinces. Though anonymized, the data set contains important information about firm characteristics, including the economic sectors in which the firms operate, their ownership and capital structures, and their performance as measured by the outcome indicators described below. The data set also records estimated forgone CIT revenue for each firm—i.e., the amount of tax each firm did not pay due to fiscal incentives. Researchers rarely have access to such extensive and detailed tax information, and analyzing this data set may yield important insights into the much debated but still ambiguous relationship between tax incentives and firm performance.

V. Outcome Indicators

To estimate the impact of CIT exemptions, multiple outcome indicators were selected as proxies for firm performance. Profitability and firms' performance are the major aspects of firm welfare. The profits of firms translate into income for shareholders and generate spillover and multiplier effects at the individual, household, and economy-wide level. Profitable firms attract more investors and raise greater amounts of capital to finance larger and more sophisticated

projects. Profitable firms also tend to employ more workers and have a greater impact on growth and poverty reduction.

In this respect, measuring business performance is a way to assess the company's survival and development capability. In such a large field of study, we can distinguish two main research areas: the first – focusing on financial information – draws attention to quantitative performance measures expressed through monetary metrics, the second – defined as non-financial information – focuses on non-monetary terms, which are typically more difficult to quantify.

This analysis follows the first approach and assesses firms' performance against a set of quantitative measures derived from the enterprises' financial position. More in detail, the variables selected as outcomes are financial indicators reflecting various aspects of the firm setup, such as the degree of liquidity and profitability, the operating structure turnover and capitalization. The financial outcome indicators, which are proxies for firm performance, include measures of liquidity, operating structure, profitability, capitalization, and turnover (Table 2).

Table 2: Outcome Indicators

Term	Variable	Indicator Type
Liquidity	Current Assets to Fixed Assets	Liquidity
Expenses to Total Assets (ETA)	Expenses to Total Assets	Operating Structure
Gross Financial Expenses to Sales (GFSAL)	Financial Expenses to Sales	Operating Structure
Return on Assets (ROA)	Net Income to Total Assets	Profitability
Equity Ratio	Equity to Total Assets	Profitability
Capitalization	Current Assets to Total Assets	Size and Capitalization
Turnover	Sales to Current Assets	Turnover

The outcome indicators include one measure of liquidity that is the ratio of current assets to fixed assets, and two variables related to the firm's operating structure, the ratio of expenses to total assets (ETA) and the ratio of gross financial expenses to sales (GFSAL). In addition, the return on assets (ROA) is a measure of profitability that is not affected by whether the assets are financed by creditors or shareholders, and the equity ratio represents an additional measure of profitability. Finally, the ratio of current assets to total assets is a measure of firm size and capitalization, while the ratio of sales to current assets measures turnover. These seven outcome indicators are the dependent variables of the analysis.

Several additional firm characteristics are used as explanatory variables. These include: first of all, the main variable of interest that is the Corporate Income Tax; then the capital stock, which sums the value of a firm's machinery and equipment and reflects its productive capacity (Arnold, Mattoo and Narciso (2008), Clarke (2012), and Rapuluchukwu et al. (2016)); then, the value of buildings, which reflects the quality of a firm's facilities and environs; the average wage (i.e., total wages divided by the number of employees), which can be used as a measure of human capital (Arnold, Mattoo and Narciso, 2008); and finally the value of urban land owned by the firm is treated as a proxy for firm size.

Firm size is an especially crucial explanatory variable, because larger firms tend to have greater productive capacity and resources, which enables them to take advantage of economies of scale. Large firms are also more likely to have access to qualified personnel. They tend to be more diversified, and are generally better able to weather economic shocks. Consequently, firm size is positively correlated with profitability. Confirming Baumol's size-profits hypothesis, Hall and Weiss (1967) found a positive relationship between firm size and firm profitability, and this relationship was further supported by the findings of Nunes et al. (2008) and Babalola (2013).

For robustness, additional other explanatory variables are also included in the analysis. The impact of a firm's geographic location is accounted for by dividing the country into six geographic areas in which all firms enjoy broadly similar locational advantages. Whether a firm is based in the DR's capital, Santo Domingo, has an especially significant bearing on its performance. The descriptive statistics for both dependent variables (Table 3) and explanatory variables (Table 4) are presented below.

Table 3: Dependent Variables

Variable	Observations	Mean	Std. Dev.	Min.	Max.
Liquidity	152539	452.7127	43472.59	0	9794902
ETA	152345	3908.082	1524169	0	5.95e+08
GFSAL	51854	5861.952	657256.8	0	1.37e+08
ROA	147588	5715.281	2193503	0	8.43e+08
Equity ratio	177467	5062.833	2117414	-2.68e+07	8.91e+08
Capitalization	177467	2775.25	1162363	0	4.90e+08
Turnover	56888	136.6663	27198.42	0	6482700

Table 4: Explanatory Variables

Variable	Observations	Mean	Std. Dev.	Min.	Max.
Capital Stock	177718	9.526833	6.368259	0	23.8156
Building	177718	4.87556	7.150494	-4.60517	22.95731
Average Wage	119467	11.55371	2.627568	-5.298317	21.51366
Urban Land	177718	3.135041	6.078879	0	23.28848

VI. Methodology

One methodology to evaluate public policies and programs is represented by "true" or "natural" experiments based on random assignments, as they offer a strong foundation for analyzing causal relationships (Lalonde, 1986).

In experimental designs of this type, units are randomly assigned to treatment and control groups. On average, the units in each group share common characteristics. Thanks to this equivalence, the influence of external factors on the observed results can be excluded, and hence, any differences in the observed results among the treatment and control group can be attributed exclusively to the implementation of the public program under consideration.

However, this type of experimental framework is generally not applicable to corporate taxation, because treated and non-treated firms often do differ in ways that may affect the results of the analysis (i.e. selection biases). The evaluation of public programs therefore requires an alternative methodological specification: a quasi-experimental approach that compares the results between the treatment and the control groups, while bearing in mind that not all the treatments are randomly assigned.

Due to the need of controlling for unobserved heterogeneity, this paper examines the effects of tax incentives on firm performance indicators by employing both fixed-effects (FE) and random-effects (RE) estimation techniques. As noted above, the indicators of firm performance (i.e., the dependent variables) include liquidity, the ETA, GFSAL, ROA, the ratio of equity to total assets, capitalization, and turnover. Based on this information, the following equations can be estimated:

$$Y_{it} = \beta Tax_{it} + \delta Z_{it} + \mu_i + \varepsilon_{it} \qquad (1)$$

Where

- Y_{it} is a dependent variable for firm i at time t, separately indicating each of the financial indicators used as proxies for firm performance.

- Tax_{it} is a dummy variable indicating whether the firm receives CIT incentives, which takes value one if the firm receives the Fiscal Incentive, or zero otherwise.

- Z_{it} is a vector of firm-level explanatory variables such as the capital stock, the value of buildings, the average wage, the value of urban land owned by the firm, and a dummy for the geographic area in which the firm is located.

- μ_i represents unobserved heterogeneity due to firm-level differences in efficiency and managerial skill. And

- ε_{it} is an error term assumed to be independently and identically distributed with a mean of zero and a variance of σ^2.

The FE and RE techniques provide an explanation of the dependent variable in different ways. In FE estimations, individual effects are considered fixed and are included among the explanatory variables in the "constant individual." In RE estimations, individual effects are a component of the error term. The analysis assumes that explanatory variables are independent of all error terms in both the FE and RE estimations.

Because the FE approach is conditional on the μ_i values, it is most appropriate in cases where individual subjects are "special" and cannot be thought of as a random extraction from a population. This may be the case when, for example, i indicates states or regions, large corporations, or economic sectors. In these cases, the inferences generated by the FE approach would only apply to the individuals in the sample. By contrast, when individual subjects can be thought of as random extractions from a larger population, the individual characteristics are a component of the population variability and the inferences generated by the RE approach are related to the entire population.

In short, a first reason why the FE estimator may be preferred to the RE estimator relies in the possible information provided by μ_i. This is typically the case, if individuals in the sample are relatively small and have a specific nature, so their identification is relevant.

There are also situations in which the FE approach is preferable, even if the number of individuals in the sample is relatively high and the analysis is attempting to draw inferences about the larger population. This occurs when μ_i and Z_{it} are related. In the present analysis, if μ_i summarizes information on individual firm characteristics, such as managerial skill, corporate culture, and organizational structure, then it is reasonable to assume that these characteristics are related to the explanatory variables. In this case, the RE approach would provide inconsistent estimators, while the FE estimator, obtained by eliminating μ_i from the model, would remain consistent.

Generally, the choice between estimation techniques depends on the test developed by Hausman (1978).[5] However, the RE model has an inherent advantage over the FE model, as it allows for the explanatory variables to remain constant over time, whereas they get swept away under a fixed effects estimation. Due to the presence of time-invariant explanatory variables, this analysis applies both the FE and RE techniques.[6]

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[5] The Hausman test can help choose between a fixed effects model or a random effects model. The null hypothesis is that the preferred model is random effects; the alternate hypothesis is that the model is fixed effects. Essentially, the test seeks to identify if there is a correlation between the unique errors and the regressors in the model. The null hypothesis is that there is no correlation between the two.

[6] Mayende et al. (2013) employed a similar strategy, estimating the production function that can generally be estimated using both RE and FE techniques; the choice depends on the test developed by Hausman in 1978. Mayende et al. employed only the random effects estimator due to the time-invariant explanatory variables.

VII. Results

The results of the FE estimation show that receiving a CIT tax incentive is positively correlated with higher liquidity (Table 5), and higher liquidity implies less willingness to assume risk and therefore lower expected returns. However, these results are not confirmed by the RE estimation (Table 6). Correlations with both ETA and GFSAL are positive, but an increase in the latter would imply either that expenses are rising relative to sales or that sales are declining relative to expenses. These are among the indicators that firm managers may look at to assess whether to cut costs or determine why sales have declined.

The results show that CIT incentives positively affect ROA, indicating that beneficiary firms more effectively use assets to benefit shareholders (Haniffa & Huduib, 2006; Ibrahim & Abdul Samad, 2011). Similarly, CIT incentives are positively correlated with an increase in the equity ratio, which signals to potential shareholders that the company is worth investing in. Moreover, a higher equity ratio shows potential creditors that the company is financially sustainable and less risky as a borrower. CIT incentives are also positively correlated with capitalization (i.e., the value of current assets to total assets), indicating that beneficiary firms devote a larger share of their assets to working capital. Finally, CIT exemptions are positively correlated with higher levels of turnover, implying stronger sales and/or larger discounts. All of these results are robust in the RE estimation (Table 6).

As expected, firms with higher average wages, a larger capital stock, and more valuable urban real estate tend to perform better than their peers. These variables are associated with lower levels of liquidity (implying greater appetite for risk), but are not significantly correlated with turnover. These results are confirmed by the RE model. The most relevant implication of the RE estimation is that location in Santo Domingo is correlated with higher levels of liquidity (implying less appetite for risk), but also higher values for ROA, capitalization, the equity ratio, and turnover. By contrast, firms located in the Eastern regions do not present particularly interesting results (with the exception of a positive

effect on the ratio between the Expenses to Assets (ETA) and the Financial Expenses to Sales (GFSAL)).

Table 5. CIT Incentives and Firm-Level Outcome Indicators, Fixed-Effects Estimation

Variables	(1) Liquidity	(2) ETA	(3) GFSAL	(4) ROA	(5) Equity Ratio	(6) Capitalization	(7) Turnover
Tax	45.41*	32,900**	5,936***	47,718**	49,272**	27,158**	5.427*
	(23.67)	(15,792)	(1,473)	(22,777)	(23,677)	(12,935)	(3.063)
Average Wage	40.76*	1,432*	-2,943*	2,072**	1,945	1,177*	6.688**
	(22.24)	(705.4)	(1,623)	(1,009)	(1,225)	(581.4)	(2.996)
Equipment	-248.5*	177.9*	-6,031	267.8*	441.2***	147.3*	-0.295*
	(130.6)	(101.2)	(3,764)	(157.2)	(141.7)	(82.86)	(0.171)
Building	-110.4*	161.9	2,170*	248.5	242.0	133.6	0.00268
	(57.04)	(118.5)	(1,114)	(178.2)	(178.8)	(97.40)	(0.195)
Urban Land	9.340*	56.63***	-738.8*	74.14***	88.23***	46.68***	0.555
	(4.942)	(20.41)	(396.3)	(24.28)	(29.07)	(16.67)	(0.650)
Constant	3,942**	-32,489*	113,209*	-47,189*	-50,162*	-26,768*	-56.54*
	(1,788)	(18,846)	(64,725)	(27,191)	(27,286)	(15,484)	(30.69)
Observations	109,383	114,223	43,340	112,240	114,223	114,223	45,122
R-squared	0.000	0.000	0.001	0.000	0.000	0.000	0.001
Number of Enterprises	13,612	14,017	11,927	13,880	14,017	14,017	12,169
Method	FE	FE	FE	FE	FE	FE	FE

Notes. The treatment variable is the tax incentive. The independent variables are the average value of wage, the value of equipment, the value of building and the value of urban land. Standard errors are reported in parenthesis.
*** Significant at the 1 percent level. ** Significant at the 5 percent level. * Significant at the 10 percent level

Table 6: CIT Incentives and Firm-Level Outcome Indicators, Random-Effects Estimation

Variables	(1) Liquidity	(2) ETA	(3) GFSAL	(4) ROA	(5) Equity Ratio	(6) Capitalization	(7) Turnover
Tax	-97.52*	20,335**	13,311***	29,980**	30,096*	16,777**	8.108**
	(55.11)	(10,225)	(5,016)	(15,028)	(15,613)	(8,385)	(3.510)
Capital	963.1***	10,031***	13,965***	14,359***	14,926***	8,252***	14.31***
	(73.41)	(281.0)	(1,060)	(401.3)	(503.2)	(234.3)	(0.780)
Center	-80.30	-44.16	-3,680**	-519.1	22.75	-32.93	-5.837***
	(187.4)	(1,170)	(1,578)	(1,820)	(1,806)	(961.7)	(1.825)
West	-40.39	-766.6	-4,986**	-1,309	-973.4	-627.3	0.787
	(68.47)	(919.8)	(2,496)	(1,429)	(1,462)	(758.2)	(3.821)
East	-230.3	-1,436*	-6,368**	-1,137	-2,005	-1,185*	2.176
	(144.5)	(775.7)	(3,057)	(993.7)	(1,278)	(636.5)	(3.873)
South	70.08	-223.1	357.5	-657.4	-1,060***	-131.5	1.083
	(63.53)	(241.6)	(612.9)	(498.6)	(375.4)	(201.5)	(1.375)
Average Wage	37.28*	-57.61	-869.8*	-102.7*	207.8	-44.66	1.564*
	(20.15)	(35.36)	(460.5)	(57.66)	(317.6)	(30.24)	(0.921)
Equipment	-291.3*	635.9*	-3,426*	953.8*	1,012*	524.8*	-1.417**
	(154.7)	(383.0)	(2,027)	(573.0)	(528.4)	(314.3)	(0.670)
Building	-66.88*	586.5*	826.5*	892.9*	882.0*	481.9*	0.730
	(34.82)	(302.8)	(442.4)	(460.8)	(452.3)	(249.9)	(0.470)
Urban Land	13.99**	1,264*	-402.2**	1,867*	1,891*	1,040*	-0.638
	(6.583)	(705.3)	(193.3)	(1,044)	(1,060)	(580.9)	(0.466)
Constant	3,988*	-26,930*	55,784*	-39,413*	-46,783***	-22,231*	10.74***
	(2,104)	(14,761)	(31,150)	(21,573)	(17,538)	(12,101)	(1.955)
Observations	109,383	114,223	43,340	112,240	114,223	114,223	45,122
Number of Enterprises	13,612	14,017	11,927	13,880	14,017	14,017	12,169
Method	RE	RE	RE	RE	RE	RE	RE

Notes. The treatment variable is the tax incentive. The independent variables are dummies for geographic area, the average value of wage, the value of equipment, the value of building and the value of urban land. Standard errors are reported in parenthesis.

*** Significant at the 1 percent level. ** Significant at the 5 percent level. * Significant at the 10 percent level.

VIII. Policy Conclusions

The analysis presented above reveals clear and compelling evidence of a statistical correlation between CIT incentives and firm performance in the DR. Firms that receive incentives systematically outperform their peers on a wide range of financial metrics, indicating that they enjoy a strong competitive advantage. In light of these results, the Dominican authorities should consider leveling the playing field by reducing or eliminating CIT incentives. Firms located in SEZs benefit most from fiscal incentives, and they receive a full and permanent exemption from CIT. As the analysis shows, the existing CIT exemptions regime directly affects firm performance, with negative implications for competition and overall economic productivity. Reducing the asymmetry in tax treatment between SEZ and non-SEZ firms could alleviate distortions as a first step toward phasing out the DR's dual production and export structure.

The analysis also reveals that CIT incentives disproportionately benefit larger enterprises, which likely contributes to the DR's elevated levels of market concentration. A recent study by the DR's General Directorate of Internal Revenue (*Dirección General de Impuestos Internos*)[7] found that 35 percent of the DR's markets are highly concentrated, and 10 percent are moderately concentrated. In the industrial sector, 43 percent of markets are highly concentrated, while the agricultural sector shows little-to-no evidence of market concentration. Although market concentration by itself does not necessarily inhibit competition or reduce productivity, the DR's highly concentrated secondary and non-tradable sectors—coupled with its generous system of tax incentives—may entrench the advantages of larger firms over smaller competitors and entrepreneurs.

CIT incentives are only one aspect of the preferential treatment accorded to SEZ-based firms, which also receive customs exemptions, capital allowances, and other benefits. SEZs have successfully attracted international investors, but their

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[7]
https://www.dgii.gov.do/informacionTributaria/publicaciones/estudios/Documents/ConcentracionMerado2016.pdf.

low-tax value chains also impose costs on the DR through foregone revenue and economic distortions. A recent World Bank analysis found that the presence of SEZs and other forms of preferential tax treatment strongly encourage various forms of tax avoidance, which contributes to informality and further undermines revenue performance. [8] The government may consider reassessing the costs and benefits of SEZs and other fiscal incentives, and developing a plan to improve their effectiveness and gradually reduce disparities in tax treatment.

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[8] Gearing up for a more efficient tax system in the Dominican Republic, World Bank January 2018.

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