

**FUNDAÇÃO GETULIO VARGAS**  
**ESCOLA DE ADMINISTRAÇÃO DE EMPRESAS DE SÃO PAULO**

**PEDRO LANDIN MALT**

**HOW DOES FOREIGN CAPITAL PARTICIPATION AFFECT  
BRAZILIAN COMPANIES' PERFORMANCE?**  
*INVESTIGATION OF FOREIGN DIRECT INVESTMENT'S IMPACT ON HOST COUNTRY*

SÃO PAULO

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Dissertação apresentada à Escola de  
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Fundação Getúlio Vargas como requisito para  
obtenção do título de Mestre em Gestão  
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Campo do conhecimento: Finanças Corporativas

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## ABSTRACT

In this dissertation, we investigate the effect of foreign capital participations in Brazilian companies' performance. To carry out this analysis, we constructed two sets of model based on EBITDA margin and return on equity.

Panel data analysis is used to examine the relationship between foreign capital ownership and Brazilian firms' performance. We construct a cross-section time-series sample of companies listed on the BOVESPA index from 2006 to 2010.

Empirical results led us to validate two hypotheses. First, foreign capital participations improve companies' performance up to a certain level of participation. Then, joint controlled or strategic partnership between a Brazilian company and a foreign investor provide high operating performance.

## TABLE OF FIGURES

Figure 1: Foreign direct investment inflows in Brazil from 1990 to 2010.....	9
Table 1: Summary of studies related to foreign capital participations and firm performance .	14
Table 2: Summary of the variables.....	20
Table 3: Models results .....	23
Table 4: Hausman test .....	23
Table 5: Dependent variables .....	28
Table 6: Explanatory variables (1/2) .....	28
Table 7: Explanatory variables (2/2) .....	28
Table 8: Fixed-effect and random effect models results .....	29

## TABLE OF CONTENTS

1	FOREIGN DIRECT INVESTMENT IN BRAZIL.....	9
2	LITERATURE REVIEW.....	11
2.1	Causality of ownership structure and performance .....	11
2.2	Foreign direct investment and firms' performance.....	12
3	METHODOLOGY.....	15
3.1	Data collection .....	15
3.2	Empirical Model .....	15
4	EMPIRICAL RESULTS.....	21
4.1	EBITDA models .....	21
4.2	ROE models .....	22
5	CONCLUSION.....	24
6	REFERENCES.....	25
7	APPENDICES.....	28

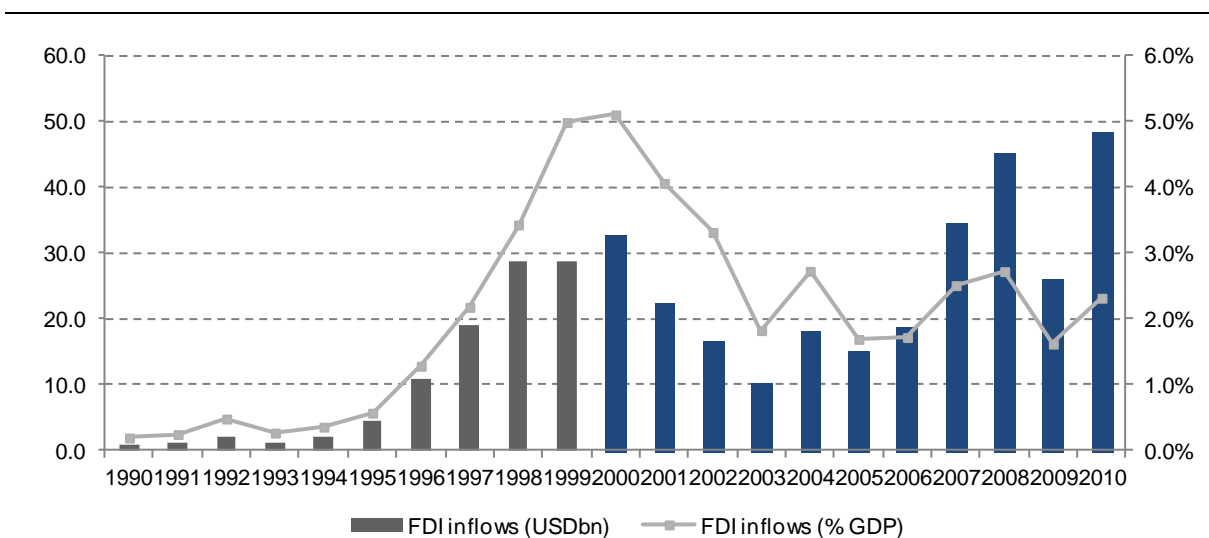


## 1 FOREIGN DIRECT INVESTMENT IN BRAZIL

According to the Centre for Economics and Business Research (*CEBR*) statistics, Brazilian economy became in December 2011 the sixth largest economy in the world. As one of the fastest growing emerging economies in the world, Brazilian companies have witnessed a growing interest from foreign investors. Foreign direct investment inflows as well as mergers and acquisitions activity surge are relevant examples for Brazilian economy attractiveness.

Indeed, over the last five years, foreign direct investment accounted for on average c. \$48.5bn (Figure 1) representing more than 2.0% of total gross domestic product over the last four years. FDI inflows' surge and growing interest in Brazilian economy are attributed to the economy stabilization, the lower rate of inflation, higher technological development and an increase in domestic demand,

**Figure 1: Foreign direct investment inflows in Brazil from 1990 to 2010**



Source: OECD International direct investment database, Eurostat, IMF.

Therefore, it is critical to understand the benefits and side effects of these inflows on the host country. Gauging FDI's impacts will enable policymakers decide efficiently the appropriate path to follow, which implies implementing mechanisms to reduce side effects and promote best allocation of these inflows. The vast majority of research on FDI has investigated the issue from a macroeconomics standpoint, which involves, for instance, the investigation of phenomenon such as technology spill over and crowding out effect.

Regarding technology spillover, this phenomenon has been widely analyzed by the literature, showing that multinational enterprises (MNEs) benefit the economy through technological enhancement. Johnson (2006) supports and demonstrates that technology spillover through FDI enhances host country growth. However, studies conducted by De Mello (1999), Borensztein et al. (1998) and Bengoa, M. and Sanchez-Robles, B (2003) established that the overall effect of FDI inflows in host country mainly depends in host country characteristics, such as the current level of maturity, the current technological level, as well as the level of human capital.

Our study intends to adopt a microeconomic perspective on analyzing FDI's impact on host country and more specifically on Brazilian listed companies.

As few studies have addresses the issue of foreign capital participations' impact on Brazilian companies, we then intend to fill this gap. Moreover, what distinguishes our approach from previous studies in the same field, is the inclusion of a variable that gauge the performance of joint-venture between Brazilian and foreign investors against companies with minority or majority foreign capital participations. To this end, based on prior literature, we set three hypotheses. The first hypothesis states that firms with foreign capital participation perform better than domestics one. Then, we state that the influence of foreign capital participation differs according to different thresholds. Finally, we analyze differences between foreign companies and institutional investors as shareholder.

This dissertation is organized as follows. First section sets the theoretical background and discusses prior studies' results. Second section examines the relationship between foreign capital participations and firm performance. Third section presents the empirical results. Finally, last section provides a summary and a conclusion.

## 2 LITERATURE REVIEW

### 2.1 Causality of ownership structure and performance

Regarding causality of ownership structure and firms' performance two main approaches have been identified from current literature.

First approach assumes that ownership structure is an outcome from shareholders' optimizing behavior (Demsetz and Lehn, 1985). Hence, that view considers ownership variable as endogenous to a model. It depends on firms' performance and industry characteristics. In a competitive market, market forces will ensure that every company reaches an ownership structure that maximizes firm's value. Demsetz and Villalonga (2001), illustrate this phenomenon saying that: *"A leveraged buyout of non- management shares by management is an extreme example of how expected performance can cause ownership structure to change"*. Demsetz and Villalonga (2001) reinforce the idea of ownership as an endogenous variable by analyzing the role played by different types of shareholders: insiders (i.e. management) and the five largest shareholders.

On the other hand, second approach considers that there is a relationship between ownership structure and firms' performance whether positive or negative.

Positive relationship supported by Agrawal and Knoeber (1996), Kaserer and Moldenhauer (2005), Boubakri Cosset and Guedhami (2005) highlight that ownership can be used to reduce agency problems then increase firm's performance. In Agrawal and Knoeber (1996) and Kaserer and Moldenhauer (2005), for instance, ownership (i.e. insider ownership, institutional and blockholder shareholding) is analyzed among other mechanisms to reduce agency problems. Their findings suggest that shareholding may increase firms' performance due to: (i) a "convergence-of-interest" between management and firm's maximizing value, and (ii) a better monitoring of managers from institutional shareholders and blockholders (i.e. defined as shareholders with stake of at least 5%).

Negative relationship supported by Kirchmaier and Grant (2005), Thomsen et al. (2006) studies highlight the fact that even if concentrated ownership and insider ownership provide better control, on other hand it comes with large costs for minority shareholders. Indeed, they emphasize that power could be used to expropriate minority shareholders, hence not maximizing firm value. Moreover, Kirchmaier and Grant (2005) paper point out that concentrated

ownership leads to *“the possibility of empire building by some companies, where it would be better to return this money to shareholders”*.

## **2.2 Foreign direct investment and firms’ performance**

Studies pointing out the effect of foreign direct investment in domestic companies’ performance against domestic owned firms were carried out on both developed countries and on emerging economies. Conclusions drawn from these prior studies mainly support the idea that there is a positive relationship, which led us to set our first hypothesis.

Regarding profitability, studies (Piscitello and Rabbiosi (2005), L.N. Wilmore (1986)) pointed out major benefits from foreign ownership: superior technology and internal spillover as domestic firm becomes part of an international network, use and access of intangible assets, better trainings. Newfarmer, R. S. & Marsh, L. C. (1981) brings a different perspective concluding that domestic firms are more sensitive to local characteristics, then, are more inclined to adapt and react to new behaviors. This leads domestic companies to perform better than foreign ones.

### **Hypothesis 1: Firms with foreign capital participation outperform domestic one**

More recently, studies have analyzed the relationship between different level of foreign investors’ participation (i.e. minority and majority stake) and firms’ performance (Gurbuz, A.O. and A. Aybars (2010), Aydin et al. (2007) and Yudaeva et al. (2003)).

Important conclusion drawn from these studies is that there is not a systematic linear relationship between foreign investors’ participation and firms’ performance. In other words, these studies show that the relationship is bound to a certain level of participation. For instance, in Gurbuz, A.O. and A. Aybars (2010), Turkish companies with foreign minority participations (defined as participations between 10-50%) outperformed domestic firms in terms of operational performance (defined as EBITDA / Total Assets), while companies with foreign participations as majority shareholders underperformed the sample

## **Hypothesis 2: Influence of foreign capital participation differs according to the level of participation**

Regarding papers focusing on Brazilian corporations, few studies have been carried out on our issue. Most of the papers approach the issue in a broader perspective which is the relationship of ownership structure and firm's value. For instance, Rapaport, M and Sheng, H.H. (2010) examines the ownership structure of a sample of Brazilian listed companies and its causality with firm value. The research concludes that in Brazil firm value can affect ownership concentration. Among the studies related to Brazilian companies in our field we only find the articles of L.N. Wilmore (1986) and Newfarmer, R. S. & Marsh, L. C. (1981).

Below we have summarized and sorted prior literature according to their conclusions (i.e. positive relationship, negative or no relationship between foreign investors and firm's performance). Moreover, we pointed out independent variables used to measure performance as well as how these studies measured foreign ownership.

**Table 1: Summary of studies related to foreign capital participations and firm performance**

Study	Sample	Measure of foreign ownership	Measure of performance	Comments
<b>Positive relationship between foreign capital participations and firm performance</b>				
L.N. Wilmore (1986)	282 pairs of foreign owned and private Brazilian firms in 1978	Only fully owned subsidiaries	Value added; Productivity; Skill intensity; Capital intensity	More efficiently managed than private Brazilians firms
Boardman et al. (1997)	500 largest Canadian firms in 1986 and 1991	Foreign stake > 40%	ROA; Productivity	MNE subsidiaries perform better than domestic firms
Goethals J. and Ooghe H. (1997)	50 foreign and 25 local firms in Belgium	-	-	Foreign companies outperform domestic ones
X. Liu (2000)	191 branches of Chinese industry in 1997	Only fully owned subsidiaries	Value added	Higher efficiency and operational performance
J. S. Crystal et al. (2002)	Bank industry in Latin America from 1997 to 2000	Only fully owned subsidiaries	Total Loans; Total Deposits; Capital; ROA	Foreign ownership may provide a positive influence on the stability and development of banking systems
Dimelis and Louri (2002)	4,056 manufacturing firms in Greece in 1997	-	Productivity	Positive effect on labor productivity
Douma et al. (2002)	1005 firms listed in the Bombay stock Exch. from 1990 to 2000	As disclosed, no minimum threshold	ROA/ Tobin's Q ratio	Positive relationship between foreign investment and performance
Yudaeva et al. (2003)	Russian firms from 1992 to 1997	Less 30% 30-49% 50-90% More than 90%	Productivity	Foreign firms are more productive than domestic ones
Piscitello and Rabbiosi (2005)	129 foreign and domestic acquisitions in Italy, from 1995 to 1997	Only fully owned subsidiaries	Labor productivity; Value added	Foreign acquisitions increase local target companies' labor productivity
Wiwattanakantang Y., (2006)	270 firms listed in the stock exchange of Thailand in 1996	Foreign stake > 25%	ROA; Tobin's Q ratio	Foreign controlled firms have higher ROA, relative to firms with no controlling shareholder
Aydin et al. (2007)	Firms listed in the Istanbul Stock Exchange from 2003 to 2004	3 ranges used: 0-100% 25-100% 50-100%	Operating profit margin; ROA; ROE	Perform better in respect to ROAs
Gurbuz, A.O. and A. Aybars (2010)	205 firms listed in the Istanbul Stock Exchange from 2005 to 2007	2 ranges used: MIN : 10-50% MAJ > 50%	EBITDA/total assets; ROA	Foreign participations improve financial performance up to a certain level
<b>Domestic firms outperform foreign company</b>				
R. S. Newfarmer and L. C. Marsh (1981)	Brazilian electrical industry	-	-	Brazilian firms are more profitable than multinational corporations
Hsiu-Ling Wu et al. (2007)	14 Chinese banks from 1996 to 2004	Less than 25% due to Chinese threshold regulation	ROA	ROA for banks that have foreign shareholders is on average lower
<b>No significant relationship between foreign capital participations and firm performance</b>				
Barbosa and Louri (2005)	523 manufacturing firms in Portugal in 1992	Foreign stake > 10%	Net ROA; Gross ROA	Performance is not affected by foreign ownership
Gedajlovic et al. (2005)	247 Japan's largest manufacturers from 1996 to 1998	-	ROA; Dividend Payout; Profitability; Market Risk	No significant relationship

### **3 METHODOLOGY**

#### **3.1 Data collection**

As mentioned earlier, our analysis is carried out on non-financial companies member of BOVESPA index, which according to BMF Bovespa statistics represents more than 80% of the number of trades and 70% of the sum of all companies' capitalization on BM&FBOVESPA's market.

Two sets of data are required to run the analysis, companies' ownership structure and companies' financial performance historical data.

Financial performance data are extracted from Thomson Reuters Worldscope database.

Ownership structure data is taken from Lionshares database on a quarterly base from 2000 to 2011. Some adjustments were made in order to build the sample of shareholders, Brazilian and foreigners, with an active governance role. Indeed, as our objective is to measure the influence of foreign investors in a firm performance, we needed to build a sample with only probable active foreign investors, so we made the adjustments described below:

- Shareholders excluded are funds with small participations (i.e <5%)
- Adjusted for specific situation, as participations detained by a joint venture holding with Brazilian and foreign investors (i.e: Pão de Açúcar which is run through a French and Brazilian holding: "Wilkes Participação", Valepar which holds a participation in Vale and is jointly detained by Brazilian shareholders and foreign investors, etc.).
- Moreover, as most of the Brazilian listed companies have different sorts of shares (common and preferred), we took into account total capital, i.e. ordinary and preferred shares.

Some companies are excluded due to the lack of historical data, which left us with a final sample of 54 companies from 2006 to 2010 (on an annual basis) and 267 observations.

#### **3.2 Empirical Model**

In this study, panel data allows us to analyze the performance of Brazilian companies overtime with our sample of pooled cross-section and time series data. Indeed, the use of panel data analysis is widespread on the literature related to foreign ownership impact on performance.

To carry out our study we set two models which will help us assessing the effect of foreign investors' participations in Brazilian companies. In these two models, only the independent variables, as defined below, vary. Control variables are used on both models. For each models we will construct a fixed-effect and random-effect. Choice between fixed-effect and random-effect model is based on a Hausman test (Hausman 1978), which null hypothesis is no significant difference between both. Hence, we will use a fixed effect model for a p-value lower than 0.05, otherwise random effect model will be used.

Two variables are used to measure firm performance, or as dependent variable. Return on equity (*ROE*) besides being widely used in studies (as in Aydin et al. (2007)) in the same area, this variable reflects a firm profitability and return for investors. EBITDA margin (*EBITDAM*), even if not widely used on prior studies, we believe is a ratio that best reflects a firm's operational performance and being also a good proxy to cash generation capacity.

Five variables are used in our two sets of models, which will help us to shed light on the relationship between foreign capital participations and firm' performance, are set as explanatory (or independent) variables:

- *FRPERCENT*, refers to the percentage of shares held by foreign shareholders. This variable is widely used in prior studies as in Aydin et al. (2007), Gurbuz, A.O. and A. Aybars (2010) and Boardman et al. (1997)

As discussed in the previous part, dedicated to the literature review, statistical relationship between ownership and firms' performance is not necessarily linear. In order to take into account this conclusion reach by prior studies, we decided to test two sets of model. First set of model (MODEL 1) intends to test whether there is a linear relationship between foreign capital participations and firms' performance. In other words if firm's performance increases as foreign capital participations increases



Second set of model (MODEL 2) allows us to test and illustrates a relationship between foreign capital participations and firms' performance according to different level of participations: minority stake, joint venture and majority stake. In other words, we test whether firms' performance behave differently according to the three ranges of participation. To address this issue we breakdown FRPERCENT variable into three dummy variables, described below.

- *MIN* dummy variable captures the presence of foreign capital participations, from 5 to 30% (value: 1, otherwise 0), into a company. According to prior studies (i.e. in Gurbuz, A.O. and A. Aybars (2010) and Yudaeva et al. (2003)), minority variable threshold is set between 5 or 10% until 30% or 50%.
- *BLOCK* dummy variable captures the presence of a joint-venture or strategic partnership agreement between BOVESPA listed companies and foreign investors (value: 1, otherwise 0), which represents participations of 30% to 50%.
- *MAJ* dummy variable captures the presence of foreign investors as majority shareholders into a company. Minimum threshold required is set to 51% (value: 1, otherwise 0). Prior studies (Aydin et al. (2007), Gurbuz, A.O. and A. Aybars (2010), Yudaeva et al. (2003)) also consider 51% as a threshold to describe majority stake into a company.

Control variables are used to detect other possible determinants of performance not translated by ownership structure. We decided to use the control variables below, which are widely used in prior studies as cited in the previous section related to the literature review (As in Wu, Hsiu-Ling, Chen et al. (2007), Gurbuz, A.O. and A. Aybars (2010), Douma, George and Kabir (2002), Piscitello and Rabbiosi (2005)):

- *AGE* of the company. We defined age of the company according to the foundation date reported by the company. According to the learning curve effect and first mover advantage, age of the company can have a positive impact on firm performance. On the other hand, older companies can lack of flexibility, hence perform badly when markets change too quickly.
- *SIZE* of the company. We defined sales' neperian logatihm as a proxy for company size. A firm size can have a direct influence on its performance since larger firms can

(depending on the industry which the company evolves) exploit economies of scale and economies of scope.

- *COSTS*, refers to the ratio of cost of goods sold divided by sales.
- *EQMULTI*, equity multiplier, defined as total assets divided by shareholders' equity, is used to define the company's capital structure. This variable is widely used in the industry, particularly with DuPont analysis. It measures how many monetary unit of assets is financed through equity.

For a summary of our dependents, explanatory variables and control variables please refer to the table below, and to the appendix **Erreur ! Source du renvoi introuvable.** for the descriptive statistic of these variables.

The first model (equation 1.1 and 1.2), as specified below, explores a direct relationship between foreign participation and a company financial performance. We do not make any distinction between minority and majority stake.

$$EBITDAM_{it} = \alpha_0 + \gamma_1 AGE_{it} + \gamma_2 SIZE_{it} + \gamma_3 COSTS_{it} + \gamma_4 EQMULTI_{it} + \beta_1 FRPERCENT_{it} + \varepsilon_{it} \quad (1.1)$$

$$ROE_{it} = \alpha_0 + \gamma_1 AGE_{it} + \gamma_2 SIZE_{it} + \gamma_3 COSTS_{it} + \gamma_4 EQMULTI_{it} + \beta_1 FRPERCENT_{it} + \varepsilon_{it} \quad (1.2)$$

$\alpha$  is the unknown intercept

$\varepsilon_{it}$  the error term

i: companies (components of the IBOVESPA index)

t= period (2006, 2007, 2008, 2009, 2010)

Second model (equation 2.1 and 2.2) breaks foreign capital participations (*FRPERCENT*) into three explanatory variables in order to distinguish the effects of minority foreign shareholders (*MIN*), majority foreign shareholders (*MAJ*), and joint controlled company or strategic partnership with a foreign investor (*BLOCK*).

$$EBITDAM_{it} = \alpha_0 + \gamma_1 AGE_{it} + \gamma_2 SIZE_{it} + \gamma_3 COSTS_{it} + \gamma_4 EQMULTI_{it} + \beta_1 MIN_{it} + \beta_2 BLOCK_{it} + \beta_3 MAJ_{it} + \varepsilon_{it} \quad (2.1)$$

$$ROE_{it} = \alpha_0 + \gamma_1 AGE_{it} + \gamma_2 SIZE_{it} + \gamma_3 COSTS_{it} + \gamma_4 EQMULTI_{it} + \beta_1 MIN_{it} + \beta_2 BLOCK_{it} + \beta_3 MAJ_{it} + \varepsilon_{it} \quad (2.2)$$

**Table 2: Summary of the variables**

	<b>Variable</b>	<b>Description</b>	<b>Source Use in prior studies</b>
<b>Dependents variables</b>	<i>ROE</i> Return on Equity	$\frac{\text{Net income}}{\text{Company average common equity}}$	Worldscope
	<i>EBITDAM</i> EBITDA margin	$\frac{\text{EBITDA}}{\text{Company sales}}$	Worldscope
<b>Explanatory variables</b>	<i>FRPERCENT</i>	Indicates the percent of shares detained by foreign investors	Lionshares Aydin et al. (2007), Gurbuz, A.O. and A. Aybars (2010) and Boardman et al. (1997)
	<i>MIN</i>	Dummy variable. Takes one if foreign shareholders have a minority stake in the Brazilian company	Lionshares Used in Gurbuz, A.O. and A. Aybars (2010)
	<i>BLOCK</i>	Dummy variable. Takes one if foreign shareholder is in a partnership agreement or in a joint venture with Brazilian company	Lionshares Variable not used in other papers
	<i>MAJ</i>	Dummy variable. Takes one if foreign shareholders have a majority stake in the Brazilian company	Lionshares Gurbuz, A.O. and A. Aybars (2010)
<b>Control variables</b>	<i>AGE</i>	Defined as the company age	Company
	<i>SIZE</i>	Defined as sales' neperian logarithm	Worldscope
	<i>COSTS</i>	Ratio of cost of goods sales divided by sales	Worldscope
	<i>EQMULTI</i>	Ratio of total assets divided by common equity	Worldscope

## 4 EMPIRICAL RESULTS

**Erreur ! Référence non valide pour un signet.** shows the results of our analysis after running Hausman tests (Table 4). Please refer to the appendix for an extensive presentation of all the models results.

### 4.1 EBITDA models

According to the Hausman test, fixed-effect models are selected for *EBITDAM* sets of model (p-value <0.05).

Regarding control variables we observe that in *EBITDAM* model 1 and 2, *AGE*, *SIZE*, *COSTS* and *EQMULTI* are all statistically significant. Regarding *COSTS*, negative relationship means that the lower the ratio of cost of goods sold to total sales, the higher the EBITDA margin is. *AGE* variable is also negatively correlated to EBITDAM. One explanation we can advance is the lack of flexibility of Brazilian older companies impedes them to perform better. The coefficient of *SIZE* variable is positive, meaning that EBITDA margin increases as the company size increases. This phenomenon can be explained through economies of scope and economies of scale.

Explanatory variable *FRPERCENT* does not have significant influence on firm performance (p-value > 0.1). This leads us to conclude that there is no linear relationship between foreign capital participation and firms' performance, hence rejecting first hypothesis and confirming Demsetz and Lehn (1985) and Demsetz and Villalonga (2001) view that there is no relationship between ownership and firm's performance.

However, when we split *FRPERCENT* into three variables *MIN*, *BLOCK* and *MAJ*, *BLOCK* variable becomes statistically significant. This result is in line with prior studies showing that (i) ownership structure has an impact on firm's performance (Agrawal and Knoeber (1996), Kaserer and Moldenhauer (2005), Boubakri Cosset and Guedhami (2005)) (ii) this relationship is positive (Piscitello and Rabbiosi (2005), L.N. Wilmore (1986) (iii) and that this relationship is not linear and bound to a certain level of participation (Gurbuz, A.O. and A. Aybars (2010), Aydin et al. (2007) and Yudaeva et al. (2003)).

Hence, our first set of models suggests that Brazilian joint venture or strategic partnership with foreign investors perform better than others. However, we acknowledge that further analysis need to be carried out in order to validate that impact. We acknowledge that there may be a lag, or inertia phenomenon, between new shareholders entrance and firm performance enhancement, particularly in case of EBITDA margin as explanatory variable.

#### **4.2 ROE models**

Regarding *ROE* sets of model, Hausman tests make us reject the null hypothesis (p-value > 0.05), hence select random-effect models. Control variables *AGE* and *SIZE* have no significant impact on *ROE* variable. *EQMULTI*, defined as total assets divided by shareholder's equity, is positively significant, illustrating the positive effect of leverage on return on equity.

*MIN* variable is statistically significant under ROE models, while *BLOCK* and *MAJ* variables are not statistically significant (p-value > 0,10). This finding reinforces results obtained with EBITDA models, which is that ownership has an impact on firm's performance, and that the relationship is not linear. However, as Douma, George and Kabir (2002) study pointed out, we cannot exclude that these companies were targeted by foreign investors due to their higher performance.

**Table 3: Models results**

	EBITDAM		ROE	
	Model 1 Fixed	Model 2 Fixed	Model 1 Random	Model 2 Random
AGE	0.02 *	0.02 *	0.90	0.96
	(-2.28)	(-2.44)	(0.12)	(0.05)
SIZE	1.6E-08 ***	2.4E-08 ***	7.4E-01	0.99
	(5.89)	(5.81)	(-0.33)	(-0.01)
COSTS	< 2.2e-16 ***	< 2,2e-16 ***	7.1E-04 ***	0.00 **
	(-14.26)	(-12.27)	(-3.43)	(-3.12)
EQMULTI	0.05 °	0.02 *	1.3E-10 ***	0.00 ***
	(-1.94)	(-2.45)	(6.70)	(6.52)
FRPERCENT	0.53		0.27	
	(0.64)		(-1.10)	
MIN		0.48		0.04 *
		(0.70)		(2.07)
BLOCK		0.03 *		0.30
		(2.21)		(1.04)
MAJ		0.44		0.91
		(0.77)		(-0.11)
Intercept			0.35	0.55
			(0.94)	(0.60)
N =	267	267	267	267
n =	54	54	54	54
R <sup>2</sup>	0.59	0.60	0.21	0.22
Adjusted R <sup>2</sup>	0.45	0.46	0.20	0.21
F-statistic	37.02	30.49	8.45	7.35
p-value	< 2,2e-16	< 2,2e-16	3.4E-10	3.1E-10

‘\*\*\*’ 0.001 ‘\*\*’ 0.01 ‘\*’ 0.05 ‘°’ 0.1 / The values in parentheses indicate the t-statistics

**Table 4: Hausman test**

	EBITDAM		ROE	
	Model 1	Model 2	Model 1	Model 2
chisq	42.47	28.69	5.87	8.04
df	8.00	10.00	8.00	10.00
p-value	1.1E-06	1.4E-03	0.66	0.62
model chosen	Fixed	Fixed	Random	Random

## 5 CONCLUSION

Over the past years, foreign direct investment has been contributing to around 2% of Brazilian GDP. FDI impacts can be measured in various ways: with a macro approach or/and a micro approach. In this dissertation we decided to investigate FDI impact in a micro approach: focusing on the performance of Brazilian listed companies. Thus, with the help of data panel analysis we constructed two sets of model to gauge the effect of foreign capital participations on company performance (respectively EBITDA margin and return on equity) from 2006 to 2010.

This dissertation considers only one aspect of foreign direct investment impact on the host country. Empirical results led us to validate two hypotheses. First, foreign capital participations improve companies' performance up to a certain level of participation. Then, joint controlled or strategic partnership between a Brazilian company and a foreign investor provide high operating performance.

These results are consistent with prior studies which also concluded that foreign ownership participations have a positive impact on firms' performance: Gurbuz, A.O. and A. Aybars (2010), Aydin et al. (2007), Wiwattanakantang Y., (2006), Piscitello and Rabbiosi (2005) and Yudaeva et al. (2003).

Finally, we pointed out a kind of structure of ownership, not studied by other papers, that outperform our sample. Joint controlled or strategic partnership between a Brazilian company and a foreign investor provide high operating performance (please refer to *EBITDAM* model). This result supports the establishment of International joint venture, international partnership as well as co-opetition strategy as part as Brazilian and foreign companies' strategic plan.

We acknowledge that our study is only based in listed Brazilian companies, and only explores the relationship and impact on a financial basis through EBITDA margin and Return on Equity. FDI affects host country in various aspects and not solely in a financial basis. Hence, we only provide an answer to one side that needs to be balanced with the others in order to assess the overall effect.

Next steps would consist in an in-depth analysis of the structure that outperforms our sample, hence understanding the factors that differentiate them from the other Brazilian listed companies.



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## 7 APPENDICES

**Table 5: Dependent variables**

	<b>roe</b>	<b>ebitdam</b>
nbr val	267	267
nbr null	1	3
nbr na	0	0
min	-1,28	-8,22
max	6,37	0,86
range	7,65	9,08
sum	70,08	41,05
median	0,15	0,23
mean	0,26	0,15
SE mean	0,04	0,05
CI mean 0,95	0,07	0,10
var	0,35	0,65
std.dev	0,59	0,81
coef.var	2,24	5,26

**Table 6: Explanatory variables (1/2)**

	<b>age</b>	<b>size</b>	<b>costs</b>	<b>eqmulti</b>
nbr val	267	267	267	267
nbr null	0	0	1	0
nbr na	0	0	0	0
min	1	16	0	-35.79
max	131	26	1.85	25.82
range	130	10	1.85	61.61
sum	12298	5960	145.72	924.39
median	42	22	0.58	2.46
mean	46.06	22.32	0.55	3.46
SE mean	2.02	0.10	0.01	0.28
CI mean 0,95	3.97	0.19	0.03	0.55
var	1087.98	2.55	0.05	20.61
std.dev	32.98	1.60	0.22	4.54
coef.var	0.72	0.07	0.40	1.31

**Table 7: Explanatory variables (2/2)**

	<b>frpercent</b>	<b>min</b>	<b>block</b>	<b>maj</b>
nbr val	267	267	267	267
nbr null	169	229	248	236
nbr na	0	0	0	0
min	0	0	0	0
max	89.4	1	1	1
range	89.4	1	1	1
sum	2038.1	38	19	31
median	0	0	0	0
mean	7.63	0.14	0.07	0.12
SE mean	0.92	0.02	0.02	0.02
CI mean 0,95	1.81	0.04	0.03	0.04
var	226.17	0.12	0.07	0.10
std.dev	15.04	0.35	0.26	0.32
coef.var	1.97	2.46	3.62	2.76

**Table 8: Fixed-effect and random effect models results**

	EBITDAM				ROE			
	Model 1 Fixed	Model 1 Random	Model 2 Fixed	Model 2 Random	Model 1 Fixed	Model 1 Random	Model 2 Fixed	Model 2 Random
AGE	0.02 *	0.14	0.02 *	0.15	0.56	0.90	0.59	0.96
	(-2.28)	(1.50)	(-2.44)	(1.46)	(-0.58)	(0.12)	(-0.54)	(0.05)
SIZE	1.6E-08 ***	1.6E-13 ***	2.4E-08 ***	1.1E-12 ***	8.8E-01	7.4E-01	0.79	0.99
	(5.89)	(7.79)	(5.81)	(7.50)	(0.15)	(-0.33)	(0.27)	(-0.01)
COSTS	< 2.2e-16 ***	< 2.2e-16 ***	< 2.2e-16 ***	< 2.2e-16 ***	0.01 *	7.1E-04 ***	0.05 °	2.0E-03 **
	(-14.26)	(-12.64)	(-12.27)	(-11.36)	(-2.48)	(-3.43)	(-1.96)	(-3.12)
EQMULTI	0.05 °	0.14	0.02 *	0.04 *	1.9E-07 ***	1.3E-10 ***	1.4E-06 ***	3.8E-10 ***
	(-1.94)	(-1.49)	(-2.45)	(-2.04)	(5.39)	(6.70)	(4.98)	(6.52)
FRPERCENT	0.53	0.43			0.22	0.27		
	(0.64)	(0.80)			(-1.22)	(-1.10)		
MIN			0.48	0.55			0.16	0.04 *
			(0.70)	(0.60)			(1.41)	(2.07)
BLOCK			0.03 *	0.02 *			0.19	0.30
			(2.21)	(2.30)			(1.33)	(1.04)
MAJ			0.44	0.21			0.27	0.91
			(0.77)	(1.25)			(-1.12)	(-0.11)
Intercept		1.4E-08 ***		3.7E-08 ***		0.35		0.55
		(-5.86)		(-5.68)		(0.94)		(0.60)
N =	267	267	267	267	267	267	267	267
n =	54	54	54	54	54	54	54	54
R <sup>2</sup>	0.59	0.50	0.60	0.51	0.17	0.21	0.19	0.22
Adjusted R <sup>2</sup>	0.45	0.48	0.46	0.49	0.13	0.20	0.15	0.21
F-statistic	37.02	32.11	30.49	26.88	5.23	8.45	4.87	7.35
p-value	<2,2e-16	<2,2e-16	<2,2e-16	<2,2e-16	5.8E-06	3.4E-10	2.7E-06	3.1E-10

Signif. codes: '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '°' 0.1

The values in parentheses indicate the t-statistics