TAX INCENTIVES AS PUBLIC POLICY OF INDUSTRIAL DEVELOPMENT: AN EMPIRICAL ANALYSIS OF THE ECONOMIC EFFECTS OF THE ICMS PRESUMED CREDIT CONCESSION FOR TEXTILE INDUSTRIES OF STATE OF SANTA CATARINA

JULIO CESAR FAZOLI
A master᾿s degree holder in accounting from Universidade Federal de Santa Catarina (UFSC). **Address:** *Campus Reitor João David Ferreira Lima, s/n | Trindade | 88040-900 | Florianópolis/SC | Brazil.*
E-mail: *j.fazoli@gmail.com*

FABRÍCIA DA SILVA ROSA
A doctorate degree holder in production engineering from Universidade Federal de Santa Catarina. A professor at the postgraduation program in accounting at Universidade Federal de Santa Catarina (UFSC). **Address:** *Campus Reitor João David Ferreira Lima, s/n | Trindade | 88040-900 | Florianópolis/SC | Brazil.*
E-mail: *fabricia.rosa@ufsc.br*

LEONARDO FLACH
A doctorate degree holder in business administration from Universidade Federal do Rio Grande do Sul. A professor at the postgraduation program in accounting at Universidade Federal de Santa Catarina (UFSC). **Address:** *Campus Reitor João David Ferreira Lima, s/n | Trindade | 88040-900 | Florianópolis/SC | Brazil.*
E-mail: *leonardo.flach@ufsc.br*

LUIZ FELIPE FERREIRA
A doctorate degree holder in environmental engineering from Universidade Federal de Santa Catarina. A professor at the postgraduation program in accounting at Universidade Federal de Santa Catarina (UFSC). **Address:** *Campus Reitor João David Ferreira Lima, s/n | Trindade | 88040-900 | Florianópolis/SC | Brazil.*
E-mail: *luiz.felipe@ufsc.br*

ABSTRACT

In Brazil, the tax competition among state governments to attract private investment is not something new. According to the participating states, such measures would allow the economic development of their regions, generating income and employment, in addition to the significant increase in the value added along the supply chains due to increased industrial processing. This study sought to contribute to the topic, analyzing the behavior of value added generated by 11.272 Santa Catarina establishments operating in the textile sector. Were collected the value added informations between the years of 2006 and 2010, resulting in 60 months. To verifying the behavior of textile industries´s value added before and after of tax incentive it was used the panel data model known as "difference in differences" (diff-in-diff). The results show a fall of 32.89% in real value added generated by companies in the sector after the establishment of the ICMS presumed credit. Moreover, while there was an increase of 105% in the monthly rate of

growth of value added to the beneficiary companies, there was a fall by 53.30% for the companies not granted the same treatment, which shows a process of migration markets, probably due to the unfair competition generated by the tax incentive.

Keywords: Tax incentives. Tax War. Economic development. ICMS.

1 INTRODUCTION

Competition between state and local governments to attract companies can be classified as the process seeking to economically qualify specific regions or sub regions through implicit or explicit processes of dispute with other regions (Cheshire & Gordon, 1998; Rodrígues-Pose & Arbix, 1999). Such a proactive movement has attracted the interest of accountants, economists, legislators, and policy makers, especially in emerging markets (Tanzi & Zee, 2000; Lee, 2008).

In Brazil, as in other countries strongly marked by regional heterogeneity, proactive policies of attracting private investment are old, with traces dating back to the 1950s (Prado, 1999; Dulci, 2002). However, as highlighted by Ibanez (2005), until the early part of the 1990s, disputes between subnational governments would take place in small proportions, with no major consequences for its participants.

Throughout the 1980s, there was an exhaustion of the public sector financing pattern in force until the previous decade, which compromised the federal government's ability to implement regional development policies, especially through state-owned enterprises (SOE) (Prado, 1999; Dulci, 2002; Oliveira, Dias & Tabosa, 2014). In addition, economic deconcentration policies, widely used during the 1970s [SUDAM (Brazilian Portuguese abbreviation for Superintendency of Development for the Amazon, a local authority of the federal government of Brazil), SUDENE (Brazilian Portuguese abbreviation for Superintendency for the Development of the Northeast, a Brazilian governmental agency), Free Economic Zone of Manaus (Zona Franca de Manaus, a free economic zone in the city of Manaus, the capital of the State of Amazonas, Northern Brazil), among others] were progressively left behind in the 1980s. It further emphasized the serious inequalities among Brazilian regions (Suzigan & Furtado, 2006; Macedo & Angelis, 2013).

In the economic scenario, with the Brazilian economy opening-up in the early 1990s, there was an increasing flow of international capital in search of investment opportunities in the country (Dulci, 2002). At the same time, the 1988 constitutional order brought a new model of political and institutional decentralization, with a significant shift of power in favor of states and municipalities, which led to a significant increase in current expenditures of subnational governments (Melo, 1996; Perobelli & Piancastelli, 1996; Dulci, 2002; Oliveira *et al.*, 2014).

Therefore, seeking to intervene decisively in their developmental trajectory, the Brazilian federative units have promoted a competition for private investments, a movement classified as "Tax War" (Nascimento, Câmara & Godoy, 2002; Nascimento, 2009). Justifications raised by the participating states are that such measures would allow economic development of their regions as well as the generation of income and employment, in addition to significant increase in the value added along the productive chains due to greater industrial transformation in the state, filling the void left by the federal government in instituting development measures in the various regions of the country (Perobelli & Piancastelli, 1996; Nascimento *et al.,* 2002; Dulci, 2002; Nascimento, 2009; Oliveira *et al.*, 2014).

Within this competitive scenario, since 2008, with the publication of Ruling 1,669/2008, the Brazilian state of Santa Catarina ensures tax incentive policies for the textile and clothing segments. It seeks to foster the sector competitiveness and increase the value added along the productive chain through promotion of textile industrial transformation in the territory of Santa Catarina. These segments, together, employ 166 thousand people in the state. They represent 20% of the sector's workers in the Brazilian territory and 27% of the state processing industry [Federação das Indústrias de Santa Catarina (FIESC), 2014].

However, according to Tanzi (2000) and Chirinko and Wilson (2008), even if there is an economic increase in the investments benefited, it should be inquired whether this increase actually arises from the tax incentive policies adopted. It is precisely this reflection that the present work intends to carry out. Thus, in order to contribute to understanding the topic,

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especially with regard to tax incentive policies used by the state of Santa Catarina, the following research question arises: *Is the concession of presumed ICMS (Brazilian tax on the circulation of goods, interstate and intercity transportation and communication services) credit by the state of Santa Catarina an effective instrument for generation of value added to the Santa Catarina textile production chain?*

As a general objective, the goal is to verify the value added behavior generated by textile companies before and after adoption of the public policy, considering the effects of tax incentives as an inductive tool for economic growth in the state textile chain.

The choice of the topic "tax incentives and regional development" stems from the current relevance of the subject in Brazil. Also, as highlighted by Stark and Wilson (2006), in spite of the importance of the topic as a tool for guiding or redirecting public policies, surprisingly few empirical studies have approached this issue with the attention that it deserves. Nevertheless, due to the institutional discomfort generated among its protagonists, the topic has produced partial and eminently taxing arguments, hindering the necessary understanding of the topic (Amaral, 2010).

There is no consensus on the true social and economic effects of tax incentives in Brazil. Authors such as Nascimento *et al.* (2002), Carvalho and Oliveira (2003), Oliveira and Dias (2011), Cardozo (2013) and Oliveira *et al.* (2014) have found that tax incentives were not sufficient to promote dynamism in the regions benefited. On the other hand, authors such as Luca and Lima (2007) and Nascimento (2009) have found that tax incentives have positively contributed to the regions' economic development. They have brought significant impacts to the least developed states. Finally, it is important to highlight studies by Ferreira and Oliveira (2009), Lima and Lima (2010) and Mello and Armange (2014). The authors have found only partial impacts on the economy. They have emphasized that such policies alone would not be sufficient to ensure the reduction of regional economic inequalities.

Based on this research gap, the present work seeks to contribute to the topic by analyzing the effectiveness of granting tax incentives to the Santa Catarina textile sector in promoting uniform growth of the state economy.

This work is segmented into six sections: Introduction, Theoretical Framework, Methodology, Data Analysis, Results Analysis and Conclusion. In the Theoretical Framework an explanation is presented on the subject, highlighting the competition among the subnational governments, their origins and, finally, the national and international works that have sought to analyze the topic. The third part is devoted to the method adopted in the present work. It details what information and statistical models were used to obtain the results. The fourth and fifth sections are, respectively, intended for analysis of data and results obtained. Finally, the sixth and final sections are devoted to conclusions about the work.

2 THEORETICAL FRAMEWORK

Tax incentives appear as measures seeking to exclude, totally or partially, tax credit applied for the purpose of economically developing a particular region or certain sectors of activity (Calderaro, 1973). Gadelha (2010) explains that, in a broader sense, tax incentives would be instruments of intervention in the economic domain, so that the state can concretize vectors and values that have guided its public policies.

Thus, within the state's role of inducing in the economy, tax incentive policies gain relevance, since they enable public managers to direct economic agents' performance and behavior for specific purposes, seeking to reduce social and economic inequalities as well as to promote well-being for the population, a phenomenon classified as tax extra-fiscality (Cavalcanti, 1997; Grau, 2006; Avi-Yonah, 2008; Alexandre, 2008; Giambiagi & Além, 2008; Papadopol, 2009, Assunção, 2011).

The tax has an extra-tax purpose when it is intended to intervene in a given social and economic situation. As examples, there are import and export taxes. Such taxes are aimed at controlling Brazilian international trade and may even serve as a protective barrier to the national economy, in addition to stimulating import or export of certain species of goods (Alexandre, 2008).

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Extra-fiscality occurs when the legislator, in the name of social interests, increases or decreases tax rates and/or tax bases in order to induce taxpayers to carry out or stop carrying out particular actions. Extra-fiscality does not always cause cash losses. It can increase it, for example, when taxation on cigarette consumption is exacerbated (Carrazza, 2002).

In spite of the fact that tax incentives developmental bias is accepted among the authors, the same situation does not exist to define their types (Formigoni, 2008). By way of example, authors such as Elali (2007), Formigoni (2008) and Assunção (2011) classify deferral as a tax benefit when, in reality, it is a hypothesis in which, simply, responsibility for payment falls on a person other than the one who has a personal and direct relationship with the taxable event (Alexandre, 2008).

Thus, it is assumed that tax incentives aim to eliminate or reduce, in whole or in part, the tax burden of certain taxpayers or sectors (Calderaro, 1973; Elali, 2007). It should be noted that tax incentives are tax relief granted prior to the occurrence of the taxable event, which, in practice, prevents the tax authority from constituting, in principle, the portion related to the tax waiver. If the tax relief is granted on a tax already constituted, it shall be a remission, a hypothesis that is defined as the extinction of the tax credit (Article 156, IV, of the Brazilian National Tax Code).

However, for Rodrigues and Freitas (2005), the bias inducing tax extra-fiscality can have negative effects on society itself, especially when there is a real "delivery" of public funds in favor of economic elites. Also, according to authors such as Varsano (1996), Prado (1999) and Rodrigues and Freitas (2005), on the practical level, under the pretext of seeking social development, it is verified that freedom granted to managers to dispose of tax exemptions ends up becoming a tool of competition among regions and municipalities, fomenting a process of migration of companies and jobs from one federated unit to another, usually in pursuit of tax gains (Varsano, 1996; Prado, 1999; Dulci, 2002; Rodrigues & Freitas, 2005). This competition for private investments by Brazilian states through tax incentives is known as "Tax War" (Nascimento *et al.,* 2002; Nascimento, 2009).

Dulci (2002) points out that in Brazil "Tax War" stems from political and economic factors that have emerged one after another since the 1980s. In this sense, it is still worth mentioning that authors such as Prado (1999), Varsano (1996) and Perobelli & Piancastelli (1996) go beyond that. They point out that the state tax model on value added (the current ICMS) has greatly contributed to competition. Thus, within the Brazilian context, it can be said that the "Tax War" has three basic foundations: the legal-tributary one, the political-administrative one and, finally, the economic one. According to the agents involved, the background to such measures would be unique: to fill the void left by central government to promote regional development policies in the country's various regions (Prado & Cavalcanti, 2000; Ibanez, 2005; Dulci, 2002).

2.1 Foundations of "Tax War" in Brazil

Within a federation, tax system constitutional and legal provisions play a key role in harmonious coexistence among subnational governments (Prado, 1999). The Brazilian model of value added taxation has remained unchanged since its origins, becoming the main factor for the support of the "Tax War" among the Brazilian states (Perobelli & Piancastelli, 1996; Varsano, 1996; Prado, 1999).

With the publication of Constitutional Amendment no. 18 in 1965, there was a significant change in the national tax system, which allowed Brazil to have a rational tax system, free of cascading effects and with uniformity of rates, the latter imposed by the Federal Senate (Perobelli & Piancastelli, 1996). Despite significant changes, the new ICM brought the principle of origin, in which it seeks to tax goods or merchandise at the place of production to the detriment of the locality in which they shall actually be consumed. Since then, this model has allowed a wide possibility of negotiation between investing companies and the producer state, since the latter would pay the due tax on operations (Perobelli & Piancastelli, 1996; Varsano, 1996; Prado, 1999; Lima & Lima, 2010).

With the publication of the 1988 Constitution of the Federative Republic of Brazil, the problem has considerably worsened. The new Constitutional Order has brought a competition tool to the state governments: the possibility of establishing, through their own laws, ICMS tax rates levied on internal operations (Varsano, 1996; Prado, 1999; Dulci, 2002). As highlighted by

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Prado (1999), since its inception, the ICMS seems to be in line with what is considered a worldwide standard for value added taxes, usually held under central government control or, at least, by shared competence, guaranteeing some level of regulatory influence by the greater power.

The role played by the Brazilian National Council of Treasury Policy (CONFAZ, in the Brazilian Portuguese abbreviation), created by Complementary Law No. 24, dated January 7, 1975, consisting of the State Treasury Department Secretaries and the Minister of Finance, the main purpose of which would be to regulate consensually special policy in ICMS taxation, has greatly contributed to competition among state governments (Varsano, 1996; Prado, 1999). As highlighted by Prado (1999), until the second half of the 1980s, CONFAZ is competent to exercise some control over autonomous incentive policies granted by state governments.

However, with the entry into force of the Federal Constitution of 1988, there was a substantial weakening of CONFAZ, especially as a regulatory body for tax incentives policies adopted by the Brazilian states (Varsano, 1996; Prado, 1999). With increase in the states' political representation in view of the new Constitution as well as the lack of institutional instances of compliance control with standards issued by CONFAZ, there was a substantial increase in unilateral policies of tax incentives promoted by the states and the Brazilian Federal District, which have culminated in the current tax scenario in Brazil (Prado, 1999; Ferreira, 2000; Dulci, 2002; Arbix, 2002; Mello, 2008).

At the same time, since the early 1980s, Brazilian states had been experiencing a process of economic stagnation and financial crisis (Prado, 1999). The new model of political and institutional decentralization of 1988 has brought a significant shift of attributions to states and municipalities, which resulted in a significant increase in current expenditures of state governments (Melo, 1996; Perobelli & Piancastelli, 1996; Dulci, 2002; Oliveira *et al.*, 2014). Even with the expansion of the ICMS tax base and the federal contributions to the State Participation Fund (FPE, in the Brazilian Portuguese abbreviation) after 1988, state revenues were not sufficient to meet growing expenses, further aggravating deficits in state accounts (Oliveira, 1999).

In view of increasing public account deficits, regional and local governments began to promote proactive measures to attract investment, given that, at least from a state perspective, the direct impact of these private enterprises could, in the short term, ease the growing state deficit in view of the immediate increase tax collection that such measures could bring to the territories that would host the investments encouraged (Lima & Lima, 2010).

In the economic scenario, with the Brazilian economy opening-up from the early 1990s, there was an increasing flow of international capital in search of investment opportunities in the country (Dulci, 2002; Ibanez, 2005; Nascimento, 2009). The gradual consolidation of Mercosur (also known as Mercosul or Ñemby Ñemuha; South American trade bloc) and the relative stability provided by the so-called (set of measures taken to stabilize the Brazilian economy in 1994) Real Plan (real being the official currency of Brazil) provided good horizons for multinational corporations to include Brazil in their business plans (Rodrígues-Pose & Arbix, 1999; Dulci, 2002; Arbix, 2002; Ibanez, 2005; Nascimento, 2009). At the same time, there was a neoliberal behavior on the part of the federal government. The watchword would be the search for systemic gains, which radically changed the inductive process in the economy (Dulci, 2002; Ibanez, 2005).

Although this liberal (as the political and moral philosophy based on liberty and equality) model would be widely held at the time, in Brazil the progressive withdrawal of government from the economy would not lead to market efficiency, as everyone expected, but instead created a void of development policies, quickly filled by subnational governments (Prado & Cavalcanti, 2000; Dulci, 2002). According to Amaral (2010), in the Brazilian economic context, the dispute over private investment takes place only among a restricted group of dynamized states (São Paulo, Rio de Janeiro and Minas Gerais), which forces other states to institute proactive policies, especially if their chances of attracting investment without the corresponding tax incentive are unlikely.

In this scenario, there was a real dispute among subnational governments for the new international investments, which would seek in Brazil markets in fast growth (Rodrígues-Pose & Arbix 1999; Arbix, 2002). A clear example of this dispute can be seen from the second half of

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the 1990s on international investments of the automobile sector (Rodrígues-Pose & Arbix 1999; Arbix, 2002; Dulci, 2002).

2.2 Previous studies

As in Brazil, international literature presents cases of competition among subnational governments (Nascimento, 2009). In this topic, several empirical studies have gained relevance in North America, which sought to measure the effectiveness of the model known as Enterprise Zones. It is a national US program that seeks, from granting tax incentives, to develop regions considered economically disadvantaged and increases the level of employment and income in the localities benefited (Alm & Hart, 1998; Bondonio & Engberg, 2000; Bondonio & Greenbaum, 2007).

Bondonio and Engberg (2000) have tested the effects of *Enterprise Zones.* They sought to measure effects of this policy on job creation in the benefited regions of five American states (California, Kentucky, New York, Pennsylvania and Virginia). By means of econometric regression models, the authors compared the result generated by companies with and without tax incentives. Results showed that tax incentives implemented by the Enterprise Zones do not have significant effects on job creation in the regions benefited. Similar results were found in studies by Dowall (1996) and Neumark and Kolko (2010) for the state of California and Boarnet and Bogart (1996) for the state of New Jersey.

Bondonio and Greenbaum (2007) have investigated different impacts of tax incentives for Enterprise Zones in ten American states (California, Connecticut, Florida, Indiana, Kentucky, Maryland, New Jersey, New York, Pennsylvania and Virginia). Variables used were the increase in level of employment, sales, capital expenditure and salary data of beneficiary companies. For research purposes, the authors separated the sample into three clusters: a) new companies; b) already existing ones and c) those in the process of closure. Results showed positive gains on the gross flow of jobs, sales and capital expenditures for new companies. However, the same situation has not been verified for existing companies and those in the process of closing. This fact, according to the authors, could lead to discrepant policies between new and existing companies.

O'Keefe (2004) has examined the impact of California state Enterprise Zones. Increase in employment has been used as an independent variable. For the study, data from the American demographic census were used, as well as information regarding companies based in the beneficiary areas or not. The study results suggest that locations classified as Enterprise Zones show an increase in employment (about 3% a year) only in the first six years after its designation. However, this effect does not persist in time. Data pointed to growth in employment level of companies that have tax incentives when compared to those that do not have similar incentives.

In Brazil, studies such as those by Nascimento *et al.* (2002), Carvalho and Oliveira (2003), Oliveira and Dias (2011), Cardozo (2013) and Oliveira *et al.* (2014), Cardozo (2013) have analyzed the impact of tax incentives on various metrics (employment, GDP per capita, tax collection, industrial value added, among others) and in all of them results were below that expected, demonstrating that tax incentives have not promoted a boost in the regions benefited. On the other hand, in their studies, Luca and Lima (2007) and Nascimento (2009) have concluded that state tax incentive policies have positively contributed to the regions' economic development. They have brought significant impacts to the least developed states. Studies such as those by Ferreira and Oliveira (2009), Lima and Lima (2010) and Armange and Mello (2014) have found only partial impacts on the economy. They have emphasized that such policies alone would not be sufficient to ensure the reduction of regional economic inequalities.

The research uses as a study variable the value added generated by companies, especially by the importance that this metric has in demonstrating wealth generation by economic agents. As highlighted by Luca (1998), Kroetz (2000) and Santos (2003), measurement of value added is the most competent way of measuring and demonstrating entities' ability to generate and distribute wealth. It is the Gross Domestic Product (GDP) produced by organizations. It should be noted that studies such as those by Nascimento (2009), Oliveira and Dias (2011), Oliveira *et al.* (2014) and Rezende (2015) have also used this variable

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as a measure of economic impacts of tax incentives granted by governments, which emphasizes their importance as a measurement metric of economic development.

3 SEARCH METHOD

In order to carry out the research, industrial companies of the textile sector based in the Brazilian state of Santa Catarina were selected. Data were obtained by request and authorization from the Tax Administration Department of the state of Santa Catarina's Treasury Department, which is responsible for managing activities inherent in tax inspection and collection, in addition to acting in compliance with state tax laws.

According to Luca (1998), wealth generated by companies is calculated from the difference between the value of its sale and that of goods produced by third parties and used in their production processes. In Brazil, this form of value added measurement has legal protection, inasmuch as Complementary Law No. 63/90, when stipulating criteria for distribution of ICMS tax collection to municipalities, establishes that, for division purposes, at least three quarters must comply with the proportion of value added generated in the respective municipalities. Finally, the law declares that states should consider as value added "the value of goods exited plus the value of services rendered in their territory minus the value of goods entered in each calendar year."

Thus, for the purposes of this research, the concept of economic value added was adopted as the difference between the values related to the sales of merchandise and goods produced and acquisitions of goods and inputs by the companies analyzed. Previously, the Tax Codes of Operations and Provisions (CFOP, in the Brazilian Portuguese abbreviation), related to sales and purchases of goods and products were selected. From this list of CFOPs, amounts reported by taxpayers in the ICMS and Economic Movement form (DIME, in the Brazilian Portuguese abbreviation) (Article 168, item II, Annex 05, ICMS Regulation of SC) were collected from January 2006 to December of 2010. It should be emphasized that only companies opting for the so-called (Brazilian Treasury Department) "National Simple" (a differentiated, simplified and favored tax policy), which have their own regulation (Complementary Law 123/2006), are exempt from providing this declaration.

It should be noted that, as a condition for preserving tax confidentiality, information that could identify taxpayers, such as corporate name and other registration data, were suppressed in the analysis development. Therefore, numbers referring to taxpayers' register were replaced by key numbers. The reason for assigning this policy was to maintain each taxpayer's individuality, since the study tries to measure the effects of the public policy of incentives individually for each establishment.

In order to verify the textile industries' value added behavior before and after the introduction of the ICMS tax incentive, the longitudinal regression model for panel data known as "differences in differences" (DID or DD), applied in studies such as those by Nascimento (2009) and Oliveira and Dias (2011) was used. The "differences in differences" model allows variables behavior verification over a period of time, identifying possible changes related to the application of a given public policy (Oliveira & Dias, 2011). With the use of this model it is possible to estimate the value added generated by the textile companies that have received tax incentives if they had not received the policy, which allows better comparison of the effects of the public policy under analysis (Nascimento, 2009; Oliveira & Dias, 2011).

In order to prevent the capture of exogenous trends prior to the creation of tax exemption, the determinants of which would not be related to the tax incentive granting, the present study has used polygonal adjustments with binary variables in the model proposed (Nascimento, 2009; Oliveira & Dias, 2011). Moreover, as the model proposes to measure the real growth rate of value added generated by textile companies, it was decided to discount the accumulated inflation rate of the period (IPCA) from the dependent variable (value added). The month of January 2006 was used as a base.

After adjustments, the longitudinal regression model for panel data of "differences in differences" presented the following formula:

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$$\ln\left(\frac{Y_i}{r_{acum}}\right) = \alpha_0 + \beta_0 t + \delta_0 P_i(t - \theta) + \alpha_1 S_i + \beta_1 t S_i + \delta_1 P_i(t - \theta) S_i + \varepsilon_1$$

Where:

$\ln\left(\frac{Y_i}{r_{acum}}\right)$= the natural logarithm of the value added generated by the company in the respective month divided by the accumulated inflation up to the period, based on the month of January 2006;

P_i = the binary variable, being "0" for the months prior to November 2008 (date of setting forth the tax incentive with the publication of State Ruling No. 1,669/08) and "1" for subsequent months;

S_i = the binary variable, with "0" for textile companies that did not receive the presumed ICMS credit in the period analyzed and "1" for those that received it after the tax incentive was set forth;

t = represents the trend variable;

θ = represents the abscissa of the vertex. In this model, it is the month of November 2008 that delimits the period before and after setting forth the tax incentive (State Ruling No. 1,669/08);

$\alpha_0, \alpha_1, \beta_0, \beta_1, \delta_0, \delta_1$ = they represent the model parameter and

ε_1 = represents the error term.

In the model proposed, the growth rate of the value added (Y_i) shall be:

a) β_0, in the control group, before the structural change;
b) $\beta_0 + \delta_0$, in the control group after the structural change;
c) $\beta_0 + \beta_1$ in the policy group, before the structural change;
d) $\beta_0 + \delta_0 + \beta_1 + \delta_1$, in the policy group after the structural change.

Also, in order to guarantee results robustness, the following tests are used for data adequacy to regression model assumptions with panel data, according to Tables 1 and 2:

Table 1
Assumptions for applying the regression model to panel data

Tests	Null hypothesis	Alternative hypothesis
White test	There is no heteroscedasticity in the data	There is heteroscedasticity in the data
Wooldridge test	Absence of correlation in the data	Existence of correlation in the data

Source: Prepared by the authors themselves (2016).

Table 2
Assumptions for defining the regression model to panel data

Tests	Null hypothesis	Alternative hypothesis
Chow test	Intercepts are equal for all cross-sections [POLS (Pooled Ordinary Least Square)]	Intercepts are different for all cross-sections (fixed effects)
Breusch-Pagan LM Test	The variance of the residues reflecting the difference is equal to zero (POLS)	The variance of the residues reflecting the difference is nonzero (random effects)
Durbin–Wu–Hausman test (also called Hausman specification test)	The error correction model is suitable (random effects)	The error correction model is not suitable (fixed effects)

Source: Prepared by the authors themselves (2016).

After consolidating the information, 11,272 establishments in the Brazilian state of Santa Catarina were surveyed in the state's textile sector. From this volume, between November 2008 and December 2010, 678 establishments received authorization from the State Treasury Department to use the presumed ICMS credit provided for in item IX, Art. 21, Annex 02 of RICMS/SC. As already mentioned, monthly information on value added was obtained in the period from 2006 to 2010, totaling 60 months. Considering that the model proposed uses the dependent variable natural logarithm (value added), establishments that presented value added

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equal to zero in the respective month were not computed. Therefore, there were 164,431 observations to be submitted to the tests proposed by the present study.

Finally, it should be noted that, for measuring statistical data, software Stata® SR for Windows® version 12 was used.

4 DATA ANALYSIS

Independently of previous tests, based on the relevant sample size (164,431 observations) and using the asymptotic distribution conception, the present study considered that the data have a normal distribution, since, in these cases, the estimators remain consistent with large samples, in addition to guaranteeing valid results for Student's t-test and F-test (Gujarati & Porter, 2011).

Thus, initially, the tests listed in Table 1 are applied to verify assumptions of use of the regression model for panel data (absence of residue autocorrelation and data homoscedasticity). Results are shown in Table 3.

Table 3
Tests to verify regression assumptions

Regression model assumptions	Test	Null hypothesis (H_0)	Alternative hypothesis (H_1)	Result	Hypothesis
Absence of residues autocorrelation	Wooldridge test	Absence of correlation in the data	Existence of correlation in the data	Prob > F = 0.0000	Rejects H_0 in favor of H_1
Homoscedasticity	White test	There is no heteroscedasticity in the data	There is heteroscedasticity in the data	P-value = 0.0000	Rejects H_0 in favor of H_1

Source: Prepared by the authors themselves (2016).

Based on the results of Table 3, the Wooldridge and White tests demonstrate, respectively, autocorrelation and heteroscedasticity problems in the data collected. In this sense, according to Gujarati and Porter (2011), in the case of coexistence of autocorrelation and heteroscedasticity problems, especially in reasonably large samples, it is interesting to adopt the Newey-West estimator, since the method can deal with the existence of problems, guaranteeing linearity, non-bias and consistency in the estimators. Thus, the present study has adopted the Newey-West estimator, also known as heteroscedasticity-consistent standard errors (HC) and autocorrelation.

In light of the tests and corrections mentioned above, the model with panel data was generated for the study of the value added generated by the Brazilian state of Santa Catarina's textile industries, the result of which is shown in Table 4:

Table 4
Result of the estimation of the model with panel data to evaluate the behavior of value added of Santa Catarina's textile industries during the period from 2006 to 2015

Variable	Real growth rate			Nominal growth rate		
	Coefficient	Standard error	P value	Coefficient	Standard error	P value
β_0	0.0571475	0.0008775	0.000	0.0606862	0.0008777	0.000
δ_0	-0.0304579	0.0023162	0.000	-0.029496	0.0023165	0.000
β_1	-0.0487251	0.0021281	0.000	-0.0484238	0.0021282	0.000
δ_1	0.0393482	0.0044225	0.000	0.0387022	0.0044226	0.000
Number of observations:	164,431					
Confidence Interval:	95%					

Dependent variable: Added monthly value generated by the company.

Note¹: At the level of significance of 95%.

Note²: The regression model definition tests for panel data (fixed, random or POLS effects), provided in Table 2, were suppressed, since the estimation of the model was based on the Newey-West estimator, with a view to correcting previously detected heteroscedasticity and autocorrelation problems.

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Note[3]: Considering that the model seeks to measure the relative rate of the impact of tax incentives on the generation of wealth in the economy, there was an option for the semi-logarithmic model, considering its greater relevance for the economic analyses (Gujarati & Porter, 2011).

Source: Prepared by the authors based on the research data (2016).

According to data extracted from the model, between January 2006 and October 2008, the period prior to setting forth the presumed ICMS credit, the real growth rate of value added generated by the control group (textile industries without tax incentives – β_0) presented an average increase of 5.71% per month (6.06% in nominal terms) while the policy group (textile industries that received tax incentives – $\beta_0 + \beta_1$) showed an average growth of only 0.84% per month (1.73% in nominal terms).

In the period after setting forth the presumed ICMS credit, there was a substantial change in numbers. According to the results, since that period, the real growth rate of value added generated by the control group (textile industries without tax incentives – $\beta_0 + \delta_0$), has continued to grow but with a decrease of 53.30%. There was an average monthly increase of 2.67% (3.12%, in nominal values). On the other hand, there was a 105% increase in the policy group (textile industries that received tax incentives – $\beta_0 + \delta_0 + \beta_1 + \delta_1$), which rose to an average monthly growth rate of 1.73% (2.15%, in nominal values).

5 ANALYSIS OF RESULTS

Given the results presented, some findings can be presented. The first is that, indeed, tax incentives granted to the textile sector have not been effective in promoting the segment economic growth. This can be perceived by the 32.89% decrease in the real value added monthly generated by companies in the sector after the institution of the presumed ICMS credit (the average monthly value added before the publication of State Ruling No. 1,669/08 was 3.28% per month and became 2.20% in the subsequent period). Thus, the results corroborate those verified in studies such as those by Nascimento et al. (2002), Carvalho and Oliveira (2003), Oliveira and Dias (2011), Cardozo (2013) and Oliveira *et al.* (2014), by means of which it was concluded that there were no economic gains with the state tax incentives policies.

Another point worth mentioning is the change in the monthly rate of increase in value added, generated between the policy and control groups after publication of the Ruling. While in the first group there was a real fall of 53.30%, in the second one there was an increase of 105%, which can demonstrate a simple process of market migration due to unfair competition generated by the tax incentive, as verified in a study by Bondonio and Greenbaum (2007) for the North American Enterprise Zones. Thus, state intervention in the economy has not generated efficiency in the market but only negative externality to companies that perhaps could not have access to the tax incentive. This result gives rise to reflections on the decision-making capacity of political agents responsible for public choices.

As highlighted by Oliveira (1999), the choice of tax incentive concession by federative units generates some cost that, as a rule, cannot be measured. Thus, there is some real information asymmetry on the part of public managers that prevents choices from being economically rational or satisfying all agents involved (Oliveira, 1999). In existing democratic models, public managers are constantly subject to influences from organized groups (rent-seeking), which allows certain agents to actively influence political decisions, compromising the most rational economic choices (Oliveira, 1999).

In addition, results indicate a clear gradual reduction of the textile industry value added growth rate, which may signal a progressive weakening of the sector in the state. This negative result may be closely linked to state foreign trade policies. According to Macedo and Angelis (2013), with the publication of the Pro-Employment program (Law no. 13,992/2007), Santa Catarina has changed the level and structure of the state's imports. Until 2004, the state's largest importers were industrial companies. This situation has been completely reversed in the following period, turning trading companies into leaders of import processes from 2011 (Macedo & Angelis, 2013).

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6 CONCLUSIONS

The present study has aimed to verify the value added behavior generated by textile companies before and after the adoption of a public policy, considering tax incentives effects as an inductive tool for the state's textile chain economic growth. Preliminarily, tax, political and economic issues were considered, taking into account the foundations of the current "Tax War" scenario in Brazil. In an empirical way, the study has sought to measure tax incentive effects as an inductive tool for economic growth in the state textile chain, analyzing the value added behavior generated by textile companies before and after the institution of the presumed ICMS credit.

Results show a 32.89% decrease in the real value added monthly generated by companies in the sector after institution of the presumed ICMS credit (the monthly average value added before the Ruling was published was 3.28% per month; it has increased to 2.20% in the subsequent period). In addition, after introduction of the tax incentive, there was a real decrease of 53.30% in the control group (companies without tax incentive), while at the same time a 105% increase in the policy group (companies with tax incentives), which shows a clear process of market migration, possibly in view of unfair competition generated by the tax incentive.

According to FIESC (Brazilian Portuguese abbreviation for the Federation of Industries of the state of Santa Catarina) (2014, page 13), "The textile sector has lost productive density in the years analyzed, measured by the degree of industrialization." This means that industrial costs have increased more than the value added. This lower production density, for FIESC (2014, p.13) "is related to an increase in textile raw materials imports for use in the industry." This process corresponds to the textile and garment industrial movement in the rest of Brazil, where, in the same period analyzed, production density increased to two industrial segments (FIESC, 2014). However, the present paper does not intend to end discussions about tax incentives effectiveness in promoting regional development but rather warn about how this type of public policy is set forth.

Therefore, the present study has sought to theoretically and empirically contribute to the topic. However, the issue still needs to be academically deepened, especially as to what measures can serve as guiding tools for redirecting this kind of public policy, allowing support for public managers to promote economically rational and efficient choices, maximizing well-being of agents involved.

REFERENCES

Alexandre, R. (2008). Direito *tributário esquematizado* (2a ed.) São Paulo: Método.

Alm, J. & Hart, J. A. (1998). *Enterprise zones and economic development in Colorado* [Working Paper No. 98-16]. Center for Economic Analysis, Department of Economics, University of Colorado, Boulder, CO, USA.

Almeida, F. C. R. de. (2000). Uma abordagem estruturada da renúncia de receita pública federal. *Revista do Tribunal de Contas da União, 31*(84), 22-28.

Amaral, J., Filho (2010). Incentivo Fiscal como Instrumento de Desenvolvimento Local ou Regional. *Revista Desenbahia*. 2(1), 07 – 38. Recuperado em 16 agosto, 2016, de http://www.desenbahia.ba.gov.br/uploads/2508201114531875_Cap1.pdf

Arbix, G. (2002). Políticas do desperdício e assimetria entre público e privado na indústria automobilística. *Revista Brasileira de Ciências Sociais, 17*(48), 109-129.

Assunção, M. C. (2011). Incentivos fiscais em tempos de crise: impactos econômicos e reflexos financeiros. *Revista da PGFN, 1*(1), 99-121.

Julio Cesar Fazoli, Fabrícia da Silva Rosa, Leonardo Flach, Luiz Felipe Ferreira

Avi-Yonah, R. S. (2008). Os três objetivos da tributação. *Revista Direito Tributário Atual, 22*.

Boarnet, M. G. & Bogart, W. T. (1996). Enterprise zones and employment: evidence from New Jersey. *Journal of Urban Economics, 40*(2), 198-215.

Bondonio, D. & Engberg, J. (2000). Enterprise zones and local employment: evidence from the states' programs. *Regional Science and Urban Economics, 30*(5), 519-549.

Bondonio, D. & Greenbaum, R. T. (2007). Do local tax incentives affect economic growth? What mean impacts miss in the analysis of enterprise zone policies. *Regional Science and Urban Economics, 37*(1), 121-136.

Calderaro, F. R. S. (1973). *Incentivos fiscais à exportação.* São Paulo: Resenha Tributária.

Cardozo, S. A. (2013). Crise da política regional de desenvolvimento e a guerra fiscal: estudo de alguns estados selecionados. *Anais do Encontro Nacionais da ANPUR*, Recife, Pernambuco, Brasil, 15.

Carrazza, R. A. (2002). *Curso de Direito Constitucional Tributário* (17a ed.). São Paulo: Malheiros Editores Ltda.

Carvalho, J. R. & Oliveira, V. H. (2003). O Fundo de desenvolvimento industrial do Ceará: uma avaliação econométrica com dados em painel para o período de 1995 a 2001. *Estudos Econômicos, 47*(1), 12-14.

Cavalcanti, F. Q. B. (1997). Reflexões sobre o papel do Estado frente à atividade econômica. *Revista Trimestral de Direito Público, 1*(20), 1997.

Cheshire, P. C. & Gordon, I. R. (1998). Territorial competition: some lessons for policy. *The annals of regional science, 32*(3), 321-346.

Chirinko, R. S. & Wilson, D. J. (2008) State investment tax incentives: A zero-sum game?. *Journal of Public Economics, 92*(12), 2362-2384.

Decreto n° 1.669, de 08 de setembro de 2008. Introduz a Alteração 1.774 no RICMS/01. Diário Oficial do Estado de Santa Catarina, Florianópolis, 08 de setembro de 2008. Recuperado em 16 agosto, 2016, de http://legislacao.sef.sc.gov.br/Consulta/Views/Publico/Frame.aspx?x=/html/decretos/frame_decretos.htm

Decreto n° 2.870, de 27 de agosto de 2001. Aprova o Regulamento do Imposto sobre Operações Relativas à Circulação de Mercadorias e sobre Prestações de Serviços de Transporte Interestadual e Intermunicipal e de Comunicação do Estado de Santa Catarina. Diário Oficial do Estado de Santa Catarina, Florianópolis, 29 de agosto de 2001. Recuperado em 16 agosto, 2016, de http://legislacao.sef.sc.gov.br/legtrib_internet/cabecalhos/frame_ricms_01_00_00.htm.

Dowall, D. E. (1996). An evaluation of California's enterprise zone programs. *Economic Development Quarterly, 10*(4), 352-368.

Dulci, O. S. (2002). Guerra fiscal, desenvolvimento desigual e relações federativas no Brasil. *Revista de Sociologia e Política, 18*, 95-107.

Elali, A. (2007). *Incentivos fiscais, neutralidade da tributação e desenvolvimento econômico: a questão da redução das desigualdades regionais e sociais.* Incentivos fiscais: questões pontuais nas esferas federal, estadual e municipal. São Paulo: MP, 37-66.

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ICMS PRESUMED CREDIT CONCESSION FOR TEXTILE INDUSTRIES OF STATE OF SANTA CATARINA

Ferreira, S. G. (2000). *Guerra fiscal: competição tributária ou corrida ao fundo do tacho?* Boletim da Secretaria de Assuntos Fiscais do BNDES: informe-se, Rio de Janeiro, 4.

Ferreira, S. G. & Oliveira, L. S. (2009). *Avaliação de impacto de um programa de incentivo fiscal com uso de método quase-experimental.* Seminário. Instituto de Economia da Universidade Federal do Rio de Janeiro, Rio de Janeiro, RJ, Brasil.

Federação das Indústrias de Santa Catarina. (2014). *Rotas Estratégicas Setoriais para a Indústria Catarinense 2022: Têxtil & Confecção.* Florianópolis: FIESC.

Formigoni, H. (2008). *A influência dos incentivos fiscais sobre a estrutura de capital e a rentabilidade das companhias abertas brasileiras não financeiras.* Tese de Doutorado, Faculdade de Economia, Administração e Contabilidade, Universidade de São Paulo, São Paulo, Brasil.

Gadelha, G. P. (2010). *Isenção tributária: crise de paradigma do federalismo fiscal cooperativo.* Curitiba: Juruá.

Giambiagi, F. & Além, A. C. D. de (2008). *Finanças públicas: teoria e prática no Brasil.* Brasil: Elsevier.

Grau, E. R. (2006). *A ordem econômica na Constituição de 1988* (11a ed.). São Paulo: Malheiros.

Gujarati, D. N. & Porter, D. C. (2011). *Econometria Básica* (5a ed.). São Paulo: AMGH Editora.

Ibanez, P. (2005). Guerra fiscal e território brasileiro: o caso do setor automotivo. *Anais do Encontro de Geógrafos da América Latina*, São Paulo, São Paulo, Brasil, 10.

O´Keefe, Suzanne (2004). Job creation in California's enterprise zones: a comparison using a propensity score matching model. *Journal of Urban Economics*, *55*(1), 131-150.

Kroetz, C. E. St. (2000). *Balanço social, teoria e prática.* São Paulo: Atlas, 2000.

Lee, Y. (2008). Geographic redistribution of US manufacturing and the role of state development policy. *Journal of Urban Economics, 64*(2), 436-450.

Lei Complementar nº 123, de 14 de dezembro de 2006. Institui o Estatuto Nacional da Microempresa e da Empresa de Pequeno Porte. Diário Oficial da União, Brasília, 15 de dezembro de 2006. Recuperado em 16 agosto, 2016, de http://www.planalto.gov.br/ccivil_03/leis/LCP/Lcp123.htm

Lima, A. C. C. & Lima, J. P. R. (2010). Programas de desenvolvimento local na região Nordeste do Brasil: uma avaliação preliminar da "guerra fiscal". *Economia e Sociedade, 19*(3), 557-588.

Luca, M. M. M. de. (1998). *Demonstração do Valor Adicionado: do cálculo da riqueza criada pela empresa ao valor do PIB.* São Paulo: Atlas, 1998.

Luca, M. M. M. de & Lima, V. F. L. (2007). Efeito dos incentivos fiscais no patrimônio das entidades beneficiárias do programa FDI, do governo do estado do Ceará. *Contextus - Revista Contemporânea de Economia e Gestão, 5*(1).

Macedo, F. C. de & Angelis, A. de. (2013). Guerra fiscal dos portos e desenvolvimento regional no Brasil. *Revista de Desenvolvimento Regional, 18*(1), 185-212.

Mello, G. R. & Armange, M. W. (2014). ICMS e a geração de postos de trabalhos: comparativo entre os estados das regiões nordeste e Sul do Brasil. *Revista Capital Científico-Eletrônica, 12*(3), 44-58.

Mello, L. de. (2008). The Brazilian "Tax War" The Case of Value-Added Tax Competition among the States. *Public Finance Review, 36*(2), 169-193.

Melo, M. A. (1996). Crise federativa, guerra fiscal e "hobbesianismo municipal" efeitos perversos da descentralização? *São Paulo em perspectiva, 10*(3).

Nascimento, S. P. do. (2009). Guerra fiscal: uma análise quantitativa para estados participantes e não participantes. *Revista Economia*, 211-237.

Nascimento, S. P., Camara, M. R. G., & Godoy, M. R. (2002). Guerra fiscal: causas e consequências. Uma análise empírica para o Estado do Paraná. *Anais Encontro da Associação Nacional dos Programas de Pós-Graduação em Administração*, Salvador, Bahia, Brasil, 26.

Neumark, D. & Kolko, J. (2010). Do enterprise zones createjobs? Evidence from California's enterprise zone program. *Journal of Urban Economics, 68*(1), 1-19.

Oliveira, J. N., Júnior, & Dias, A. F. (2011). Guerra Fiscal no Estado do Pará: Uma avaliação da política de incentivos sobre o ISS, Emprego e Valor Adicionado Bruto da indústria. *Anais do Circuito de Debates Acadêmicos (CODE) – IPEA*, Brasília, Distrito Federal, Brasil, 2.

Oliveira, J. N., Júnior, Dias, A. F., & Tabosa, F. J. S. (2014). Avaliação da Política de Incentivos Fiscais sobre a Capacidade Fiscal, ISS, Emprego e Valor Adicionado Bruto da Indústria no Estado do Pará. *Novos Cadernos NAEA, 17*(1).

Oliveira, L. G. (1999). Federalismo e guerra fiscal. Pesquisa & Debate. *Revista do Programa de Estudos Pós-Graduados em Economia Política, 10*(2).

Papadopol, M. D. (2009). *A extrafiscalidade e os controles de proporcionalidade e de igualdade.* Dissertação de Mestrado, Universidade Federal do Rio Grande do Sul, Porto Alegre, Brasil.

Perobelli, F. & Piancastelli, M. (1996). *ICMS: evolução recente e guerra fiscal*. Brasília: IPEA (Texto para discussão nº 402). Recuperado em 29 fevereiro, 2016, de http://repositorio.ipea.gov.br/handle/11058/1789

Prado, S. (1999). Guerra fiscal e políticas de desenvolvimento estadual no Brasil. *Economia e Sociedade, 8*(2), 1-40.

Prado, S. & Cavalcanti, C. E. G. (2000). *A guerra fiscal no Brasil.* São Paulo: Fundap/IPEA/FAPESP.

Rezende, A. J. (2015). *Avaliação do impacto dos incentivos fiscais sobre os retornos e as políticas de investimento e financiamento das empresas.* Tese de Livre-Docência, Faculdade de Economia, Administração e Contabilidade da Universidade de São Paulo, Ribeirão Preto, São Paulo, Brasil.

Rodrigues, H. T. & Freitas, D. D. (2005). Cooperativismo interinstitucional público: uma proposta de gestão pública tributária para superação da guerra fiscal em busca do desenvolvimento. *Direitos sociais e políticas públicas: desafios contemporâneos, 1*, 2686-2705.

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ICMS PRESUMED CREDIT CONCESSION FOR TEXTILE INDUSTRIES OF STATE OF SANTA CATARINA

Rodrígues-Pose, A. & Arbix, G. (1999). Estratégias do desperdício. A guerra entre estados e municípios por novos investimentos e as incertezas do desenvolvimento. *Novos Estudos Cebrap, 54*, 55-71.

Santos, A. dos. (2003). *Demonstração do Valor Adicionado: Como elaborar e analisar a DVA*. São Paulo: Atlas.

Stark, K. J. & Wilson, D. J. (2006). What do we know about the interstate economic effects of state tax incentives?. *Geo. JL & Pub. Pol'y, 4*, 133.

Suzigan, W. & Furtado, J. (2006). Política industrial e desenvolvimento. *Revista de economia política, 26*(2), p. 163-185.

Tanzi, V. & Zee, H. H. (2000). Tax policy for emerging markets: developing countries. *National Tax journal*, 299-322.

Varsano, R. (1996). *A guerra fiscal do ICMS:* quem ganha e quem perde. *Seminário Internacional "Políticas Industriais Recentralizadas"*, CEPAL/IPEA, Brasília.