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Influence of aggregate corruption on social development and wealth generation of Mercosur countries

Influência da corrupção agregada no desenvolvimento social e na geração de riqueza dos países do Mercosul

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Keywords
Corruption.
Socioeconomic development.
Public governance.
Mercosur.

Abstract

Corruption is a theme of increasing importance for world governments and one of the factors associated with public governance and socioeconomic development. Considering the world scenario on the theme, we aimed to investigate how aggregate corruption influences the socioeconomic indicators Gross Domestic Product (GDP) and Human Development Index (HDI) in the Mercosur countries. To achieve this goal we performed panel regression tests using data from 1996 to 2016. The results allowed us to estimate a statistically significant relationship between Regulatory Quality and HDI. Regarding GDP, Control of corruption, Political stability, Rule of law and Voice and responsibility indicators influenced it positively. Thus, evidence indicates that the model's explanatory capacity is better for GDP than for HDI.

Keywords
Corrupção.
Desenvolvimento socioeconômico.
Governança pública.
Mercosul.

Resumo

A corrupção é uma temática em ascensão nos governos mundiais, sendo um dos fatores associados à governança pública e ao desenvolvimento socioeconômico. Tendo em vista o cenário mundial, a presente pesquisa tem por finalidade investigar como a corrupção agregada influencia os indicadores socioeconômicos – Produto Interno Bruto (PIB) e Índice de Desenvolvimento Humano (IDH) – dos países do Mercosul. Para tanto, foram realizados testes de regressão em painel compreendendo uma análise temporal de 1996 a 2016. Com o desenvolvimento do estudo foi possível estimar uma relação significativa estatisticamente entre a Qualidade Regulatória e o IDH, já em relação ao PIB, o Controle de Corrupção, Estabilidade Política, Estado de Direito e Voz e Responsabilidade foram os indicadores que o influenciaram de forma positiva. As evidências indicam, assim, que a capacidade explicativa do modelo é melhor para o PIB do que para o IDH.

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Pratical implications

The results of the study suggest that the control of corruption helps the economic development of the countries analyzed, because the lower the tendency to serve individual interests, the better the allocation of resources favoring the reduction of inequality and the circulation of money. Thus, they stress the need to deter corruption and the need to discuss of the issue among Mercosur countries, which would favor joint control actions.

1 INTRODUCTION

Corruption is one of the important current problems that affects all countries, regardless of geographical region, level of development, political system or other criteria, undermining governance, the democratic rule of law and the legitimacy of institutions (Leal, 2013; Leal & Silva, 2014; Leal & Granado, 2015). Until the early 1990s there was almost no concern with addressing corruption on an international agenda, so the subject was studied considering specific context of each nation. Due to the increase of corrupt practices in societies of different parts of the world, there is a lot of discussion aimed at establishing mechanisms of intergovernmental cooperation to combat corruption effectively (Leal & Granato, 2015).

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In face of this, the World Bank has come to recommend structural reforms in national states (Cozzolino & Irving, 2015) and has been investing in research capable of measuring corruption at both aggregate and disaggregated levels (Kaufmann, Kraay, & Mastruzzi, 2006). We aimed to measure aggregate corruption and, to achieve this goal, we used the Worldwide Governance Indicators (WGI), which provides several indexes (Kaufmann, Kraay, & Mastruzzi, 2011) related to the level of social inequality (Marino, Soares, Luca, & Vasconcelos, 2016).

Marini et al. (2016) investigated the relationship between governance indicators of the World Bank and indicators of socioeconomic development in the BRICS countries. The authors highlighted at the end of the study the need to compare their results with those of other countries and blocks. In this study, the authors' methodology was adapted to meet this need.

Leal and Granato (2015) highlighted the absence of academic investigations about corruption in Mercosur from an institutional perspective of integration, and stressed that the countries that integrate the bloc have made important commitments to international organizations such as the UN and the OAS to articulate efforts to fight against corruption. However, according to the authors, prevention and fight against corruption have aroused little discussion on the Mercosur agenda in the period 2003-2015, being limited to the discursive sphere.

Considering this context, we aimed to investigate the influence of aggregate corruption on the socioeconomic indicators Gross Domestic Product (GDP) and Human Development Index HDI of Mercosur member countries from 1996 to 2016 by using the WGI. We intended to contribute to governments by enabling a transparent and citizen management, and stimulating reflections on problems of inefficiency of public governance due to corrupt practices and consequently affecting public policies. Additionally, the study complies with the request of Marino et al (2016) investigating other economic blocs, allowing future comparisons.

The analysis of governance within an economic bloc is justified by the fact that its institutions develop public policies and, by associating themselves, facilitate the transfer and connection of such policies in a regional integration process. In this line, the institutions of the Southern Common Market (Mercosur) act according to a facilitated model for sharing ideas and knowledge (Pereira, Bernardo, Culpi, & Pessali, 2018).

Intergovernmental cooperation has proven to induce the fight against corruption. However, there is little research on this subject from an institutional perspective addressing the economic development of member countries (Leal & Granato, 2015). In addition, we intend to contribute to corruption research to gain space in government agendas. According to Marani et al. (2018), it would be possible to ensure a space for researchers to work alongside administrative praxis because, even though there is some research on the theme, the degree of consolidation of their results is still low.

2 LITERATURE REVIEW

Through an exploratory search in the databases SCOPUS and Google Scholar with the keywords "governance indicators" and "socioeconomic development", we found few studies on the subject: Gaysigiz, 2013; Taylor et al, 2015; Marino et al, 2016; Narankhuu, 2018 and; Caetano et al., 2019.

The study by Gaysigiz (2013) sought evidence on the relationships between national cultural dimensions, socioeconomic development and quality of governance. The author revealed that the quality of governance of institutions in a country has a considerable level of influence on national development. In this line Taylor (2015) identified that the quality of a country's governance is an important factor in adhering to the Scaling Up Nutrition (SUN) nutrition policy, i.e., strengthening governance in states where there is acute and chronic malnutrition may increase their involvement with initiatives such as SUN.

As already mentioned, Marino et al (2016) investigated the relationship between World Bank governance indicators and socioeconomic development indicators in the BRIC countries between 2005 and 2012; and Caetano et al (2019) investigated the relationship between socioeconomic development and governance indicators in Latin America between 2000 and 2014. Both identified positive impacts of good governance practices on socioeconomic development.

Finally, Narankhuu (2018) discussed the effects of mining expansion on Mongolian socioeconomic development and political institutions from the analysis of the World Governance Index associated with the global metal price index. The author concluded that Mongolia's institutional quality score (government effectiveness, rule of law, and Control of corruption) has declined, creating increasing risks to the country's socio-economic development.

All of these studies used regression analysis as a methodology, and those who analyzed more than one country (Tayor, 2015; Marino et al, 2016; and Caetano et al, 2019) used panel data. It was possible to observe in all works the relationship of the World Governance Index with socioeconomic development.

Governance involves mechanisms aimed at minimizing "agency conflict". The relationship between principal and agent should involve actions that maximize the welfare of the former. Conflict arises from the divergence of interests and the behavior of the subjects will depend on the relationship agreed between them (Jensen & Meckling, 1976). Governance studies aim to minimize information disputes between the principal (the citizen) and the agent (the public administrators). Thus, we seek to develop behaviors related to public responsibility, transparency and social control (Jacques, Vicente, & Ensslin, 2013). Because it is a systemic process (Caetano, Araújo, & Khan, 2019), governance must be conducted through the articulation of subjects, institutions and executive powers (Candido & Dreher, 2013).

From this perspective, corruption is a theme intrinsically related to governance, as it is an indication of broad institutional failures (Kaufmann et al., 2006). Corruption may be defined as abuse of authority by civil servants for personal gain (Blackburn, 2012). What determines the extent of the damage it can do is the type and amount of corrupt activity (Balboa & Takenaka, 2010). It arises from the handling of resources for public policy implementation (Leal & Granato, 2015) and disproportionately affects those with the least personal and economic resources (Sims, Gong, & Ruppel, 2012).

For Balboa and Takenaka (2010), corruption is a result of the monopoly of power, combined with discretion and lack of responsibility. Thus, it can influence economic behavior in many ways: damaging incentives, destroying opportunities, distorting price signals and depleting resources, creating uncertainties and compromising public policies (Blackburn & Forgues-Puccio, 2009). Higher levels of corruption are believed to be associated with lower levels of development (Blackburn, 2012).

With regard to Latin American countries, the transition from authoritarian to democratic regimes and cooperation between governments became inducers of anti-corruption processes (Leal & Granato, 2015). Since 2000, Mercosur has undergone a process of renewal that has intensified the relevance of discussions on social issues and consequently on the policies built (Pereira et al., 2018).

However, according to Caetano et al. (2019), the transition from authoritarian to democratic regimes was not accompanied by increased human development. The authors found that the countries with the best GDP performance had, over time, a lower growth rate. The relationship that indicates the greater the slower human progress it tends to be (UNDP 2018) is natural and inevitable. From the nineteenth to the 20th century, there was an increase in the level of inequality in income and consumption. Thus, we believe that if there is no exogenous pressure to decrease the level of inequality, corruption will tend to increase (Moraes & Torrecillas, 2014).

Because of the growing economic interdependence between nations, the impact and cost of corruption are easily spread across many countries, and as a result, research in developing countries is likely to benefit developed country governance as well (Balboa & Takenaka, 2010). Thus, we believe that to increase the fight against corruption, there is a need for its measurement. In this perspective, the World Bank has begun to recommend structural reforms by states to implement a new public management model, which calls for the reduction of intervention by member states, giving them the role of regulator, inspector and promoter (Cozzolino & Irving, 2015).

In order to measure corruption, and particularly aggregate corruption, the World Bank formulated the WGI in 1999 through an initiative by Kaufmann, Kraay and Mastruzzi. The indicator covers the analysis of more than 200 countries, both developed and developing. The instrument aggregates governance insights from 31 data sources provided by 25 organizations (Kaufmann, Kraay, & Mastruzzi, 2007). The methodology used in the WGI formulation standardizes data from varied sources into comparable units, builds an aggregate governance indicator, expressed as a weighted average of those sources, with margins of error that reflect the inevitable measurement inaccuracy (Kaufmann et al., 2011).

In general, the indicators aim to ascertain the institutions essential to the functioning of democratic societies. Therefore, WGI evaluations seek to analyze aspects that need improvement in order to improve process evaluation and, consequently, to give more credibility to States at the international level (Cozzolino & Irving, 2015) since corruption is one of biggest enemies of organizations (Marani, Brito, Souza, & Brito, 2018)

In formulating the WGI base six indicators were identified: Voice and Accountability, Political Stability and Absence of Violence, Government Effectiveness, Regulatory Quality, Rule of Law, and Control of Corruption. Among the six, the first three measures the processes by which people chose, monitor and replace governments.

The next two, Government Effectiveness and Regulatory Quality, aim to gauge government capacity to formulate and implement effective and sound policies; and the last two reflect the respect of citizens and the state for the institutions that govern economic and social interactions (Moraes & Torrecillas, 2014). In addition, Control of Corruption also seeks to capture the perception of the extent to which agents pursue private interests (Kaufmann et al., 2011).

Kaufmann et al. (2007) believe that the usefulness of the WGI project and its rise to researchers and policy makers are linked to four factors. The first refers to data that provide coverage of numerous countries. The second relates to different data sources that are able to accurately exposing governance information. The third is the attenuation of the specificity of individual governance measures. Finally, the fourth indicates that governance estimates are accompanied by explicit margins of error that transparently indicates the inevitable degree of uncertainty associated with measuring governance by any means. From these considerations, we formulated the following hypotheses:

H_1: WGI positively influences the HDI of the Mercosur countries.

H_2: WGI positively influences the GDP of Mercosur countries.

3 METHOD

3.1 Sample and analysis period

The sample includes the member countries of the Mercosur economic bloc, namely: Argentina, Brazil, Paraguay, Uruguay, Venezuela and Bolivia. The inclusion of Bolivia in the sample is due to the realization of the Protocol of Accession effective in 2015 aimed at transforming Bolivia from an Associated State to a State Party. According to the source, Venezuela has been suspended, since 2017 (period after the analysis), of the rights and obligations intrinsic to the bloc, because according to the Ushuaia Protocol (1998), there was a breakdown of the democratic order in that country (Mercosur, 2019). The temporal analysis begins in 1996 and ends in 2016. The World Governance Indicator was disclosed only for the years analyzed, which justifies the temporal delimitation of the study.

3.2 Econometric models description

To test the hypotheses and achieve the objective of this research, the analysis was conducted based on the following equations.

$$\Delta GDP_{i,t} = VA_{i,t} + PV_{i,t} + GE_{i,t} + RQ_{i,t} + RL_{i,t} + CC_{i,t} + u_{i,t} \qquad (1)$$

$$\Delta HID_{i,t} = VA_{i,t} + PV_{i,t} + GE_{i,t} + RQ_{i,t} + RL_{i,t} + CC_{i,t} + u_{i,t} \qquad (2)$$

Chart 1 describes the analyzed variables and their respective goals, the source from which they were collected and accompanied by the expected signal according to the literature for this research. It should be noted that the economic variables were deflated according to the Consumer Price Index.

Variables	Aim	Source	Expected signal
ΔGDP – Gross Domestic Product Growth Rate	indicates the need for monetary resources for the purchase of goods and services indispensable for survival (Jannuzzi, 2002).	World Bank (2019)	
ΔHDI - Human Development Index Variation	measures a nation's progress from three dimensions: income, health and education (UNDP, 2018)	UNDP (2018)	+
VA - Voice and accountability	capturing perceptions of the extent to which a country's citizens are able to participate in selecting their government, as well as freedom of expression, freedom of association, and a free media.(Kaufmann et al., 2011)	World Bank (2018)	+
PV - Political stability and absence of violence/ terrorism	capturing perceptions of the likelihood that the government will be destabilized or overthrown by unconstitutional or violent means, including politically-motivated violence and terrorism(Kaufmann et al., 2011)	World Bank (2018)	+
GE- Government effectiveness	capturing perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies (Kaufmann et al., 2011)	World Bank (2018)	+
RQ – Regulatory quality	capturing perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development (Kaufmann et al., 2011)	World Bank (2018)	+
RL - Rule of law	capturing perceptions of the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence (Kaufmann et al., 2011)	World Bank (2018)	+
CC - Control of Corruption	capturing perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as 'capture' of the state by elites and private interests(Kaufmann et al., 2011)	World Bank (2018)	+

Chart 1. Description of data collection variables

3.3 Estimation of econometric models

Regarding the econometric model, we performed panel data analysis. Prior to estimation, we employed the Levin-Lin-Chu unit-root test to verify whether the variables are stationary (Brooks, 2008). Then, we performed estimations through the tests: Grouped, Fixed Effects and Random Effects. In order to identify the most appropriate estimation for panel data, we performed the following tests: Breusch-Pagan-Godfrey, Hausman and Chow. After these procedures, and to validate the results of the most appropriate model, we performed the multicollinearity (Variance Inflation Factor Test), autocorrelation (Breusch-Godfrey Test), heteroscedasticity (Breusch-Pagan-Godfrey Test), normality tests. (Jarque-Bera test) and endogeneity (Hausman test).

4 RESULTS

Initially, we performed the Levin, Lin, & Chu test to verify if the variables are stationary, as is shown in Table 1.

Table 1. Unit root test

Variables	Levin, Lin & Chu t* test		Levin, Lin & Chu t test* (after 1st difference)	
	T-statistic	P-value	T-statistic-t	P-value
GDP	-2.23803	0.0126**	-	-
HDI	-0.18218	0.4277	-1.93986	0.0262**
Voice and accountability	-1.05126	0.1466	-7.32188	0.0000***
Political stability	1.92405	0.9728	-2.61612	0.0044***
Government effectiveness	-2.20602	0.0137**	-	-
Regulatory quality	-0.61808	0.2683	-2.21374	0.0134**
Rule of law	-0.77581	0.2189	-5.87365	0.0000***
Control of Corruption	-0.44312	0.3288	-2.25823	0.0120**

Notes: based on the results of Eviews 9.5. ***, **, *: significance of 1%, 5% e 10%, respectively.

Based on the results presented in Table 1, it is possible to verify that the series of the Government Effectiveness and GDP variables presented steady behavior. However, the results of the Levin, Lin & Chu test for the other series have a value greater than 5% at p-value, i.e., it is not possible to assume that there are no unit roots. The application of the tests in the differentiation of the other series revealed only stationary behavior. As the other variables were presented as I (1), it was necessary to differentiate them in order to eliminate non-stationarity, making them I (0).

Then, tests were performed to identify the best estimation for panel data. According to the results presented in Table 2, the best estimates, at the 10% significance level, for the GDP and the HDI were, respectively, the Random Effect and the Grouped.

Table 2. Test results needed to identify the most appropriate estimation for panel data

Tests	GDP		HDI	
	Statistic	P-value	Statistic	P-value
Breusch-Pagan-Godfrey	11.78075	0.0670*	8.261112	0.2196
Chow	1.460277	0.2163	2.059977	0.9141
Hausman	4.674275	0.5862	2.229252	0.0634*

Notes: ***, **, *: significance of 1%, 5% e 10%, respectively.

The principle behind the HDI emphasizes that national development must be assessed not only by per capita income, but also by a methodology, that relates health and education (UNDP, 2018). After all, GDP is built with economic indicators of similar dimensional nature, becoming an indicator with limited validity to represent the level of socioeconomic development (Jannuzzi, 2002). Table 3 shows the relationship between the variables presented in the study hypothesis after their results were validated.

Table 3. HDI and GDP estimates, by Group and by Random Effect, respectively

Dependent variables		**HDI**			**GDP**	
Independent variables	Coefficient	T-statistic	P- value	Coefficient	T-statistic	P- value
Constant	0.0045	9.1712	0.0000***	3.2205	3.0156	0.0038***
Voice and accountability	0.0066	1.1919	0.2376	7.0346	1.7086	0.0930*
Political stability	-0.0009	-0.2572	0.7979	6.1232	2.3086	0.0246**
Government effectiveness	0.0181	2.6789	0.0093***	8.6157	1.7615	0.0835*
Regulatory quality	-0.0094	-0.9974	0.3223	1.0466	0.3110	0.7570
Rule of law	-0.0051	-0.9013	0.3708	16.5639	2.1235	0.0381**
Control of Corruption	-0.0014	-1.5326	0.1302	-0.3238	-0.4439	0.6588
R^2		0.1086			0.2837	
Adjusted R^2		0.0263			0.2083	
Regression standard error		0.0050			2.8377	
Σ of squared residuals		0.0016			458.9877	
Log likelihood		283.4145			-	
F-statistics		1.3197			3.7627	
P-value (Stat. F)		0.2612			0.0032	
Mean dependent var.		0.0050			1.3330	
S. D. dependent var		0.0050			3.1843	
Akaike		-7.6782			-	
Schwarz		-7.4568			-	
Hannan-Quinn		-7.5901			-	
Sample (adjusted)		2005 2016			2006 2016	
periods included		12			11	
Cross-sec included		6			6	
Total obs.		72			64	

Notes: ***, **, *: significance of 1%, 5% e 10%, respectively.

Based on Table 3, we may infer that only the rule of law was statistically significant at 1% in relation to the HDI, which corroborates the results of Caetano et al. (2019), since the indicator presented a direct relationship with the HDI. Thus, we can also infer that the reliability of agents in state laws and regulations provides social development, that is, the higher the rule of law the better the HDI. Perhaps this relationship may come from the impact of the organization of public policies based on well-established guidelines by the legislative sector, making their application efficient. Thus, we deduce that the member states of the economic bloc by elaborating a credible legislation also enable the implementation of policies that benefit the bloc as a whole, favoring the integration process and the sharing of ideas.

The Voice and accountability, Control of Corruption, Government effectiveness, Regulatory quality and Political stability indicators did not present statistically significant relationship to explain the behavior of HDI. The lack of relationship found in the results with the first two indicators is consistent with the findings of Caetano, Araújo, & Khan (2019). However, the research results differ from those presented in Marino et al. (2016), who found that the variables Government Effectiveness and Control of corruption were the most significant in relation to HDI. Such difference between the study results may be related to methodological procedures necessary to validate the results (unit root test, multicollinearity, autocorrelation, heteroskedasticity, normality and endogeneity), a process neither presented nor identified in Marino et al (2016).

GDP, Political stability and Regulatory quality were statistically significant at the 5% level, while Control of corruption and the Rule of Law were significant at 10%. In addition, the coefficients of the indicators presented positive relationship with the economic indicator. From this perspective, increasing indicators would benefit wealth generation.

With regard to Political stability, it is expected that governments with lower chances of dismissal by illegitimate means favor the attraction of investors in the country, providing capital circulation and job creation. Consequently, according to Pereira et al. (2018), regional integration would promote the circulation of capital, goods, and people.

This contributes to making companies and other national states feel confident about investing in a country with such characteristics that stimulate the economy, bring in investors and, consequently, increasing the country's credibility with others.

The association with Regulatory quality indicates that state participation in private sector regulation can minimize controversy between public and private sector scopes, benefiting the population. The purpose of regulation is to supervise and foster, reducing the performance of the public sector. From this perspective, increasing regulatory quality provides wealth generation through efficient private sector practices that contribute to the reduction and control of corruption.

We explained earlier the significant relationship between GDP and Rule of law in the relationship with the HDI, due to the importance of well-established legislation that provides, in addition to social development and wealth generation. Thus, we infer that citizens' confidence in public powers and institutions would be the result of transparent administration, making management more democratic and participatory. These factors reduce corruption within organizations, that is, the economic bloc as a whole. Moraes and Torrecillas (2014) state that the lower the democratic score of the countries, the higher the level of corruption in the civil service, which becomes a limitation for the full and quality exercise of democracy. Therefore, these two factors are incompatible.

In contrast, Ferreira Filho (2013) identified that the indicators that measure Regulatory Quality and the Rule of Law had negative associations in relation to the per capita income growth rates. The research cited relates this negative association to the fact that legal rigidity makes it difficult to formulate the necessary reforms to ensure development. However, we believe that these two indicators are associated with the government's ability to formulate laws that stimulate growth and development and, consequently, increase citizens' confidence in these practices, i.e., would not put the legal system in a cramp.

The significant and positive association between the Control of corruption index and wealth generation shows that the lower the tendency to serve individual interests through effective control, the better the allocation of resources that favors the reduction of inequality and money circulation. Thus, the performance of each nation's administration is a consequence of a less corrupt government that has a direct impact on its economic performance. In this sense, Moraes and Torrecillas (2014) indicate that there is a slight trend of rising unemployment and inequality with increasing corruption, which has varied causes. In addition, Marino et al. (2016) also identified the positive and significant relationship between Political Stability and Control of corruption with GDP.

Only the Voice and accountability and Government effectiveness indicators did not show significant results in the estimation in relation to wealth generation. This result corroborates those obtained by Moraes and Torrecillas (2014).

The F Test (0.2612) indicated that the set of variables presented in the model with the HDI dependent variable did not reveal good explanatory power, but in relation to GDP, the F-Test (0.0032) suggested it to be a good model. Moreover, when comparing the models, it seems that the adjusted R^2 of the model for GDP is higher than that of the model for the HDI (0.2083 and 0.0263, respectively). This indicates that the model's predictive capacity for human development is low as compared to its predictive ability to generate wealth.

However, we believe that the model's low explanatory capacity for the HDI is due to the non-use of cultural data from each nation. Similarly, Sims et al. (2012) claim that human development does not explain the variability presented in a nation's level of corruption. For this to happen, the author believes it is important to combine them with aspects related to national culture, because with different initial conditions, countries may present different perspectives on development (Blackburn, 2012).

As the model is not sufficiently explanatory, the scientific community needs further investigation to understand this problem. It should be considered that imbalances in opportunities for the population may increase inequality, a factor that would have negative implications for social cohesion and the quality of political institutions, slowing the progress of human development (UNDP 2018).

Although the study involves a 20-year time analysis, it was not possible to ascertain the relationship in 2017 and 2018 due to lack of data in international banks. The analysis of the 2016, 2017 and 2018 triennium would be interesting in order to verify Mercosur's position regarding its ability to jointly articulating its integration process. In addition, the disruption of the democratic order in Venezuela from 2017 may negatively affect aggregate corruption. In addition, according to Leal and Granato (2015), between 2003 and 2015, there was an inability of the bloc states to articulate joint efforts to improve their public administrations, avoiding and combating corruption.

Among the strengths of the study, the indexes of perception of corruption are subjective and quite inclusive measurements. We based them on questionnaires sent to various correspondents located around the world. Despite the use of distinct aspects such as coverage and methodology, they are highly correlated with each other and with economic variables (Blackburn, 2012). In the same vein, Kaufmann et al. (2006) believe that the real experiences of individuals are the best information gained since corruption generally leaves no documented tracks.

Obtaining specific data linked to the institutional characteristics of each country allows us to analyze the propensity to create opportunities for corruption (Kaufmann et al., 2006). From this perspective, researchers tend to rely more on subjective data to measure corruption, as objective data does not necessarily indicate whether there are more or less fraudulent actions in particular institutions. This is due to the difficulty of empirically measuring corruption as a clandestine activity (Blackburn, 2012). Thus, in addition to the subjective indicator being a good explanatory model for measuring aggregate corruption, we provide information from diverse sources and in significant quantities. Any approach to measuring the degree of corruption involves an uncertainty factor, as there may be errors in specific measurements (sampling, inaccuracy, etc.) also, there may not be a perfect correlation with global corruption. To reduce errors and inaccuracies, WGI takes into account many data sources (Kaufmann et al., 2006).

From this perspective, there does not appear to be any government incentive for Control of corruption investigations, although this may be a way to get answers to the activities faced by the public sector. Thus, with this quantitative study it was possible to present data that facilitate research in other axes (Marani et al., 2018). For example, it enables the public administration to analyze data as a strategy for implementing policies against the practice of fraudulent acts, as well as favoring governance.

5 CONCLUSIONS

This study investigated the relationship between aggregate corruption and socioeconomic indicators in the Mercosur countries between 1996 and 2016, to study the behavior of these indicators in search of reliable inferences on this topic. The panel data regression identified a significant relationship between Regulatory quality and HDI; Regarding GDP, the relevance of Control of corruption, Political stability and Rule of law indexes was significant and positive. Therefore, the explanatory capacity of the model is more associated with GDP.

The relationship between Rule of law and the HDI indicates that trust in the agents of state laws and in regulations induce social development. Thus, the higher the Rule of law index, the better the HDI. In this sense, when Mercosur member states elaborate credible legislation, they enable the implementation of policies that benefit the bloc as a whole, avoiding migratory currents that may affect the other countries and its economies.

GDP, Political stability and Regulatory quality were statistically significant at the 5% level, while Control of corruption and Rule of Law were significant at 10%. The results positively impact both individual countries and the bloc as a whole, as wealth generation is strongly related to the state's credibility with investors and other countries, leading to reduced unemployment, greater currency circulation and consequently to economic growth. We can also observe the increase in regulatory quality, which encourages efficient practices in the private sector, reducing and controlling corruption. There is also the settlement of the rule of law and well-established legislation. Finally, there is the control of corruption, because the lower the tendency to serve individual interests, the better the allocation of resources that favors the reduction of inequality and the circulation of money. Thus, the performance of the administration of each country is a consequence of a less corrupt government, which stimulates economic performance.

Corruption is an anonymous practice and does not always leave documentary tracks. Therefore, one of the strengths of our study is the use of subjective data from several sources, and in significant amounts to calculate aggregate corruption. In addition, we could provide tools for governments to prioritize joint agendas on corrupt practices as a means of encouraging political strategies to combat corruption in the economic bloc.

As for future research, we suggest investigations on the bloc's ability to work together to deter corruption and studies that address the country's historical factors as a means of complementation. In addition, we recommend the adoption of new methodologies that allow individual analysis of each country so that it may compare to the group's aggregate study.

We believe the results of this research make significant contributions to accounting and organizations, making it possible to understand the importance of measuring the current degree of corruption, as it directly affects the credibility with other economic blocs and private companies.

Thus, improving the visibility of Mercosur has a priority impact on the wealth generation of the countries involved. Moreover, the sharing of ideas at the economic, social and cultural level among the bloc's countries favors governmental improvements.

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