The role of epistemic communities in developing Brazilian statistics

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Abstract: This paper studies three moments in the emergence of Brazilian economic gauges: the first official economic indicators produced by the FGV in the 1940s, the production of competing indicators by the DIEESE from the 1950s onwards, and finally, the transference of economic statistics production to the IBGE in the 1970s. I found that epistemic communities played an important role in creating and developing Brazilian economic statistics. More interestingly, access to knowledge from outside Brazil through migrants, conferences, and technical partnerships were the main conduits for these indicators in the first place. Furthermore, understanding the reasons for the construction of Brazilian economic gauges explains the kind of relationship Brazilian society has with its statistics and the degree of independence its statistical offices enjoy.

Keywords: political economy of statistics; epistemic communities; sociology of quantification

Introduction

Economic indicators play a crucial role in the decision-making process of modern societies. From the evaluation of government performance to the equitability of the latest salary increase, numbers expressed in economic indicators such as GDP and inflation receive wide attention and are deemed to shape how people perceive their own reality. In order to

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understand this phenomenon an increasing body of scholarship devotes its study to the societal and political implications of the construction and use of statistics (Alonso & Starr, 1989; Desrosières, 2000; Popp Berman & Hirschman, 2018). Studying mostly developed countries, scholars have made relevant contributions to the understanding of both the politics behind the construction of statistics (Herrera, 2010; Johnson, 2015; Karabell, 2014; Mügge, 2019; Tooze, 2003) and neglected aspects of the use of indicators in our everyday lives (Coyle, 2014; Fioramonti, 2013; Kerner, 2014; Linsi & Mügge, 2019).

In line with previous research in the literature, the question this article proposes to answer is: How and why were economic indicators created in Brazil? This simple but powerful question is critical for understanding the process through which economic indicators[2] came to play an important role in modern societies. Given the complex history of economic indicators in Brazil where, counterintuitively, the National Statistical Office was not responsible for the creation and production of the main economic indicators until the 1980s, this article makes a contextualization of the production of economic statistics though the perspective of a few epistemic communities – in short, a group of individuals with shared beliefs (Haas, 1992). For that, the article explores four crucial moments. The first, in the 1930s, when the country began the process of coordination and uniformization of its statistics with the creation of its National Statistical Office (IBGE). The second, in the 1940s, when the Getulio Vargas Foundation (FGV) started producing the first Brazilian GDP estimation. The third, in the 1950s, when the Inter-union Department of Statistics and Socio-economic Studies (DIEESE) was founded to produce inflation indicators to support union claims. Finally, the fourth in the 1970s, when the Brazilian National Statistical Office (IBGE) turned its attention to the production of economic statistics, taking over leadership from FGV in this matter.

In order to open the black-box of historical developments concerning these moments - covering the conditions in which economic indicators were constructed and the political disputes around them -, I used a process tracing strategy. I collected information from secondary literature and, when possible, triangulated the information with more than a dozen interviews with Brazilian experts. These interviews were conducted in the context of the overarching project of which this article is a part, and thus covered other subjects besides the one investigated in this article. Ultimately, the research material offered varied perspectives on these events and allowed me to partially reconstruct these historical moments. They illustrate some of the contingent measures that allowed for the development of Brazilian economic statistics as we know them today and the decision process some

[2] In this article, consistently with what was argued in (Tooze, 2003), economic indicators, or macroeconomic statistics, encompasses indicators such as GDP, inflation and unemployment.

players found themselves in after identifying the need for economic statistics for political and societal discussions.

Using Brazil as its empirical domain, this article contributes to the literature by adding epistemic communities as an important explanatory factor to the production of national statistics and illustrates the process of the creation of the ever-important community of statistics producers. Moreover, this contribution can be split into three parts. First, this paper uncovers the intrinsic motivation of relevant players to seek the truth through statistics. Second, it shows the maturation of economic and statistical discussions in Brazil and demonstrates the role of epistemic communities in this process. Third, it shows the complex process of construction of economic statistics in countries that do not have a critical mass of technically trained personnel. Moreover, this paper suggests that producing successful and societally relevant economic statistics requires a combination of intrinsically motivated groups, able to understand and ready to use these new tools, and the presence or the accessibility of technically competent personnel.

Following this introduction, I very briefly present how the concept of epistemic communities can be used to understand the spread of economic statistics around the world. The empirical cases are presented in sections three to six. It starts with a short and introductory section on the creation of the IBGE. Chronologically, I introduce the production of the first economic indicators at the FGV. Then comes the Inter-union (DIEESE) case. Finally, the empirical part ends with the IBGE taking control of the production of the official Brazilian economic statistics. The final section concludes by showing how this tug-of-war over Brazilian economic statistics translated into the creation of a bureaucratic body which became an integral part of a transnational epistemic community of statisticians.

Expanding the role of epistemic communities in the sociology of quantification literature

The reasons for the production of statistics and why they gained so much attention are broadly explored in the literature known as the sociology of quantification (Desrosieres, 1998; Espeland & Stevens, 2008; Porter, 1995). As Popp Bermand and Hirschman (2018) argue this literature does not share general claims or have a common theoretical language, but broadly speaking seeks to answer questions such as: What shapes the production of numbers? And when does quantification make a difference? Commonly, this scholarship dives into the history of statistics revealing their relevant actors, motivations and methodological decisions. In doing so, the literature helps demystify intrinsic processes of the ascension of indicators in modern societies.

When it comes to economic indicators, scholars show how this emblematic state tool transcended its planning function and touched the life of ordinary citizens, by, for example, simplifying the way one understands how good or bad the living conditions in a country are and allowing for "objective" comparisons among citizens and groups (Espeland & Stevens, 1998; Fioramonti, 2014; Karabell, 2014; Ward, 2004). This outlook has clear political implications: regular citizens can make much stronger claims about what is happening around them, and thereby become able to act or request more informed policy changes. Of all the economic indicators, inflation rate, unemployment rate, and GDP are three of the most frequently analyzed by this literature, with special attention given to the latter.

Even so, not much attention is drawn to the fact that the assimilation of these indicators by society did not follow a linear path. Indeed, in order to be accepted and utilized, it is frequently necessary to make a good case, connecting the relevance of the indicator to some explanatory theory of how these indicators may help understand reality. For instance, the first measures of national income were deemed to have not much value per se (Lepenies, 2015). It was necessary for a theory to connect this tool with its possible uses. The Keynesian theory was the bridge for the national income measure to become societally relevant. The 1940's book "How to Pay for the War" by John Maynard Keynes closed the circuit, giving a practical and meaningful example of the applicability of the measure (Coyle, 2014; Hallak Neto, 2014; Masood, 2016). Moreover, after WWII, the desire to normalize economic life demanded new evaluative tools. Countries did not need to pay for a war anymore, but they had a crucial need for an economic indicator that could show the recovery and development of business and finance and its effects on society (Lewinsohn, 1967). In this post-war context, the sociology of quantification literature offers few explanations about how economic indicators spread around the world: compulsory evaluation tools (Kerner, Jerven, & Beatty, 2017; Lepenies, 2015), international organizations pushing their agenda (Ward, 2004), and integration into the capitalist system (Herrera, 2010) are notable attempts to do so. Beyond big powers and individuals, that surely played their role, the role of epistemic communities in spreading statistical knowledge often goes unnoticed.

Epistemic communities as defined by Haas (1992) are "networks of professionals with recognized expertise and competence in a particular domain and an authoritative claim to policy-relevant knowledge within that domain or issue-area.". These communities are most importantly characterized by a shared, coherent set of beliefs (normative, principled, and causal) and a shared notion of validity, which, together, allow them to seek a common policy agenda. While the fact that at the very core of an epistemic community lies their shared normative and principled beliefs is quite straightforward, since it guarantees the minimum set of ideas converging inside the group, the causal beliefs can be considered the driving force behind their collaboration. These, in turn, shape their notion of validity. This implies

that, in the case of the statistical epistemic community, statistics need to correspond to their specific views of the world, otherwise they become logically invalid.

Interestingly, this aspect will allow for variance, and to some extent, disagreements, among the groups responsible for measuring economic reality. This last aspect is one of the most significant characteristics of an epistemic community, since it has the most important societal implications. They can literally alter the course of a society based on the opinion of a specific group of experts. With these characteristics in mind, the relationship between politicians and epistemic communities is frequently mutually beneficial. On the politician's side, the key aspect of using the knowledge of epistemic communities is that they reduce the uncertainty of policy decisions (Haas, 1992). On the epistemic community side, as the community's expertise on the topic area is well regarded, they will seek avenues to cooperate with governments in order to see their agenda implemented (ibid).

Considering the formation of epistemic communities and their relevance in the policy making process, this paper shows how economic indicators became relevant to policy making in Brazil and how Brazilian (economic) statisticians were a by-product of this process. By adding the concept of epistemic communities as an explanatory factor for the expansion of economic indicators around the world, I propose a different take on this important process. I propose that the statistical knowledge necessary for the creation of statistics in Brazil came through the integration of Brazilian experts into broader international epistemic communities. These experts, in their turn, created their own conflicting statistics to support their strategies, priorities and policy views, which in turn led the Brazilian government to professionalize the production of economic statistics, incorporating them into the IBGE's bureaucratic domain.

The following section aims to connect these dots. Each section will explore the emergence of different groups of Brazilian experts which benefited from international connections (within a broader epistemic community). Later, the clash of notions concerning statistical validity between these communities determined the reinvention of IBGE as a bureaucratic body with the sole focus of producing the trustworthy statistics the country so sorely needed. Lastly, the new IBGE went on to create closer ties with other national bureaucracies around the world and embrace a larger epistemic community with the shared goal of fine-tuning statistics for other societal stakeholders. Figure 1 summarizes the four epistemic communities that will be discussed in each one of the following sections of this paper.

Figure 1. Overview of the Brazilian Statistical Epistemic Communities

	IBGE	FGV	DIEESE	IBGE
Period of Analysis	1936-1970s	1940s-1980s	1950s-1980s	1970s-Present
Epistemic Community Composition	Geographers and Social Scientists	Self-taught Economists	Social Scientists	Economists and Statisticians
Main Statistics	Socio-Demographic and Geographic	Inflation and National Income	Inflation and Unemployment	All statistics mentioned
Normative and principled beliefs	Scientific principle (need to be objective) Statistics are a reliable source of information			Same as others + Statistics should be in the realm of government, but competition is good
Causal beliefs	Lack of information holds Brazil back	Economic policies need statistics to be better informed	Workers could benefit from more accurate statistics	Official institutions can assure better quality of statistics
Notions of validity	Do these statistics help understanding better the Brazilian development level?	Do these statistics support better economic and development policies?	Do these statistics adequately represent the workers reality?	Are these statistics as good as possible considering the available data, resources and techniques?
Policy enterprise	Develop the country	Develop the country	Better working conditions	Create better statistics

The pre-economic statistics period in Brazil

Since Brazilian independence, in 1822, statistics were desired as administrative state tools and were deemed as having the potential to improve administrative state planning and national development strategies (Senra, 2006). This desire to produce meaningful statistics was present in several moments of Brazilian history, however, it took more than 100 years before the country was able to systematically produce statistics that went considerably beyond mere administrative entries. Considering Brazilian continental dimensions, in 1936, the National Statistical Office (IBGE) was created to coordinate and synchronize the multiple statistical production efforts that were happening simultaneously around the country. This process was led by a small band of Brazilian elites that closely followed the most recent European events and brought to the fledgling nation books, knowledge, and people (ibid).

It could be argued that the creation of the IBGE was the result of the intense work of a small group known as the IBGE's pioneers which, despite their dissimilar backgrounds, held that statistics were necessary for the state to make more rational and objective decisions. This specific point of view was stated by Mário Augusto Teixeira de Freitas, one of those pioneers, in the first speech of the National Statistical Council in 1936: "Make Brazil the statistics it must have, and statistics will make Brazil the way it should be" (ibid, p. 255, my translation). Teixeira de Freitas brought to the IBGE a vast experience he accumulated throughout the years working in several governmental branches, but most importantly already in these branches he cultivated an intrinsic curiosity for the use of data for decision making. In other words, he believed – and shared this belief with his peers - that statistics were a fundamental state tool and that their production should be prioritized as it would allow for better prescriptions for the country's problems and needs (ibid).

Even with the creation of the IBGE, the lack of specific skills to allow the systematic statistics production the country needed was evident. In this sense, a big boost for IBGE's knowledge came with the arrival of Giorgio Mortara to Brazil in 1939. He was a renowned statistics professor at the University of Milan that faced a hostile working environment riddled with restrictions as a result of his Jewish ancestry. Knowing about Mortara's tough times in Italy, Teixeira de Freitas invited him to move to Brazil (IBGE, 2007). The invitation was accepted and Mortara became a key player in the structuring of Brazilian statistical processes, supervising the production of the Brazilian census and training several Brazilian statisticians before returning to Italy after the war. Yet, at that time, the societal demand for statistics was pitiful, making IBGE the coordinator, the producer, and the user of its statistics (Senra, 2009, p. 272). In other words, the institute not only collected, standardized and produced data, but also analyzed it and prescribed possible solutions for local and national problems.

This peculiar aspect gradually led to increasing levels of introspectiveness within IBGE, causing them to disregard external developments. For instance, IBGE's specialists were engaged in thorough and costly traditional research approaches, being vehemently against using new statistical techniques that were proliferating around the world (e.g. sampling). That means that, given the budget constraints, the pursuit of comprehensive statistics led to numerous practical problems and delays in IBGE's work, opening their flank to harsh criticism in the 1950s and 1960s. The most relevant resulted from groups that increasingly demanded economic statistics, to whom IBGE was not ready to respond since it was notably focusing on socio-demographic statistics along with geographic information. It is important to note, however, that in the 1940s and the 1950s statistics did not resemble what we think of as statistics today. Indeed, many economic and statistical concepts were poorly explored around the world, even less so in Brazil.

In sum, the IBGE was the result of the intensive work of an epistemic community that, despite not sharing a common background, believed that statistics could help the country to find answers for its development problems. Moreover, for the first half of its existence, the IBGE was an active institution that developed a unique group of technicians not previously available in the Brazilian context. These people were responsible for the coordination of statistical production, their analysis and the suggestion of public policies, with important strategies concerning the settlement and development of Brazilian territory being derived from their work. Yet, as economic development discourses emerged and state planning became more sophisticated, other epistemic groups, independently and without much support from IBGE, increasingly demanded more frequent, reliable and transparent statistics, with special attention given to the ones that reflected economic activity. This new epistemic community would seek their own space among those who define national development policies, and statistics would be an important tool to achieve that goal.

The origins of Brazilian economic statistics

For most of the first half of the 20th century, Brazil produced a small number of economic indicators. The country had no indicators capable of summarizing the state of economic activity, income, employment or unemployment conditions. Some indicators to measure inflation were available. Yet, these indicators were produced by local administrative branches, served administrative functions and lacked consistency, reliability, and methodological transparency, in such a way that they were poorly able to inform the public about the evolution of prices in their respective areas (Lewinsohn 1967).

The availability of economic statistics in Brazil starts to change with the end of World War II. A central aspect of the war was the isolation of countries and the difficulty of

spreading ideas, meaning that certain innovations were mostly restricted to the countries where they were created and to their closest allies. Once the war was over, Keynesian ideas, that were widely diffused in the USA and the United Kingdom, gained a greater influence among Brazilian experts (Chacel 1995). Brazil had no Marshall Plan, and without it, there was no outside pressure to measure the economy one way or another. Yet, internal discussions over the best development model for the country were frequent. In one of those debates the lack of available economic data became a central point of discussion. In September 1944, a special commission for economic planning was formed by the Brazilian government. The commission functioned for almost one year and the discussions revolved around two Brazilian economists Roberto Simonsen and Eugenio Gudin. The lack of reliable information was Simonsen's Achilles heel (Simonsen and Gudin 2010). Simonsen used an exhaustive amount of data to make his points and establish his strategy for the country, but this data, sometimes specifically prepared for the discussion, had obvious methodological flaws which undermined his whole argument

> … [T]here were no numbers in Brazil about almost anything, there was no balance of payments, there were no price indices that were worth anything. National income, we did not know what that was. Roberto Simonsen's main weakness in this debate was his numbers. They were provided by a person who headed the statistics section of the Ministry of Labor, Industry and Commerce and was absolutely ignorant, knew nothing of what he was doing. (Antônio Dias Leite Júnior in D'Araújo, 1999, p.46 - My Tranlation)

After widely criticizing Simonsen's approach, Gudin prepared a recommendation that included giving more attention to the country's economic data production. At this moment, Gudin was a board member at the newly created Fundação Getulio Vargas (FGV), which would become the most prominent developer of economic studies and economic statistics in Brazil.

FGV was created in July 1944 as a private foundation through a presidential decree with the objective of training staff for the public sector and assisting in strategic policy decisions (Fernandes 2010). Despite being a private foundation, most of its activities were financed by the government and many of its prominent members came from important governmental departments. This non-negligible participation of the public sector since its creation gave the FGV an ambivalent characteristic, in which the private organization was expected to assist the public sector, but also had freedom to establish how to do that (ibid).

In 1946, under the recommendation and coordination of Gudin, the FGV created its Economic Unit. Considering Brazilian technical and material limitations, the organization

brought together experts with exceptional knowledge in economics. In 1947, when some data was already available, FGV hired Richard Lewinsohn, a war refugee with ample knowledge of journalism, politics, and economics, to create a monthly publication to disseminate the available data and analyze the Brazilian economy (Flores in D'Araújo, 1999, p.30). The magazine was a success, it was as likely to be found "on the table of the leaders of large enterprises as in the hands of students, and its comments were reproduced and discussed all over" (Lewinsohn, 1967, p.4). Economic journalism in this period was something new and the content of the publication could be found on the main pages of the main newspapers, feeding subsequent societal discussions (Pizarro, 2002, p. 22).

In 1951, the Economic unit of the FGV would become the *Instituto Brasileiro de Economia* (IBRE) to consolidate the knowledge that had been produced so far. There were four main members at the IBRE. The first, Eugênio Gudin, was the most prominent self-taught Brazilian economist at the time and responsible for coming up with the idea and making it a reality. The second, Octávio Gouvêa de Bulhões, was a postgraduate economist from the American University and technician in the Brazilian ministry of finance who was already collaborating with the Economic Unit before the creation of IBRE. The third, Roberto de Oliveira Campos, was a postgraduate economist from George Washington University and up to that moment had been working in the Brazilian embassy in Washington. Finally, Alexandre Kafka, was a war refugee born in Prague who studied economics in Geneva with Ludwig von Mises and was working in the IMF a couple of years before joining the IBRE's initiative. It is important to note that the first three also worked together as Brazilian Representatives in Bretton Woods in July 1944 (Schuler and Bernkopf 2014) which was a great place for networking and also the place where Campos and Gudin met for the first time.

Despite being individually highly qualified by Brazilian standards, one of the most important aspects is that they all had extensive international experience and extensive contacts outside Brazil. In fact, both the Economic Unit and the IBRE, just like most other FGV branches, benefited from this broad international network. In the specific case of the production of economic indicators and technical personnel formation, this embedded foreign participation was critical. FGV's experts had workshops, classes, and direct interaction with professionals coming from multiple countries such as Sweden, England and the USA, among them were Jacob Viner from the University of Princeton and Hans Singer from the United Nations (Santos in D'Araújo, 1999, p. 51). Specifically, concerning income estimation, J. B. Derksen, staff of the UN, came to Brazil for a couple of months and helped to roll out the framework that was under development in the UN at that time. After Derksen left, the exchange between Brazil and the UN was maintained through two other UN economists that were hired by FGV and spent many years in Brazil (Kafka in D'Araújo, 1999 p.55). Genival Santos, responsible for the National Income measurement at the time, said

that the presence of these professors and professionals was positive "because we were a country of ignorant people, we were in the scientific darkness, and these people, each of them, brought us a pre and postwar experience" (Santos in D'Araújo, 1999, p. 51). This highly motivated, newly formed Brazilian technical body was unified by the idea of developing the country and benefited from international connections giving them a window on the world. Because of that, they had access to incommensurable technical foreign expertise which allowed FGV to present itself as the most important economic center in Brazil, responsible for the production of economic statistics that were going to become pivotal in Brazilian societal discussions.

This new epistemic community did not directly confront the existing one in the IBGE, alternatively they tried to find their own space in the discussion. Indeed, to the extent that it was possible, they sought to keep a cooperative environment with the IBGE, unsurprisingly, since the IBGE was the main supplier of the primary statistics needed to produce the National Accounts. Yet, as we briefly discussed in the previous section and we shall discuss further ahead, IBGE's prioritization of socio-demographic statistics limited the development of economic statistics. But at this point, the production of economic statistics was not limited only to the IBGE and the FGV, several local organizations – public and private – engaged in producing their own statistics.

The battle for accurate socioeconomic statistics

A new dimension of the demand for statistics appeared when social groups understood that their claims could be stronger if they had statistics to back them up. In the 1950s, a series of massive strikes had two major effects: first, it showed that together unionists were stronger, and second, if in wage negotiations employers and the government had different statistics to present, workers should also present their perspective (Chaia 1989). These events led to an improbable alliance of unionists, motivated by the perspective of "great accomplishments", and social scientists, with ample technical knowledge which, however, lacked applicability.

Since the 1930s, São Paulo has been the main engine of the Brazilian industrialization process. The city grew at astonishing rates, and with it, a new type of proletariat class emerged. The unions were more diverse than ever, representing different groups of employees working in banks, metallurgy, textiles, and so on. However, wages did not increase in line with the cost of living. At that time, São Paulo municipality was responsible for measuring the inflation indicator, used as the reference for local salary adjustments, but unions believed that official numbers did not reflect reality. The mistrust deepened with the wage negotiations of 1951, employers offered a 7% increase, the municipal survey cited a

15% inflation rate, conversely workers believed prices had rocketed more than 40%. After long, acrimonious discussions, the city revised its inflation estimate to 30%, confirming the unionist's claim that the numbers did not correspond to reality (ibid).

This episode, along with experience accumulated during strikes in the subsequent years, showed that whenever salary disputes were analyzed in the judicial system, the "scientific" argument prevailed over alternative reasoning. In the situation of a wage negotiation, the scientific argument is the one backed by an inflation index (Augusto Junior 2010; Corrêa 2007). Acknowledging that, the inter-union body for statistics and socio-economic studies (DIEESE, Portuguese acronym) was created on 22 December 1955. The new Inter-union statistics department was a joint effort of workers' unions to gather data to make their claims more scientific (Augusto Junior 2010). The initiative was a game changer. This scientific knowledge caused the DIEESE to be more widely known beyond unionist circles. Indeed, one of the greatest achievements was the recognition by the vice-president João Goulart, who in 1957 supported the DIEESE's report saying that the DIEESE was a "serious organization"[3]. This episode illustrates how important DIEESE's work had become as a counterbalance to official statistics in the continuous battle throughout the wage negotiations in the following decades.

The recognition of the quality of DIEESE's work was partially the result of their association with renowned specialists. As said before, the DIEESE was the result of an alliance between unionists and social scientists from the Free Sociology and Politics School[4] (ELSP, Portuguese acronym) in São Paulo. It is possible to argue that this second group formed an epistemic community[5] with three key origins. First, an exchange program with the University of Chicago which developed qualitative community studies, extremely important for the development of surveys used in the creation of price indices. Second, an exchange with Columbia University which developed the use of quantitative tools in social sciences. Finally, a third relevant element for this epistemic community was their connection with Wilfred Leslie Stevens, a Cambridge mathematician and statistics professor at the University of São Paulo who assisted in the overarching planning of the DIEESE in refining its cost of living index (Nogueira 1992, 201). Together, these initially disconnected elements allowed for the creation and success of the DIEESE.

The DIEESE's orientation towards the improvement of labor conditions translated into a natural interest in statistics such as inflation and unemployment. Regarding the latter, in 1984, DIEESE expanded its statistical production in collaboration with the São Paulo State Statistical Department (SEADE, Portuguese acronym). The economic crisis at the beginning

[3] Interview with Salvador Romano Losacco in 04/11/1987 made by Miguel Wadi Chaia cited in (Augusto Junior, 2010, p.51)
[4] Roberto Simonsen, that once discussed development strategies with Eugenio Gudin, was one of the founders of the ELSP.
[5] For more details, Augusto Junior (2010) maps the connections of DIEESE's epistemic community

of the 1980s created a clear situation in which the official unemployment rate did not match the demand for jobs in São Paulo's region and both the unions and the state needed additional information in order to formulate policies. The result was the Employment and Unemployment Survey (PED, Portuguese acronym). With the PED, the DIEESE could show that, given the labor market informality in Brazil, the official unemployment statistics that followed the ILO manual were not adequate to measure the Brazilian unemployment situation (Montagner and Haga 2003). This opened a new flank in the union's fight. Furthermore, over time, the department expanded to other regions of the country, frequently in collaboration with other organizations including national and local bureaucracies.

Interestingly, the DIEESE's experience shows how different social groups could further their interests by incorporating a statistical or "scientific" argument into their claims. Yet, the role of an epistemic community with a completely new perspective of how to use economic indicators made economic statistics even more politicized. For fruitful discussions, it was necessary to make statistics more technical and refined and less reliant on the specific demands of one group or another.

The creation of an economic statistical bureaucracy

Back to the 1960s: The importance of economic statistics, with multiple competing ideas concerning statistical formulation and prioritization, was already clear. The FGV and the DIEESE were only two of several institutions that competed with the IBGE in the sense of producing alternative statistics, but they also collaborated for the common good by widening and deepening the statistical debate and disseminating this information. Yet, the intensification of the use of economic statistics by other societal groups generated demands that "IBGEanos"[6] were not able to meet due to its neglect of comprehensive economic data. Bombarded by criticism, the required changes would go far beyond merely producing a new set of statistics following predetermined procedures. It was necessary to completely overhaul the mindset of those who worked in the IBGE.

At the end of the 1960s, a transition commenced through which the IBGE would assume a more active role in the production of Brazilian economic indicators and the hegemony of the FGV in this area would begin to dwindle (Chacel 1995). The reform of the statistical system in the 1960s established that the IBGE should assume responsibility for the production of the official national accounts. But, FGV had strong ties with powerful ministers and, to some extent, depended financially on the revenues indirectly earned from

[6]Expression used to describe those who work to IBGE and share the "IBGE's spirit".

the production of the national accounts and other economic indicators to remain solvent, thus, in a conciliatory move, this responsibility remained with the FGV up until the 1980s (Ibid). Despite this, there was disappointment among FGV technicians over the lack of primary data, produced by the IBGE, that would have allowed for more detailed and precise estimates of the national income (Simonsen, 1991).

At this time, Isaac Kerstenetzky, a leading researcher on national accounts at the FGV, was invited to become president of the IBGE (Simonsen, 1991). Coming from the FGV and having been trained under Jan Tinbergen, Kerstenetzky had a different perspective on the use of statistics. Kerstenetzky wanted the IBGE to shift their attention from analytical work to the production of high quality, detailed, and pure statistics that could offer alternative insights for society. He pushed forward with the expansion of the production of economic statistics by the IBGE. For most of the 1970s, the IBGE produced Brazilian input-output matrices, allowing for an alternative estimation of the national income. However, the existence of two national income estimates – the one from the FGV and the one from the IBGE - led to some disparities since they had dissimilar methodological approaches and access to different sources (Nunes 1998).

This situation endured until 1986 when the IBGE incorporated FGV's technicians responsible for producing the official national accounts. Maria Alice Gusmão, coordinator of the National Accounts team at the FGV at that time, describes this merger as extremely friendly. She recognizes that the FGV's methodology and training were becoming obsolete, due to lack of resources, and the IBGE at that time had a more dynamic and interesting situation (Skype Interview with Maria Alice Gusmão on 20/09/2018). At the same time, an important partnership with the Institut National de la Statistique et des Études Économiques (INSEE) was intensified (Senra 2009b). With this partnership, the new IBGE group was trained and prepared to implement the SNA 1993 even before the manual was ready.

Kerstenetzky's work was continued by following IBGE presidents and the institute progressively became responsible for producing most Brazilian official economic statistics. For instance, beyond the System of National Accounts, in 1979, in order to meet a governmental demand for an official inflation index to be used as the reference for wage adjustments, the IBGE released a new price index (Bacha 2006). It is important to note that after the second oil crisis in 1979 a strong inflationary process took place in Brazil. This inflationary problem was at the center of Brazilian economic and social debates until 1994. Bacha (2006), who was president of the IBGE in the 1980s, recognizes that releasing price indices during tumultuous periods brought undesired visibility and pressure to IBGE's work.

Nevertheless, it was part of a grand strategy, that is still in vogue today, of empowering society with and through statistics[7].

In sum, at the beginning of the 20th century, when Teixeira de Freitas saw the key role of relevant statistics for Brazilian development, statistics were predominantly a State tool used to assist in the settlement and development of national territory and the management of social affairs. Almost half a century later, Kerstenetzky started an important process in which the production of statistics, with special attention given to economic statistics, was slowly being redirected to answer every day economic interests of society. As attention to the production of economic statistics increased, the institute also became more transparent, shifting its focus from consuming statistics to producing statistics that reflect society's needs. With that, the IBGE community no longer sought to design development policies shaped by shared causal and normative values but became objective professionals focused solely on the quality of statistics and active participants in international discussions about how to improve statistics around the world (Interview with high ranking professionals at the IBGE, Rio de Janeiro, on 15/02/2018).

Conclusions

This paper explored the creation of Brazilian statistics through 3 different epistemic communities. First, a group that believed statistics would improve the self-discovery of the country and therefore the formulation of better policies. Second, a group actively involved in new international approaches toward (economic) statistics. Finally, a group of social scientists that saw a great opportunity to join forces with unionists. The interaction among these groups led to a professionalization of the production of statistics in the country, and the consolidation of a broader interest in statistics. As professionalization occurred, the strength of each of these groups, as producers of statistics, was reduced.

Nowadays there are far fewer cleavages in Brazilian society regarding statistics in general. There is an overall perception that the official institution (IBGE) produces good quality statistics. The IBGE, in its turn, became more distant from the political scene which can be confirmed through two observations. First, since Kerstenesky and despite still being politically nominated, IBGE presidents have ample technical profiles, with long experience and strong academic backgrounds. Also, inside the IBGE, the technicians are public servants

[7] This can be inferred from the IBGE institutional mission: "To portray Brazil by providing the information required to the understanding of its reality and the exercise of citizenship" (IBGE 2017), but also from other passages of IBGE's strategic plan: "By revealing the conditions of their economies and their populations, the statistical information describes in an objective way the country, promoting a more democratic relationship between governors and governed" (IBGE 2002, 7) (my translation).

selected in public tenders that cannot be easily dismissed from the institute. Second, in dealing with the external public the IBGE has strict communication policies. They have yearly statistics release calendars that take into consideration political events ex-ante to avoid politicizing statistics (Interview with IBGE technician at the IBGE, Rio de Janeiro, on 23/02/2018). The reports seek to avoid the interpretation of numbers. In the words of an interviewee responsible for them: "they need to be transparent and descriptive" (ibid). This indicates the full incorporation of characteristics of the epistemic community.

The origin of Brazilian economic indicators, therefore, diverged from the mapped experience of other countries. In the literature, we find that the motivations for measuring National Income in the US and the UK were, respectively, to understand the vast 1929 crisis, and subsequently to pay for the war, for some other European countries, the motivation was to track the development achieved in the Marshall plan. For post-communist countries, it was about integrating into the capitalist system. While, in a substantial number of developing countries, it was about following the lead of international organizations. Conversely, in Brazil as this paper argues, it was about the motivation of a small band of people, that were well connected to governmental activities, believed statistics were critical to help design better strategies for Brazilian development, and most importantly had access to the knowledge which was under development outside the country.

This intricate development of Brazilian statistics provides the country with two valuable characteristics. First, statistics assumed greater centrality in political discussions compared to those of other developing countries. Second, official statistics often have competitor indicators produced by non-official (frequently private) means, which makes it more difficult for a central authority to exercise the power through fiddle figures. These, however, are my hunches which deserve, I believe, further research in the future.

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