

# ***Economists, scientific communities, and pandemics: an exploratory study of Brazil (1918-2020)***

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**Abstract.** The paper investigates historical aspects of the formation of the scientific community of economists in Brazil, taking the current research effort about the economics of Covid-19 as a starting-point of the narrative. The transnational character of science in general and economics in particular is highlighted. The historical trajectory of economics in Brazil is compared to other sciences', with attention to patronage and immigration. Economic debates surrounding the Spanish Flu outbreak in Brazil in 1918 are examined as an example of the working of the pre-scientific economic community in the country. Finally, some conclusions are drawn concerning the history of modern economic science in Brazil, with emphasis on the role of a couple of remarkably influential economists.

**Key words.** Economists, scientific communities, pandemics, Brazil, immigration

**JEL classification.** B20, B41, I10

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## 1. Economics as transnational science

### 1.1

The 2020 coronavirus outbreak has effected a significant change and adjustment in the research agenda of economists worldwide, as they soon responded to the urgent economic problems prompted by the global pandemic. The largely spontaneous engagement of economists in academic and public discussions on how to tackle the coronavirus unprecedented crisis – led mainly by research institutions based in the United States and the United Kingdom – has been occasionally compared to the economists' role in the 1940s War effort in the US and the UK, recruited by governments during the Second World War (see Coyle 2020). As they switched to the impelling economic side of the War effort, economists diversified their research agenda and engaged in collaboration with other disciplines (e.g. engineering and psychology). This led to the development of new fields such as operations research, and the advancement of modern national accounting. Paul Samuelson (1944: 298), a leading economist involved in the War effort, went as far as describing the Second World War as the “economists’ war” (see Guglielmo 2008).

It is probably an overstatement to call the 2020 Covid-19 predicament the “economists’ pandemic,” but it is accurate that never before have economists got professionally involved so extensively in a global major health crisis. The pandemic-related research, and its output in terms of papers, articles and webinars, may be divided into three main sets of contributions (see Bigio, Zhang and Zilberman 2020: 4-5; Coyle 2020: 244).

The overriding one has investigated the interaction between disease, contagion and macroeconomic activity through the use of epidemiological models (e.g. Eichenbaum, Rebelo and Trabandt 2020). A second area of research has deployed relatively familiar macroeconomic models to study the effects of the Covid-19 shock on aggregate supply and demand, and by that assess macroeconomic policy alternatives to deal with it (e.g. Woodford 2020). Finally, the economic consequences of previous pandemics, especially the 1918-20 so-called Spanish Influenza outbreak, with comparisons drawn to the economics of Covid-19, have also attracted attention (e.g. Beach, Clay and Saavedra 2021).

The output from those and other lines of research has been overwhelming. Between March and November 2020, the American NBER (National Bureau of Economic Research) alone released around 300 pandemic-related technical papers. In March 2020, the Centre for Economic Policy Research (CEPR), an European research center based in London, launched *Covid Economics, Vetted and Real-Time Papers*, formed by online issues of collected discussion papers made available weekly on average, according to a fast-track system. The CEPR also produced a book on the subject, aimed at a broader audience (Baldwin and di Mauro 2020). Special issues and symposia came out throughout 2020 (e.g. *Oxford Review of Economic Policy*, vol. 36, number S1; *Journal of Economic Perspectives*, Fall 2020, articles by Murray 2020 and Avery et al 2020). Surveys of the literature on the economics of Covid-19 also became available (e.g. Brodeur et al 2020). It soon became clear that the exceptional circumstances of the coronavirus crisis brought about as well a shift in the approaches to macroeconomic policy, particularly in connection with public debt as an instrument to achieve full employment (see *The Economist*, 2020).

As put by Susskind and Vines (2020: S2) in March, “only 6 months ago few economists knew anything about SIR models. Now we all know that the central framework for studying the spread of any infectious disease is the SIR model.” The SIR seminal epidemic model – which divides the population into three categories: S = susceptible (at risk of getting infected); I = infected (and contagious); R = recovered/resistant (previously infected) – was originally put forward by Kermack and McEndrick (1927), in the wake of the Spanish Influenza pandemic.

It was only long after Kermack and McEndrick (1927) that economists started to deploy the SIR and other epidemiological models to study contagion effects, sometimes together with optimal control techniques.<sup>1</sup> The entry on “Economic epidemiology” in the second edition of the *New Palgrave* did not refer to the SIR framework (Philipson 2008), even though that classical epidemic model could be found in studies of contagion effects in financial markets (Shiller and Pound 1986). Shiller 2017 has continued to use it in the investigation of the epidemiology of narratives in economic fluctuations and, more recently, in direct connection with Covid-19 (Shiller 2020).

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<sup>1</sup> See Klein et al (2007), which also examines the other side of the interaction, that is, the introduction of economic optimization into epidemiological framework; and Avery et al 2020.

As during the World War II experience, the cross-disciplinary character of economists' approaches to the coronavirus pandemic is clear enough. It should be distinguished from "economic imperialism", even in the context of health economics (see Lazear 2000). Such interdisciplinary moves predated the current pandemic, as illustrated by Goenka et al 2014. Moreover, the investigation of economic aspects and implications of Covid-19 may be seen as part of the "age of applied economics" that has transformed the discipline since the 1970s (Backhouse and Cherrier 2017). Whereas pure theory was the most prestigious activity for economists between mid 1940s and mid 1970s, applied economics – which is broader than just "empirical" – dominates top economic journals nowadays.

As Backhouse and Cherrier (2017) point out, that does not mean that empirical or applied work is disconnected from theory, but that theorizing and policy thinking have changed for economists, whether as "applied theorists" or empirical researchers who deal with policy issues. Instead of a single encompassing economic theory, there is a "range of theories." From a related perspective, Varian (1997) has argued that economics, if it claims to be science, is essentially a "policy science" that aims at improving peoples' wellbeing (see also Coats 1992). Hence, it is comparable to other "policy subjects" such as engineering or medicine. The role of economic theory, from that perspective, is to provide guidance for policy choices in the applied domain (cf. Schumpeter 1954: 1141 and 1145). Bibliometric studies since early 21<sup>st</sup> century have indicated that "applied economics" is the area in which Brazilian economists are more successful, especially at an international level (see e.g. Faria, Araujo and Shikida 2007).

Brazilian economists, like their foreign colleagues, have contributed to the worldwide pandemic-related research. The SIR model has been applied to the analysis of the effects of social distancing in Brazil (e.g. Morato, Bastos, Cajueiro and Normey-Rico 2020; Bastos and Cajueiro 2020; Borelli and Góes 2020). The sectorial and macroeconomic impacts of Covid-19 have been investigated using input-output techniques (e.g. Haddad, Perobelli, Araújo and Bugarin 2021; Haddad, Perobelli and Araújo 2020; Dweck et al 2020). Normative and health policy aspects have been addressed in a number of papers (e.g. Rache, Nunes, Rocha, Lago and Fraga 2020; Viegas et al 2020; Nunes, Rocha and Ulyseia 2020). Covid-19 forecast models have attracted attention (e.g. Medeiros, Street, Valladão, Vasconcelos and Zilberman 2020).

Both economists (e.g. Brotherhood, Cavalcanti, Da Mata and Santos 2020) and epidemiologists (e.g. Demenech, Dumith, Vieira, Neiva-Silva 2020) have dealt with the effects of income inequality and poverty on the pandemic diffusion in Brazil. The perverse effects of the Brazilian President's words and actions on pandemic risky behavior have been modeled and measured (e.g. Mariani, Gagete-Miranda and Retti 2020; Ajzenman, Cavalcanti and Da Mata 2020). Macroeconomic and social impacts of transfer and credit policies to fight the pandemic have been formalized and simulated (e.g. Bigio, Zhang and Zilberman 2020; Freire, Domingues, Magalhães, Simonato and Miyajima 2020; Komatsu and Menezes Filho 2020). Moreover, in times of social distancing, webinars have been extensively deployed, by economists and scientists in general, at universities and research institutions worldwide – including Brazil of course – to discuss pandemic-related issues.

Brazilian economists' efforts should be seen in the context of the overall response by the country's scientific community to the challenges posed by the coronavirus pandemic – despite budget constraints faced by that community when compared to much larger funds allocated to pandemic-related research in leading countries (Arbix 2020; De Negri and Koeller 2020). Such research endeavor may be understood as the most recent instance of the transnationalization of science, which has accelerated in the 21<sup>st</sup> century and turned science into a global enterprise. Some aspects of that process are the increasing role of both international linkages and scientists' global geographical mobility, accompanied by changes in traditional concepts such as scientific peripheries and “Brain Drain”, replaced by hierarchical networks and “Brain Circulation” (see The Royal Society 2011; Van Noorden 2012; for the Brazilian scientific “diaspora” see Carneiro et al 2020). This comes across in the sample provided above of Brazilian Covid-19 economic research, which includes economists who are based in other countries such as the US and the UK, as well as international research teams.

## 1.2

Historians and sociologists of science have recently become attracted to transnational perspectives, as witnessed by the September 2012 special issue of the *British Journal for the History of Science* and by Fourcade's (2006) study of the economics profession. As pointed out by Turchetti, Herran and Boudia (2012: 321-22) in their introduction to that issue, the current stress on "transnational" science as a cross-border activity should be distinguished from its traditional meaning as epistemic universalism in the sense of a truth-finding activity that is not affected by national, class or ethnic differences. The latter approach was challenged by the development of science studies in the 1970s and 1980s, which emphasized the social history of science as contingent on social, economic and political features. That was accompanied by thick-descriptions, micro-histories of laboratories and research institutions, and investigation of the history of science in local contexts.<sup>2</sup>

Science studies attempts to produce a sociologically framed history of science led to detailed narratives of its current and past paths, while its international dimension was only surmised. The analysis of transnational scientific networks has extended the science studies notion of the production of knowledge as a complex process – in which different actors negotiate the meaning and acceptance of new theories – to the discussion of "how locally produced knowledge becomes globally accepted." The establishment of such networks "confers the authority needed to strengthen locally sourced scientific ideas and propel them beyond borders – by means either of patronage, or wider circulation, or adherence to international standards" (Turchetti, Herran and Boudia 2012: 331).

Polycentric and hierarchical alternative networks, competing for power and knowledge, form the transnational system of science, featuring connections between individuals and groups rather than nations. By focusing on flows and circulation of peoples and artifacts, on "what is emerging, what is new in the interstices of encounter ... on the fringes and 'peripheral' spaces", transnational science studies make it possible to contest the "unidirectional vision of the manufacture of the worlds" involved in the notion of colonial or peripheral science (Pestre 2012: 428-29). Gone is the center-periphery dichotomy in science, which cannot account for the

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<sup>2</sup> See Weintraub 2020 for an account of how that has influenced the historiography of economics.

emergence of “pockets of central science” on the periphery (see Medina and Carey 2020; and Rodriguez 2013 for a transnational approach to the history of Latin American social sciences).

It was only between the mid 1960s and early 1970s that Brazilian economists started to form a scientific community that would become part of the transnational economic community. There was no proper scientific economic community in Brazil until the 1950s, although, of course, economic issues – particularly those related to economic policy-making in the monetary field – had attracted close attention since the 19<sup>th</sup> century. This is in marked contrast with the history of most of the Brazilian scientific community, both in the natural and social sciences fields, which established itself in the 1930s, if not earlier (Schwartzman 1978, 1979, 1991; Ekerman 1989; Azevedo 1955a, b; Haddad 1981).

Some characteristics of the peculiarities of the history of the Brazilian economic community and its relatively slow coming to age process are discussed in the next section. That is followed by a brief investigation of Brazilian economic “pre-scientific” debates provoked by the Spanish Influenza pandemic that hit strongly the country (and the rest of the world) in the last quarter of 1918, by way of comparison with modern economists’ approach to the current Covid-19 outbreak. The final section draws some conclusions regarding the writing of the history of modern Brazilian economic thought, with especial attention to two outstanding Brazilian economists – Celso Furtado (b. 1920, d. 2004) and Mario Henrique Simonsen (b. 1935, d. 1997), born a 100 and 85 years ago, respectively. C. Furtado and M.H. Simonsen are the only Brazilian economists featured in the *New Palgrave Dictionary of Economics* (see Boianovsky 2008a, b).

## **2. Patronage, immigration and economic research**

### **2.1**

The call for a transnational approach to the history of science has entailed a new emphasis on historical studies of the role of agencies and organizations in shaping the international flows of scientists and ideas, including large-scale scientific migrations such as forced exile in the 1930s and early 1940s. Transnational forms of patronage

(especially the Carnegie, Rockefeller and Ford Foundations) have been instrumental in the reconfiguration or creation of scientific institutions, and in settling local research into international networks (see Turchetti, Herran and Boudia 2012: 327). According to sociologist and historian of science Simon Schwartzman (1978; 1979; 1991), it was only in the 1930s that Brazil acquired the sort of university (Universidade de São Paulo, founded in 1934) able to provide sustained modern teaching and research. Science as an organized activity hardly existed in Brazil before that.

The Instituto Soroterapico Federal de Manguinhos (later the Oswaldo Cruz Institute of Experimental Medicine), founded by Oswaldo Cruz in Rio in 1900 for the practical purpose of fighting epidemic diseases that often afflicted Brazil, was a partial exception to the dearth of scientific research before the 1930s (Stepan 1976). By combining basic and applied science, that research Institute soon achieved an international reputation in the new field of bacteriology, thanks also to its links with the French Institut Louis Pasteur, where Cruz was trained. The success of sanitary arrangements implemented by Oswaldo Cruz in Rio in early 20<sup>th</sup> century, together with Carlos Chagas' discovery of American sleeping sickness (*Trypanosomiasis americana*) and its causative agent in 1908, established the prestige of scientific activity in Brazilian society. The foundation of the Sociedade Brasileira de Ciência in 1916 – later Academia Brasileira de Ciências (Brazilian Academy of Sciences) – was a reflection of that. However, by the late 1920s the Institute began to decline, especially at the international level. The making of a self-sustaining long-term scientific tradition in Brazil would start in the 1930s only (Schwartzman 1978; Ben-David 1977).

The core of the new University of São Paulo was its Faculty of Philosophy, Sciences and Letters (FFCL), which gathered together biology, chemistry, physics, mathematics, sociology, philosophy and anthropology, among other disciplines. Well-known scientists recruited mostly from Germany, Italy and France formed the FFCL staff after the mid 1930s. Gleb Wataghin, who came to USP in 1934, for instance, was responsible for the introduction of modern physics research in Brazil (see Salmeron 2001). Most of the hired German natural scientists were political refugees with Jewish backgrounds (Schwartzman 1979: 209).

Recruited professors of social sciences (in its broad sense, including geography and history) came in general from France (e.g. Claude Lévi-Strauss, Roger

Bastide, Fernand Braudel, Jacques Lambert, Pierre Monbeig), following a cooperation agreement between the Brazilian and French governments. Apart from São Paulo, the French “missions universitaires” included as well positions at other Brazilian universities in Rio and Porto Alegre (see Lefèvre 1993). The discipline and diploma of economics did not formally exist yet; a one-year course in political economy was offered at FFCL to social sciences students at the time. Hence, as part of the “missions”, some French economists came to lecture in São Paulo and other Brazilian cities (e.g. François Perroux, Pierre Frommont, René Courtin, Maurice Byé, Paul Hugon). Except for Hugon, who arrived in 1938 and stayed for life (until 1973), the other economists came for brief periods in the 1930s and early 1940s.

Whereas most Brazilian scientific work – in both natural and social sciences – during the two or three next decades may be traced to the 1930s FFCL and its foreign professors, economics retained its largely pre-scientific status, still far removed from international economic research, until the 1960s. Probably the best known among French economists who participated in the “missions”, Perroux spent most of his 1936-37 Brazilian stay writing and lecturing on the then fashionable topic of corporatism, with little impact on local academic research (Love 1996: 111). Hugon, in contrast, taught for a long time a course on the history of economic thought – based on his book on the subject (Hugon 1946; 1947) – at FFCL and later at USP economics department.

Former Brazilian finance minister Delfim Netto (1996: 91) has often mentioned the strong impression made on him by Hugon’s institutional-historical view during his student days at USP in the late 1940s and early 1950s. Nevertheless, Hugon did not influence Delfim’s research agenda (as illustrated by his 1959 graduate econometric thesis on the coffee economy in Brazil) or economic policy-making activities. According to Delfim Netto (2020), Hugon remained faithful to the old non-mathematical French economic tradition in which he was formed in the 1930s. Hence, Hugon did not actively participate in the process of internationalization and modernization that would dominate Brazilian economics after the 1950s (see also Alcouffe and Boianovsky 2021).

Another, quite distinct, French connection was represented by a small group of Brazilian economists and statisticians who admired and kept close contacts with the well-known mathematical economist and statistician François Divisia from mid 1930s, when he briefly visited and delivered a couple of lectures in Brazil. They may

be regarded as precursors of the research in mathematical economics and econometrics in Brazil in the 1930s and 1940s, with papers published in *Revista de Economia e Estatística* and other outlets.<sup>3</sup> By 1964, some of those Brazilian economists, joined by a few others, put together a Festschrift for Divisia (who would die that year), published in Paris under the title *Quelques Aspects Fondamentaux de l'Économie Moderne*. Such collection of papers in mathematical economics – which was well received in France (see Guitton 1966) – reaffirmed attempts to establish international links in the field, with only limited influence at the time on the rest of the Brazilian economic community though.

## 2.2

By the 1940s, leadership in intellectual activities, from science to the arts, moved from Europe to the United States. Centers of research and graduate training, including economics, had moved across the Atlantic due to intellectual migration in the interwar period, when continental Europe suffered from deep economic and political problems. Together with the increase of research funding, the immigration of talented European researchers played a decisive role in accounting for American prominence in economics ever since (Craver and Leijonhufvud 1987). As Leijonhufvud (2002) has pointed out, it is not enough to have access to scientists' written works – ideas do not migrate as well without the people associated to them. He quoted from M. Polanyi's (1958: 53) remarks that whereas the articulated contents of science were taught all over the world, the geographical spread of the “*unspecifiable art of scientific research*” only took place through the migration of scientists – or, later, through graduate studies abroad. Learning such knowledge is a “*personal act of acquisition*” which cannot be described as a pure public good (Leijonhufvud 2002: 166-167).

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<sup>3</sup> Hugon (1955: 344-346) listed works by Otacílio Novais da Silva, Djacir Meneses, L. Paula Nogueira, Jorge Kafuri and Jorge Kingston. The politician/economist Alde Sampaio should also be mentioned as part of the Divisia connection. Kingston would work alongside Alexandre Kafka in the first years of IBRE at the Getúlio Vargas Foundation in the 1950s (see section 2.2 below). Partly due to the Divisia connection, the 1955 meetings of the Institut International de Statistique were held in Brazil (Petropolis), attended by well-known statisticians and mathematical economists (e.g. C. Gini, P.C. Mahalanobis, R.G.D. Allen and F. Divisia himself; see Darmois 1955).

According to Hagemann and Krohn's (1999) compilation of émigré economists who left German, Austria and occupied nations after 1933 (when the Nazis took power in Germany), 296 individuals emigrated, including 221 first-generation émigrés (with economics training) and 75 children of émigrés (who became economists in their new countries). Of the 221 first-generation émigrés, 131 settled in the US, 35 in the UK, 8 in Israel, 7 in Latin America (1 in Brazil) and a small number in other countries. The Rockefeller Foundation was instrumental in providing financial assistance for settling émigrés in the US, including temporarily paying for their university salaries (Scherer 2000).

The only recorded German-speaking economist who emigrated to Brazil in that period was the Austrian-born Richard Lewinsohn (b. 1894; d. 1968), who came as a political refugee in 1940 via France (Hagemann and Krohn 1999: xxxiv). Apart from Lewinsohn, two other economists left Europe for Brazil at the time for related reasons of anti-Semitism: the Italian Giorgio Mortara (1939) and the Czech Alexandre Kafka (1940), third-cousin to the famous writer Franz Kafka. They all contributed significantly to foster incipient economic (and, in Mortara's case, especially demographic) research in Brazil. As for children of émigrés, the only name on our list is the Austrian-born Paul Singer, who immigrated in 1940 when he was an 8-year old. Singer (b. 1932; d. 2018) studied economics at USP in the 1950s and demography at Princeton in the 1960s. He would publish a number of well-regarded books and articles about the Brazilian economy and population – especially in the 1960s and 1970s – and contribute to the foundation of the interdisciplinary think tank CEBRAP (Brazilian Center for Analysis and Planning) in the late 1960s, funded by the Ford Foundation.<sup>4</sup>

Lewinsohn, Mortara and Kafka's move to Brazil was part of the complex issue of Jewish immigration during the Getúlio Vargas administration (1930-1945).

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<sup>4</sup> The names on our list are restricted to émigrés (or their children) who came to Brazil between 1933 and World War II. A larger list, covering a longer time frame, should include as well Tamás Szmrecsányi (b. 1936; d. 2009) and Henrique (Heinrich) Rattner (b. 1923; d. 2011). T. Szmrecsányi, born in Hungary, emigrated to Brazil in 1950. Upon studying economics in Brazil and abroad, he specialized in economic history, history of science and technology, and history of economics (see Pelaez 2009). H. Rattner, born in Austria, moved to Brazil in 1951, after periods in Israel and Belgium. Trained in Brazil and abroad as a sociologist and economist, he became a pioneer in the fields of sustainable development and urban planning (see Traeger 1999).

Although the Vargas regime raised several restrictions against immigration en masse, by the late 1930s, partly because of American pressure, the flow of Jewish immigrants increased, particularly of intellectuals and scientists (Lesser 1995). However, even some who had spent time in Brazil before had their visa applications refused, such as anthropologist C. Lévi-Strauss in 1941. R. Lewinsohn came to Brazil invited by Anísio Teixeira and Afrânio Peixoto – Rio de Janeiro’s Secretary of Education and rector of the newly created (1935) Distrito Federal University, respectively – hired together with other Jewish refugees. He would return to Europe in 1952.

Apart from economics, Lewinsohn had established a reputation in Europe as financial journalist and doctor of medicine, with books published in those fields (see Kulla 1999). By 1944 he became involved with the organization of the new Getúlio Vargas Foundation, a think tank that would play a key role in the process of professionalization of economics in Brazil. Three years later, Lewinsohn created and edited the journal *Conjuntura Econômica*, dedicated to the publication of economic data and information, mostly elaborated by Lewinsohn himself. It represented a breakthrough in the provision of economic indicators in Brazil, in the tradition of the 1920s German and Austrian business cycle institutes.<sup>5</sup> Lewinsohn’s book about trusts and cartels, written during his Brazilian period and published in Spanish in 1948 and French in 1950, attracted attention in Brazil (see Furtado 1949) and abroad.

Giorgio Mortara (b. 1885; d. 1967) – a prominent Italian economist, statistician and demographer, editor of the prestigious *Giornale degli Economisti e Annali di Economia* from 1910 to 1938, when he was forced to leave fascist Italy after the introduction of strict anti-Semitic rules – was hired in 1939 by J.C. Macedo Soares, president of IBGE (Brazilian Institute for Geography and Statistics), created the year before. Mortara was appointed coordinator of the 1940 Brazilian census, the first since 1920. He would stay in Brazil until the end of his life, except for a 4-year period back in Italy (1956-1960). Mortara’s theoretical and statistical contributions to demography and to economic statistics in Brazil and worldwide were overwhelming, with a long list of publications in Portuguese, Italian and other languages. He started the IBGE’s Laboratory of Statistics and is regarded as the founder of Brazilian modern demographic analysis, with extensive influence on the formation of

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<sup>5</sup> C. Furtado, who worked in close contact with Lewinsohn at the Vargas Foundation in the late 1940s, provided a vivid account of the Viennese’s pioneer role in Brazilian economics (see Furtado 1985: 47-48; and Lewinsohn 1967).

researchers and their international recognition (Berquó and Bercovich 1985; Lenti 1967: 214-215).

Whereas Lewinsohn and Mortara were well-established researchers who emigrated to Brazil under invitation from important institutions, A. Kafka (b. 1917; d. 2007) was a young economist with no professional experience when he left Oxford for Brazil in 1940, after Czechoslovakia was invaded. Before graduating in economics at Oxford University (where he was a student of John Hicks, Roy Harrod and Thomas Balogh, among others), Kafka spent a year in Geneva attending lectures by L. von Mises, F. Machlup and W. Röpke at the Institut Universitaires de Hautes Etudes Internationales (see Esslinger 1999; Kafka 2019).

Soon after his arrival in Brazil, Kafka was invited to teach economics at the Escola Livre de Sociologia e Política (Free School of Sociology and Politics) in São Paulo, founded in 1933 under the leadership of the Brazilian industrialist and supporter of development planning Roberto Simonsen (no relation to M.H. Simonsen). Although primarily an institution of social sciences – formed under the influence of American sociology and with American professors, unlike FFCL – the Free School offered as well lectures on economic subjects. A few years later, Simonsen asked Kafka to set up the Economics Department of the Federation of Industries of the State of São Paulo (FIESP). As part of his activities at FIESP, Kafka provided technical advice to Simonsen in the latter's well-known debate with Eugenio Gudin in the mid-1940s about economic development and planning.

Ironically enough, in 1951 Gudin hired Kafka to direct the research activities of the newly founded Instituto Brasileiro de Economia (Brazilian Institute of Economics, IBRE) at the Vargas Foundation in Rio, the first of its kind. Kafka's immediate task was to coordinate the elaboration of data sets of prices, production and national accounting, which were still lacking in Brazil. He combined that with lectures at the Universidade do Brasil, where the first Brazilian Faculty of Economics was officially established in 1946 (around the same time, another faculty was founded at USP; see Loureiro 2009: 106-10). After the period at IBRE, Kafka spent most of his life in the United States, as Brazilian Executive Director at the International Monetary Fund, a position he held for 32 years, together with an appointment as professor of economics at the University of Virginia (1959-61 and 1963-75). Kafka's research output in applied economics is visible in his articles published in Brazilian

and American (e.g. *Quarterly Journal of Economics*, *Journal of Political Economy* and *American Economic Review*) journals.

Well-connected internationally, Gudin invited, between the late 1940s and early 1960s, several prominent European and American economists (e.g. Gottfried Haberler, Jacob Viner, Ragnar Nurkse, Hans Singer, Kenneth Boulding, Lionel Robbins, Nicholas Kaldor, Douglass North) to lecture and interact with staff and students. They usually stayed in Brazil for a few weeks, which gave them an opportunity to travel around and give advice on research done by local economists. Part of the expenses was covered by the United States Department of State. The lectures, often on economic development topics, were published in Portuguese in *Revista Brasileira de Economia*, a journal created at the Vargas Foundation in 1947. International publishers often made them available in English soon afterwards in book form, sometimes with significant international impact, as in the case of Viner and Nurkse.

In 1957, some of those visiting economists took part in a Festschrift for Gudin (with chapters in English, French and Portuguese), which included as well contributions by other international and Brazilian authors, such as W. Leontief and C. Furtado. Boulding (1958: 462), in his review of the Gudin Festschrift, referred to that group as “those fortunate souls who have had the privilege of visiting Brazil to lecture or for some other good purpose.” Around that time, Gudin hosted at the Vargas Foundation the first ever international conference on economic development, put together by the International Economic Association in 1957. Published a few years after (Ellis and Wallich 1961), it gathered Brazilian and foreign development economists.

### 2.3

It was only after the 1950s that a scientific economic community started to take shape in Brazil. As pointed out by Raul Ekerman (1989: 118; 126-129), a participant in that process, the emergence of scientific economic discourse in Brazil was determined by the formation of a group of “economic scientists” inserted into the broad international community. The intensification of formal and informal networks between Brazilian and foreign economists in mid 1960s and early 1970s set the standards of economic

research in the country and by that forged the beginning of an economic scientific community. This process took place about three decades after the formation of scientific communities in natural, mathematical and social sciences alike. Unlike other fields, scientific immigration was quite reduced in economics. The few economists who moved to Brazil during the great interwar scientific migration flow did have an impact – however, with the exception of Mortara’s key-role in the field of economic demography, that was not enough to warrant the formation of a national economic scientific community with strong ties with Europe and the United States.

As mentioned above, the funding of academic research by international institutions (called patronage) has been a major instrument in the transnationalization of science. That was the case in Brazil in the 1960s, when USAID and especially the Ford Foundation begun to fund the first graduate economics programs in the country, which eventually led to the creation of Anpec (Associação Nacional dos Centros de Pós-Graduação em Economia, the National Association of Graduate Centers in Economics) in 1973. As part of its broad program for social sciences in Brazil (with emphasis on economics) at the time, the Ford Foundation and USAID also became involved in encouraging and supporting American professors and researchers for medium-term visits to Brazilian economic departments, as well as providing fellowships for Brazilian economic students willing to pursue PhD programs in the US (see Haddad 1981; Ekerman 1989; Versiani 1997; Fernandez and Suprinyak 2018).

That process reflected as well the ‘Brazilianists’ phenomenon: a wave of mostly American scholars from several fields (history, social sciences, literature, economics etc.) working on aspects of the Brazilian society, culture, politics and economy. Werner Baer – coordinator of the economic section of Ford Foundation and a key player throughout the whole process of institutionalization of Brazilian academic economics in the 1960s and 1970s – was one of them. It would be a simplification, however, to assert that Ford, USAID or other patrons *created* the Brazilian scientific economic community. Rather, such funding institutions operated in a space developed from the 1930s to the 1950s, when incipient economic research carried out by Brazilian economists at universities, think tanks and government agencies established a demand for steady international ties with some of the main centers of production of economic knowledge.

Furthermore, economics and social sciences did not immediately benefit from the creation of the Conselho Nacional de Pesquisa (CNPq, National Research Council) in 1951, established, under the influence of the Brazilian Academy of Sciences, a year after the creation of the American National Science Foundation (NSF). Like the NSF, CNPq was originally organized around the natural and hard sciences, with no room for economics in its research budget. However, whether the SNF eventually included economics in 1956 (after some controversy; see Goodwin 1998: 65), it was only in the mid 1970s that economics scientific status was fully acknowledged by CNPq (see Forjaz 1989). Hence, C.P. Snow's (1959) well-known description of the cultural division between the worlds of the humanities and science, captured by his phrase *Two Cultures*, applied to a significant extent to the Brazilian scientific establishment in the post-War II period.

Ford Foundation's funding of Brazilian economics was part of its new overall strategy (adopted at the time by the Rockefeller Foundation as well) to fund large programs involving teams of economists instead of individuals. Around that period, Thomas Kuhn's (1962) *The Structure of Scientific Revolutions* argued that the scientific *community* was central to scientific activity and its history. That was not just a coincidence (see Weintraub 2007: 271). The new notion of science as a collective enterprise – whose quality standards, research agenda and criteria for resources allocation for science are decided by the scientific community itself – was one the features of Kuhn's concept of “normal science.” In the words of Michael Polanyi's (1962) concomitant article, the scientific community worked (or rather should work) as a “Republic of Science”, with its own rules for the production of knowledge.

Whether the Brazilian scientific community of economists – or other scientific communities in the country, for that matter – could be described as a “Republic of Science” is debatable. In any event, by the early 1970s an intense controversy over the reasons for the observed increase in income inequality took place in Brazil, which played a decisive role in establishing the new economic community and its international links. Papers about the topic dominated the scene at the first Anpec meetings, held in 1973. The income distribution controversy engaged Brazilian policy-makers, foreign economists (from the US and the UK), international institutions (especially the World Bank) as well as young researchers who were part of the first big wave of Brazilian economists who obtained their PhDs abroad (or did graduate studies in Brazil).

That was the most important economic debate during the period of military rule (1964-1985) in Brazil. It is apparently paradoxical that a relatively open economic debate that challenged economic policy, amidst a period of political repression, could take place. But that is solved if the international character of the discussion is taken into account, as well as government policy-makers' belief that they had the best side of the argument in the attempted econometric demonstration that increasing inequality resulted from the market effects of economic growth under conditions of skilled labor scarcity (see Andrada and Boianovsky 2020; Ekerman 1989). That heavily contested econometric debate attracted worldwide attention and contributed decisively to turn economic inequality into a main theme in development economics.

### **3. Contemporary economic discussions about the Spanish Flu pandemic in Brazil**

#### **3.1**

Before the development of an economic scientific community in the 1960s-70s, the production of economic ideas in Brazil is better interpreted in terms of what Schumpeter (1954: 38-39) called “systems of political economy” and “economic thought”, as distinct from “economic analysis” proper. Whereas the notion of “scientific progress” applies to the history of the latter, it was not, according to Schumpeter, a feature of the histories of systems of political economy – defined as a “set of economic policies”, based on certain “unifying (normative) principles such as the principle of economic liberalism, of socialism and so on” – or of “economic thought” – understood as the sum of “all opinions and desires concerning economic subjects, especially concerning public policy bearing upon those subjects.” From that perspective, economic policy mattered to the history of economics only to the extent that it was built on analytical work (Schumpeter 1954: 1145).

Schumpeter's distinction has been applied to historical studies in Brazil, carried out under the assumption of almost complete absence of proper analytical or theoretical work in Brazilian economic thought up to the 1950s – which has led to an emphasis on the history of “systems of political economy” as better suited to the

Brazilian case (see e.g. Bielschowsky 1988). Although economic teaching in Brazil started as early as 1827 (as part of law and engineering schools, as in many other countries), usually featuring relatively update references to the international (European) economic literature, economic research did not become a practice until mid-20<sup>th</sup> century (Hugon 1955; Love 1996). Hence, when the Spanish Influenza (“Gripe Espanhola” in Portuguese) global pandemic hit Brazil between September and December 1918, its economic implications and dissemination process were discussed from the point of view of policy matters, not as object of theoretical or academic investigation as in the current Covid-19 crisis.

Contemporary European and American economists did not theoretically address the Spanish Flu either, partly because it overlapped with the last year of the First World War, which attracted most of the economists’ attention at the time (see Boianovsky and Erreygers 2021). The Covid-19 pandemic, sometimes described as a combination of medical and economic aspects of the Spanish Flu and the Great Depression respectively (see e.g. Susskind and Vines 2020: S1), has brought new attention to the economic and medical histories of the Spanish Flu pandemic, with comparisons drawn to the coronavirus crisis.

Medical data about the Influenza pandemic are not precise, but it is beyond doubt that it was one of the deadliest pandemics ever. It spread in three waves: in March 1918 the first wave begun in Midwestern US and spread to Europe, Australia, China and North Africa; the second and more deadly wave started in France in August and quickly diffused around the world, including Brazil and Latin America; the last wave was not as strong and hit some countries at the beginning of 1919. According to estimates by Patterson and Pyle (1991), the world death toll was in the range between 24.7 and 39.3 million people. India (between 12 and 20 million) and China (between 4 and 9.5 million) had the highest absolute numbers. About 180,000 died from the Flu pandemic in Brazil, with a mortality rate of 6.8 deaths per thousand; the numbers for the US were 550,000 and 5.2 respectively. The name Spanish Influenza came from the fact that Spanish newspapers – which, unlike countries involved in the War, were not censored – reported the pandemic widely. Numbers for Spain were 150,000 and 7.1.

Spanish Flu disease hit Brazil in mid-September, spread quickly during October and November, until it practically disappeared in December, with some outbreaks in 1919 (for general accounts, with focus on Rio, see Goulart 2005;

Spinney 2017, chapter 4). In Rio (then the national capital and largest Brazilian city), São Paulo and other main cities, around two thirds of the population were infected. However, deaths per thousand varied widely, from 16 in Rio, to 10 in São Paulo, 9.4 in Porto Alegre, 9.1 in Recife, 6.2 in Belo Horizonte, 3.3 in Florianópolis and 2.8 in Campinas (calculated from Alonso et al 2011, and Starling and Schwarcz 2020). Alonso et al ascribed the higher mortality in big Brazilian cities to the relative difficulty to mobilize medical assistance and nourishment to the population (through philanthropy or government intervention) of larger urban centers. In the state of São Paulo, the Flu caused one third of all deaths while it was prevalent (Patterson and Pyle: 16).

As other countries, the Spanish Flu killed in Brazil mainly men and women aged 15-44, resulting in a **W**-shaped mortality distribution, rather than the customary **U**-shape. Therefore, it represented a significant negative labor supply shock (see Velde 2020: 3-4). According to econometric exercises for a cross-section of countries performed by Barro, Ursúa and Weng (2020), each additional percentage point of Influenza mortality in 1918-20 brought about a 3% decline in real GDP per capita, which is quite a big impact. Measured negative effects of Flu pandemics on economic growth rates were temporary, but the effects on the level of income per capita were permanent.

Brazilian output declined 2% in 1918 on aggregate (see data in Haddad 1980), and around 5% in per capita terms (assuming a rate of population growth of nearly 3%). This is higher than the contraction implied by Barro, Ursúa and Weng's regressions, which is around 2.1% per capita for a Brazilian mortality rate of 6.8%. Industrial output in Brazil diminished by 1.10% in 1918, after steady expansion during the first three years of the War (1914-1917). Agriculture production came down 7.4%, mostly because of the great frost of June 1918 in the state of São Paulo, which affected coffee and other crops (Fritsch 1988: 52). The GDP of both government and commerce sectors stagnated in 1918, after some increase in previous years. Using district-level data for the state of São Paulo, a recent study by researchers from Brandeis University has found evidence of persistent negative effects of the Spanish Flu pandemic on infant mortality, human capital and agricultural productivity twenty plus years after the event (Guimbeau, Menon and Musacchio 2020). That is a rare example of economic history investigation of Spanish Flu in Brazil, a topic dominated by social and medical histories approaches.

### 3.2

As far as the contemporary Brazilian economic debates about the Spanish Flu are concerned, one should deploy a broad meaning of “community”, formed by different actors: policy-makers, trade unions, producers/employers, economic journalists, politicians, philanthropic associations and sanitarians.<sup>6</sup> “Economists” – those with some economic training, usually from law or engineering schools, and/or from their business practices – often played multiple roles as businessmen, policy-makers or politicians in those debates. Clearly, for Brazilian economists at the time, the Spanish Flu was eminently a practical matter in which they were involved as participant players, not an academic one.

The conflict between capital and labor, when the first general strikes hit São Paulo and Rio in 1917 and 1918, provided a background for contemporary economic discussions about the Spanish Flu in Brazil. The acceleration of the growth in the cost of living in 1917, as part of the international War context, brought about extensive labor protests and social unrest in the country, often in connection with the workers’ incipient and short-lived anarchist movement (see Fausto 1977). Inflation, accompanied by social and economic instability, continued throughout 1918 and intensified when the Spanish Flu broke out in the last quarter of the year. The rates of increase in the cost of living in Rio in 1917 and 1918 were, respectively, 10.1% and 12.2%, significantly above the immediately preceding or following years (source: IPEA Data). The cost of living issue, together with production contraction, unemployment and poor health conditions on account of the pandemic surge, engaged influential “economists” – in their roles as businessmen and industrial leaders, such as Jorge Street and Roberto Simonsen – in negotiations with their employees.

Workers demanded payment for periods when plants were shut down and/or they were unable to work on account of Spanish Flu-related illness. The decision to pay the workers was up to employers, as there were no government regulations about the matter (see Bertolli Filho 2003: 326). The workers’ trade union of the textile industry – the main manufacturing industry in Brazil at the time – had their request of payment of half salaries during the pandemic, put forward in October 1918, denied by the employers’ association Centro Industrial do Brasil (Fausto 1977). Street,

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<sup>6</sup> The following paragraphs are partly based on Alexandre Andrada, M. Boianovsky and Amaury Gremaud (2020), where further details may be found.

originally trained as a physician and one of the founders of the Centro Industrial in early 20<sup>th</sup> century – when he became a leading advocate of tariff protection of Brazilian industry – opposed the majority view. Together with some other businessmen (such as F. Matarazzo), he kept wages payment (wholly or partly) during the pandemic, as part of his general positive attitude toward trade union demands (see *Brasil Industrial: Revista de Economia e Finanças* 1919).

São Paulo's Sanitary Service blamed workers for spreading the Flu and increasing mortality rates, as they seemed to insist on working even when sick – the victims were thus turned into the guilty parts (Bertucci 2002: 127-128). The disruption of supply chains and food production brought about episodes of famine and looting in Rio, São Paulo and other big cities throughout October and November 1918, which contributed to the mortality rate (Bertolli Filho 2003). The Brazilian Red Cross in November 1918 urged São Paulo's industrialists to interrupt production while partly keeping the payment of wages during the pandemic. Around that time, the municipality of Sorocaba in the state of São Paulo reached an agreement with most industrialists in the city to take that course of action – it was an exception though (Dall'Ava and Mota 2017). The Brazilian Red Cross played an important philanthropic role in the pandemic, by helping to provide food and medicine. Given the government's (at the federal, state and municipal levels) limited ability, especially in large cities such as Rio and São Paulo, to assist population and keep the pandemic under control, philanthropy became particularly relevant.

The influential Rio newspaper *O Paiz* stated on October 30 1918 that the notion of “private property” was going through significant changes in the country. Capitalists were perceived as “depositories of social trust”, with the task of keeping and managing a share of “collective wealth”, and, by that, getting a compensation for their services to increasing social economic development. That led to a new view of philanthropy.

In the large-scale support of victims of the epidemics, through the organization of stable and definite social assistance works, which necessity the current crisis has shown, may our capitalists find a practical, efficient and nice way to smooth, if not eliminate, the danger of a conflict between capital and labor, which would pose a disastrous obstacle to the economic progress of Brazil. (*O Paiz*, 30 October 1918; quoted from Goulart 2003: 59-60)

Roberto Simonsen's philanthropic activities – such as the provision of medical and food support – toward his employees in Santos (state of São Paulo) illustrated well that philosophy. In December 1918 Simonsen, an engineer by training, who would play a major role in Brazilian development debates in the following decades, delivered in Santos a famous speech titled “For organized labor”, which praised what he perceived as the “solidarity” displayed by distinct social classes and workers' collective effort during the fight against Spanish Flu in the city (Simonsen [1918] 1932; reproduced also as Simonsen [1918a] 1973; [1918b] 1973). Simonsen ([1918a] 1973: 427-428) referred to his firm's significant “asset losses” caused by expenses with the support of workers during the pandemic. Cooperation between employers and employees – described as a “voluntary” reaction to the suffering impinged by the Spanish Flu – was perceived, in paternalist tone, as a better alternative to “class conflict”.

That fitted R. Simonsen's ([1918b] 1973) overall concern at the time with microeconomic production issues related to the efficiency of labor, as witnessed by his interest in scientific management along the lines of Taylorism/Fordism. He had inferred from his 1911 visit to the United States that cost reduction should be achieved via higher productivity and cooperation instead of lower wages and social conflict (Howes 2016; Curi and Saes 2014). As a matter of fact, real wages did go up during 1918, but for reasons related to labor shortage caused by the pandemic. Nominal wages of industrial workers in São Paulo, for instance, went up around 50% that year, as compared to an increase of 11% in food prices (Cardim 1936).<sup>7</sup>

### 3.3

Whereas the Brazilian government did not generally intervene in labor contracts and labor markets around the time of the Spanish Flu, it did however interfere heavily in the markets for goods (and sometimes in assets markets as well). In June 1918 – as a reaction to extensive urban protests against accelerating inflation and influenced by the French (Office Central des Vivres) and American (Food Administration, and the Price Fixing Committee of industrial goods) agencies created during the War –

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<sup>7</sup> A similar impact on real wages has been detected in the US and other countries. According to Garrett (2009), increasing Influenza fatalities by 10% raised wages by 0.9% percentage points in the US.

Brazilian authorities decided to establish the “Comissariado de Alimentação Pública” (CAP, Commissioner of Public Food Administration). CAP would become the main instrument of the government’s attempted stabilization of supply and prices of (mainly) agricultural and mineral goods in the second semester of 1918, which included the Flu pandemic span. Accordingly, it turned into the focus of extensive debates in Brazil, involving policy-makers, the parliament, the press and producers/exporters (see Linhares and Silva 1979: 43-54; 189-191; Bulhões, no date: 511-530).

CAP was a unique experience of economic control and intervention in the history of Brazilian economy and politics, never attempted before or repeated later. The government justified the exceptional powers of CAP by the War situation. Although Brazil did not actively participate in the War, it officially ended its neutrality in the conflict in October 1917, when it sided with the allied powers against Germany. As summed up at the time in the *Wileman’s Brazilian Review* (June 18<sup>th</sup>, 1918: 573), published in Rio, decree 13069 of 12 June 1918 created “control of foodstuffs and other articles of prime necessity” and provided for “verification of stocks” in warehouses. It also instituted “enquiry into the respective costs of production and prices of resale” and the authority’s power to “purchase the said products when necessary by requisition or expropriation on the ground of public necessity and its special war measure”, and “come to arrangements for fixation of prices”. Finally, export of such products would be “subject to approval” of the Food Controller. Another decree of 3 September further enlarged the CAP’s power to control exports of some commodities – a vital aspect of Brazilian economy at the time – and to “make use of any immovable private property that public necessity may require”, including the expropriation of “every kind of property” (*Wileman’s Brazilian Review*, September 10<sup>th</sup>, 1918: 867-68).

The man appointed as head (“Comissário Geral”) of CAP was Leopoldo de Bulhões, who had learned economics at the São Paulo law school, and served as Finance Minister in 1902-1906 and 1909-1910, and as Senator in 1894-1898 and 1911-1916 (see the biography written by his son Augusto de Bulhões in the 1950s, no precise date). Bulhões was representative of the “liberal” (in the European meaning) stance that dominated Brazilian politics during the Old Republic (1889-1930) as an ideal, if not in practice. Bulhões had built a reputation as an economist with orthodox views on monetary, fiscal and trade policies (see Fritsch 1988: 10, 55-56, 240-241).

Antonio Carlos Ribeiro de Andrada, Finance Minister for most of 1918 (until November) followed along those lines. The rate of growth of the money stock in the last quarter of 1918 was 4.9%, slightly below the first three quarters, whereas the fiscal deficit in 1918 was close to average values for the War period as a whole (see Fritch 1988, statistical appendix). Hence, the Spanish Flu did not bring about overall expansionary monetary or fiscal policies.

In his report of 5 November 1918, at the peak of the Spanish Flu pandemic, to Brazilian President Wenceslau Braz, Bulhões mentioned how the latter, by creating CAP, had been forced to contradict the “liberal school” that guided government actions (Bulhões, no date: 519). Decrees fixing maximum prices for several commodities for limited periods came out throughout the second semester of 1918, particularly during the pandemic months. Bulhões explained how, in view of his long-time opposition to any interference with the “ordinary course of economic factors”, he had tried to adopt “indirect measures” – such as the improvement of transportation of commodities to the largest cities – in order to avoid implementing price control. However, increasing prices and inventories speculation, partly caused by the War and intensified by the impact of the Spanish Flu on the supply and demand for food and medicine, urged him to fix maximum prices for selected goods (Bulhões, no date: 523).

CAP may be regarded as the first agency of economic planning in Brazil, as its activities entailed calculations of costs, estimates of stocks and production flows, setting of profit margins, exports, overlooking of transports, etc. Incipient planning, of course, was one of the byproducts of the War economy abroad. The irruption of the pandemic determined an increase of the tasks of the *Comissariado*, at a time when the effects of the disease on its staff and the “general disorganization of urban life” raised new obstacles to its working (Bulhões, no date: 529).

Most producers – especially the powerful lobby of sugar plantations from the state of Pernambuco, well represented in the parliament (Linhares and Silva 1979: 48-52) – and the press reacted negatively to Bulhões’ management of CAP, including the restriction on exports. According to the annual economic retrospect published by *Jornal do Comércio* (1919: 3-4), the main Brazilian financial newspaper at the time, Bulhões’ course of action was necessary from the perspective of consumers. However, as a powerful perverse side effect, it brought uncertainty to rural producers, with ensuing reduction of production and of orders of goods from manufacturing

industries, especially textiles. Moreover, the pandemic caused an almost complete disruption of textile production in October 1918 (*Jornal do Comércio* 1919: 257). As a result, Banco do Brasil (a public bank) introduced special credit provisions for textile industry in January 1919. *O Paiz* (22 October 1918) charged CAP for causing food scarcity and hunger in Rio. According to the newspaper, the “socio-economic problem created by the Commissioner is so serious that, in comparison, the Spanish Flu is just a setback.” The same newspaper would charge Bulhões in 8 January 1919 for turning from a respected monetary expert into being unobservant of “clear principles of basic economic science.”

Joseph Phillip Wileman – an English economist and entrepreneur, author of an important book about the Brazilian monetary system and its history (Wileman 1896), who settled in Rio at the end of the 19<sup>th</sup> century – defended Bulhões from criticism coming from *O Paiz* and other sources. Wileman supported, in his well known economic weekly (apparently modeled after *The Economist*), the restrictions on exports in order to increase domestic supply. ”This is a pacific community, but there is anything they can’t stand for long that is hunger, that speculators would condemn this population to if advisers like *O Paiz* had their way!” (29 October 1918). According to *Wileman’s Review*, by preventing the prices of sheer necessities from “soaring sky high”– and even managing to reduce most prices since he took office in June 1918 – Bulhões had helped to pull Rio from the “worst crisis it ever faced” (19 November 1918). Wileman’s final verdict was quite positive about the cost-benefit of Bulhões’ policy during the pandemic:

Food Control may have stopped business, it is true, but there is one thing far more important than business, and that is the maintenance of order in this and every other city. (...) Over 20,000 people are said to have perished in the last epidemic, many from sheer starvation. The army is undisciplined and could not be relied on in a struggle for life, in which the whole population of the city may be involved, and even politicians are not lacking to fan rising discontent into a flame of revolt.

Some economic historians have endorsed Wileman’s positive assessment of Bulhões’ effort in keeping prices under control (Albert 1988: 265; Fritsch 1988: 50). A sustained contemporary effort to vindicate CAP and its performance came from A.B. Ramalho Ortigão (1919), an economist trained at the Institut Supérieur de

Commerce de l'État in Antwerp (Belgium), author of books on money and history of economic thought, and professor of political economy and finance at the Escola Superior de Comércio (High School of Commerce) in Rio.<sup>8</sup>

Ortigão (1919: 346-49) deployed data about stocks of commodities in July and December 1918 in Rio to argue that the food supply had not come down during that period. Moreover, according to his numbers, prices of goods controlled by the Commissariat had declined 29% on average in that same period, leading to the counter-intuitive conclusion that the cost of living in Rio actually came down during the pandemic. Ortigão referred also to calculations by Rio's newspaper *A Rua* for a shorter period (3 months) and smaller range of goods, with similar results, expressed in the newspaper's headline: "How much speculators lost. Poor families' food-dish cost about 50 contos less in three months." ("Quanto os açambarcadores deixaram de ganhar. O prato do pobre custou menos, em três meses, cerca de cinquenta mil contos." Contos was the Brazilian currency at the time.)

Economists' actions during the pandemic were not helped by the fact that epidemiologists, in Brazil and abroad, did not know what caused the Spanish Flu and, therefore, did not know how to treat it properly. As pointed out by Tognotti (2003), over-confidence and the Pasteur's revolution idea that every infectious disease was caused by a bacterium, led the international scientific community to mistakenly accept the German bacteriologist R. Pfeiffer's 1892 claim that he had identified the pathogenic influenza agent in a bacterium. It took some time for scientists to admit that the Spanish Flu originated from a virus, not a microbe. The collapse of the "Pfeiffer doctrine" was accompanied by a crisis suffered by bacteriology in the autumn of 1918, around the same time the disease strongly affected Brazil.

The Oswaldo Cruz Institute, which was by 1918 the most prestigious Brazilian scientific institution, searched in vain for a vaccine. By late October 1918, Carlos Chagas – who had replaced Oswaldo Cruz as head of that institution after the latter's death in 1917 – was asked to take charge of the fight against the pandemic in Rio. By that time, the Flu was already starting to ebb, but Chagas became a hero as the pandemic luckily receded, which confirmed society's trust on him (Goulart 2005: 24-31; Spinney 2017: 268).

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<sup>8</sup> Linhares and Silva (1979: 47) mention Ortigão as a member of CAP, but his name is not generally listed in references to that institution.

That episode contributed to reinforce the reputation of Chagas and other Brazilian hygienists at the time, involved in nationalist movements that identified poor health conditions – particularly in vast rural areas – as the culprit of low labor productivity and underdevelopment in Brazil. At the same time, the large death toll pointed to demands for reforms of health policy and management in Brazil, leading to the creation of the Departamento Nacional de Saúde Pública (National Office of Public Health) in 1920. Between 1916-1920, a large political-scientific movement, illustrated by the Liga Pró-Saneamento do Brasil (League in Support of Brazil's Sanitation) founded in 1918 – which involved extensive travelling to learn about health and living conditions in poor rural areas – elected disease as the main obstacle to civilization in the country (Hochman 2016). Disease, rather than race or climate, was what defined Brazil and its overall poverty, a view that became part of Brazilian literature as well (Spinney 2017: 268-269). Science, especially medicine in its broad sense, was perceived as the solution.

Economists did not get involved in such debates about Brazilian backwardness at the time. It was only in the post-World War II period that economic underdevelopment became a focus of economic research and policy – in Brazil and other countries.<sup>9</sup> That corresponded to the transitional phase toward the formation of the Brazilian economic scientific community, as discussed next.

## **4. Writing the history of modern economic science in Brazil**

### **4.1**

One should distinguish, while working on the history of economic thought in Brazil, two or three phases, according to the turning point represented by the formation of an economic scientific community in the country in the mid 1960s. The first long one goes from early 19<sup>th</sup> century to the 1930s, when Brazilian economic thinkers essentially imported and adapted European and (later) American economic ideas to their own purposes (see e.g. Boianovsky 2013). That encompasses, of course, the

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<sup>9</sup> Development economists (e.g. Gallup and Sachs 2001) have discussed the role of geography, ecology and tropical diseases (such as malaria) in explaining poverty traps, especially in Africa.

brief time span of the 1918 Spanish Flu pandemic. The post-War II period marks a transition stage, when the first research institutions were established – including Latin American ones with strong links with Brazil, such as the United Nations Economic Commission for Latin America (CEPAL), with headquarters in Chile – and the degree of originality of economic thought in Brazil started to increase, especially in the then new field of development economics. Finally, since the mid 1960s and early 1970s Brazilian economists have become part of the transnational economic community, connected through international hierarchical networks.

The model of “creative adaptation” as explanation of the international transmission of economic ideas to the “periphery” (see Mäki 1996; Cardoso 2003, 2017) – which assumes a very high degree of net imports of ideas from the “center”, with virtually no exports or creation of original theories, hypotheses or analytical models on the periphery – applies particularly to the first phase, even if “adaptation” continued to be a feature of the other phases.<sup>10</sup>

Basalla’s (1967) seminal article provided a first analytical study of the international diffusion of modern science from Western Europe to the rest of the world, based on a three-stage model. Basalla’s stadial model has been often compared to Rostow’s (1960) modernization approach to growth through a succession of stages (see e.g. MacLeod 2000). Nevertheless, historians of economics have overlooked Basalla’s model (Spengler’s 1968 passing reference is an exception). In Basalla’s stage 1, the new “non-scientific” society or nation provides a source for European science. Stage 2 corresponds to colonial (or dependent) science, when scientific activity is based upon institutions and traditions of nations with mature scientific culture. In stage 3 an independent national scientific tradition is established, so that scientists’ major ties are within the boundary of the country where they work.

Basalla’s center-periphery model was supposed to apply mostly to the successful historical experiences of the United States and Japan. However, it has been applied as well to particular or micro-historical episodes in other countries, as in Stepan’s (1976) thesis that the Brazilian Oswaldo Cruz Institute developed as far as stage 3. After some initial success, Basalla’s model was criticized for its association of science with nation, disregard for the transnational character of science, and the

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<sup>10</sup> Cf. Cosentino, Silva and Gambi’s (2019) extension of the “creative adaptation” model to the Brazilian history of economic thought as a whole, regardless of the existence of an economic scientific community.

assumption of a linear and unidirectional trajectory that did not acknowledge the multiple characteristics of colonial science (see e.g. MacLeod 2000).

Despite its drawbacks, Basalla's framework called attention to some features of colonial science that may be applied to the transition phase towards the establishment of a fully developed scientific community. Colonial science provides the "proper milieu, through its contacts with established scientific cultures, for a small number of gifted individuals whose scientific researches may challenge or surpass" the work of scientists from the center (Basalla 1967: 614). C. Furtado's ([1957] 2008) analysis of what would decades later be named the Dutch Disease (an aspect of the Natural Resource Curse) is a case in point. And so is M.H. Simonsen's (1964) formal discussion of the cash-in-advance constraint, three years before Clower (1967) turned it into one of the main monetary models.

In his report about the Venezuelan economy – produced anonymously for CEPAL in 1957, but censored at the time and eventually published much later – Furtado discussed the perverse effects of oil production on the economic structure of that country. The oil boom had provoked an overvaluation of the Venezuelan currency, which raised the dollar value of money-wages and hurt the profitability of other exports and sectors of the economy, accompanied by higher imports. "The terms of the problem are simple enough", Furtado ([1957] 2008: 54) explained: "The average level of money-wages", calculated in dollars, "is above the average productivity level. Therefore, any tradable good comes with advantage into the Venezuelan market..." Such sharp original exercise of economic analysis, one of Furtado's many contributions to development economics advanced in the 1950s, went unnoticed at the time (see Boianovsky and Solís 2014). And so did Simonsen's (1964) piece.

Simonsen (1964) explicitly introduced the cash-in-advance constraint as an inequality in a nonlinear programming problem featuring the Kuhn-Tucker mathematical approach. It represented an attempt to reinterpret the controversy over Don Patinkin's critical interpretation of classical monetary theory (Boianovsky 2002; Walsh 2003: 100). Whereas Furtado came from law school, Simonsen was trained as an engineer. That was shortly followed by mathematical studies at the Instituto de Matemática Pura e Aplicada (IMPA, Institute of Pure and Applied Mathematics) in Rio in 1955, where he also taught the first course in applied mathematics soon after. IMPA – a research center created and funded by CNPq in 1952 – attracted highly

qualified mathematicians from Brazil and abroad. It would play a key role in the development of the Brazilian community of mathematicians as part of international networks (see Silva 2004).

Simonsen's (1964) article, as well as his general mathematical stance in economics displayed as professor at the Vargas Foundation, grew out of his period at IMPA. This is clear in his 1994 book, which collected essays on the philosophy of science, history of mathematics and physics, and history of economics mathematically contemplated. In part because of Simonsen's initial influence, mathematical economics eventually became an important area of graduate teaching and research at IMPA in the 1970s, leading to its further internationalization and several contributions by Brazilian mathematical economists (sometimes based abroad) published in top journals ever since (see Assaf 2020).

Apart from his 1964 article, Simonsen contributed also to monetary macroeconomics, with special attention to chronic inflation in Brazil. An international conference held in Rio (Baer and Kerstenetzky 1964) – funded by the Ford and Rockefeller Foundations and by the Economic Growth Center at Yale – about the Latin American persistent debate between structuralism and monetarism (a term originally coined by Brazilian economists) got him started on the subject, leading to his modeling of inertial inflation processes and widespread indexation mechanisms practiced in Brazil at the time. Milton Friedman's praise of Brazilian indexation – upon his visit to Brazil in 1973 (Boianovsky 2020) – attracted critical attention from the economic community worldwide, resulting in a couple of international conferences held in São Paulo and Rio, one of them co-organized by Simonsen (Dornbusch and Simonsen 1983). The formalization of inflationary processes under widespread indexation – as well as the design of monetary reforms to stabilize the economy – by Simonsen and other Brazilian economists reinforced the ties between the Brazilian economic scientific community and its international peers. Moreover, it confirmed Hicks' (1967) point that the history of monetary economics often reflects events from monetary history and institutions.

## 4.2

Furtado sought forms of integration with the international economic community (or parts of it) from the beginning, not only because he was director of economic development at CEPAL for most of the 1950s. He was the first Brazilian economist to pursue doctorate studies abroad – at the Sorbonne in the late 1940s, thanks in part to his contact with M. Byé during the latter’s stay as professor of economics in Rio earlier that decade. However, as Furtado engaged in research about development planning at CEPAL, it became gradually clear that, despite analytical progress made at that institution at the time, a full theoretical model of economic development still eluded Brazilian and Latin American economists.

As put by Basalla (1967: 614), “colonial scientists cannot share in the informal scientific organizations” of mature scientific cultures, in the sense that they “cannot become part of the ‘Invisible College’ in which the latest ideas and news of the advancing frontiers of science are exchanged”. This became painfully clear to Furtado upon reading Arthur Lewis’s (1954) seminal model of economic development with unlimited supply of labor, which Furtado regarded as the single best piece ever written on development theory. In a letter of February 1955 to his CEPAL colleague Juan Noyola, Furtado remarked that Lewis followed “exactly the same approach adopted by us in our preliminary studies for planning techniques.” Furtado’s frustration was clear:

I am convinced that if we had not been discouraged to ‘theorize’ at that stage, we would have been able to present two years ago the basic elements of a theory of development along the lines of this important contribution by Lewis. We are left with the fact that ... we find ourselves today relatively behind and without anything of real significance to show for (reproduced from Boianovsky 2010: 252)

Being a UN agency, CEPAL focused on applied, not basic theoretical research. Only graduate academic courses in economics could provide for “basic research”, necessary to foster work in applied economics itself (Furtado 1962a). However, Brazil (and Latin America as a whole) lacked high quality professors of economics, which could be solved by sending abroad, to the “great universities with high teaching standards,” large groups of economists (1962a: 51). That opinion

probably reflected not just Furtado's doctorate at the Sorbonne, but also the 1957-58 academic year he spent at Cambridge University, when he wrote his 1959 masterpiece *Formação Econômica do Brasil* (translated as *The Economic Growth of Brazil*) with support from a Rockefeller Foundation grant. Basic economic research should then be conducted by confronting prevailing theories with the reality of underdevelopment. Interestingly enough, Schwartzman (1978) would conclude from his historical investigation that a main problem of Brazilian science in general was the excessive emphasis on applied "utilitarian" research and neglect of a basic theoretical one.

Around the same time, in two chapters of his 1962b book, Furtado criticized economic teaching in Brazil for moving away from the canons of scientific explanation. Any science – economics included – should be presented as a system of hypotheses, which explanatory power should be "tested against a given empirical reality". But that was not the case with economics in Brazil, akin to a body of doctrines rather than scientific theory. Moreover, because of its historical character, explanation and prediction were not symmetrical logical operations in economics, unlike other sciences. From Furtado's perspective,

The economist with a solid methodological basis and clear grasp of the scientific method in general tends to be, among us, *almost necessarily heterodox*. He will shortly learn that the trod paths are of little value. He will soon learn that imagination is a powerful tool that must be cultivated. (Furtado 1962b: 98; italics added; my translation)

Such a Popperian approach, with its association between progress in economic science and refutation of established theories, reflected the recent (1959) English translation of the *Logic of Scientific Discovery*. Furtado would later quote, in the opening passage of his 1976 book, from Popper's remark about the role of imagination in science. He shared the Popperian view of scientific method with other Brazilian economists such as Simonsen (1994: introduction and chapter 1) and A.B. Castro (1969: 14-16), who studied with Popper at the LSE in the early 1960s.

The absence of scientific activity in the field of economics in Brazil at the time could also be determined by comparing international publications in economics and other sciences. Whereas Brazilian scientists contributed, even if modestly, to international journals of mathematics, biology and physics, "in economics, however,

we do not exist” (Furtado 1962b: 99). It was *not* a matter, Furtado (1962b: 100) clarified, of elaborating a “new economic science”, but of contributing to the “normal development of science” by submitting conventional economic theories to the test of Brazilian economic reality – or any empirical reality for that matter (see Bianchi 2018: 225-225 for the argument that R. Prebisch did not attempt to build a distinct Latin American economics either).

Furtado had tried in the mid 1950s to create an embryo of an economic scientific community in Brazil by setting up the “Clube de Economia” (Economists’ Club), with its journal *Econômica Brasileira*. The Club reached out for the international community, with only limited success though. Despite the fact that the Club was founded as an alternative to “liberal” economics pursued at the Vargas Foundation under Gudin’s leadership, Furtado expressed in a letter of 1956 his admiration for Gudin’s “permanent enthusiasm for research, for works that are not source of social prestige, but which constitute the basis of what is in economics true scientific accomplishment” (quoted from Andrada, Boianovsky and Cabello 2018: 752).

Furtado did not participate in the process of creation of the Brazilian economic scientific community from the mid 1960s to early 1970s – except indirectly through his published books and articles – as he had fled Brazil in April 1964 soon after the military coup d’état. Between 1965 and 1979 he taught development economics at the Sorbonne. Upon his return to Brazil, Furtado attended the 1979 Anpec meetings. As recalled by Flávio Versiani (2007), Furtado was impressed by the achievements of the Brazilian economic community in general and by the Anpec meetings in particular, which he compared with international major economic conferences he had attended, such as the annual meetings of the American Economic Association.

As Schumpeter (1954: 22-24) pointed out, the history of “general” economic analysis should be complemented by the history of “applied fields” such as taxation, agriculture, transportation, labor and population economics, with their close attention to the interrelation between facts and concepts. The history of agricultural economics in Brazil – like population economics, under Mortara’s influence – was largely a separate affair from the evolution of economic research in general (Haddad 1980: 661, n. 6). The Brazilian Society for Rural Economics (SOBER) was founded in 1959, long before the beginning of Anpec in 1973.

The “father of modern agricultural economics” in Brazil was Ruy Miller Paiva (b. 1914; d. 1998) (see *American Journal of Agricultural Economics* 1979). Upon graduating as agronomist at ESALQ (“Escola Superior de Agricultura Luiz de Queirós”) in the mid 1930s, Paiva encountered agricultural economics during his Master of Sciences at the Agriculture and Mechanical College of Texas in the early 1940s.<sup>11</sup> That was how agricultural economics – an essentially applied and empirical field, originated in the US in the 1920s – was introduced in Brazil. Paiva (1950) wrote one of the first articles by a Brazilian author in an international economic journal. Interestingly enough, it was a methodological piece, claiming agricultural economics as part of applied instead of basic theoretical research – in contrast with Furtado’s (1962a, b) later point about economics in general. The high point of Paiva’s academic trajectory was probably his joint massive research with American agricultural economist William Nicholls about the productivity of Brazilian agriculture, carried out at IBRE with funding from the Ford and Rockefeller Foundations (see Nicholls and Paiva 1965 for a first installment).

### 4.3

The two-volume collection about the history of sciences in Brazil, edited by sociologist Fernando de Azevedo in 1955, included chapters about economics and social sciences, written respectively by Paul Hugon and Azevedo himself. That was one of the first comprehensive histories of sciences anywhere, with an essay about “political economy”. Azevedo, a renowned educator, was a main formulator of the plan to bring well-reputed foreign scientists to form FFCL at USP in the mid 1930s, including Hugon of course. Hugon’s chapter remains the authoritative source about economic teaching and publications in Brazil from early 19<sup>th</sup> century up to the mid 1950s, with some brief incursions into post-War II incipient economic research. Hugon’s (1955: 351) main conclusion was that the history of Brazilian political economy, from Visconde de Cairu in early 19<sup>th</sup> century to Roberto Simonsen in the 1940s, was dominated by a continuous liberal-nationalist conception. His reading, unsurprisingly, focused on economic policy formulation, not on theoretical

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<sup>11</sup> ESALQ, a leading agricultural research institution, was created in 1901 and incorporated as part of USP in 1934 (Schwartzman 1979: 102-103).

accomplishments. Hugon refrained from any attempt to locate the history of economic thought as part of the history of sciences in Brazil.

Twenty-five years later, an updated version of the Azevedo collection came out (Ferri and Motoyama 1979-1981), with a new chapter on the “history of economic science” by Dorival Vieira, who had been Hugon’s graduate student in the 1940s. Vieira (1981) did not add much to Hugon’s account. Surprisingly enough, he did not even mention C. Furtado and M.H. Simonsen, often regarded as among the most influential Brazilian economists from the 1950s to 1990s. Burke’s (2018) critical survey of recent Brazilian historiography of science notices that the history of social sciences lags behind the history of natural sciences in the country. Although he mentions some works on the history of social sciences, no references to research on the history of Brazilian economic thought are provided, which illustrates how economics has remained largely apart from other sciences. Indeed, it was only in 2003 that an economist (C. Furtado) was elected to the Brazilian Academy of Sciences.

Azevedo (1955b: 393) asserted what he believed to be the common empirical methodological basis shared by social and natural sciences alike in Brazil. Moreover, he dismissed criticisms that Brazilian social sciences should refrain from importing methods, concepts and research techniques from abroad, voiced mainly by sociologist Guerreiro Ramos. Such debates about a “national” Brazilian social science essentially distinct from foreign ones – which involved Florestan Fernandes, Roger Bastide and other critics of Ramos in the 1950s – were not reproduced in economics, as illustrated by Furtado. Significantly, Azevedo (1955b: 395) deployed the word “transnationalize” (“*transnacionalizar-se*”) as part of his argument about the “universal” character of sciences – social or otherwise.

The notion of scientific communities is often associated with Kuhn’s concept of “normal science” as a problem-solving activity in the context of a dominant theoretical framework or paradigm – as distinct from “revolutionary science”, when a paradigm is replaced by another one because of a series of refutations or anomalies. From Kuhn’s perspective, normal science is the rule in the history of science, whereas periods of revolutionary science are relatively brief (see Blaug 1992, chapter 2). Schwartzman (1979: 7-8) argued for a history of science in Brazil along the lines of Kuhn’s normal science, aiming at “understanding science not in its most spectacular and visible aspects, but in its permanence and continuity.” Hence, the history of science on the periphery “necessarily becomes social history”, as there is “little to

know and narrate in relation to the history of original ideas or of really significant impacts of science on society.” The goal, rather, is to understand “efforts to establish a ‘normal’ science ... and a capacity to participate effectively, even if not centrally, in the contemporary frontiers of knowledge.” In other words, becoming members of the “Invisible College” formed by the international community.

It was after the formation of a national economic scientific community that Brazilian economists started to become part of transnational economic normal science. This is well illustrated by recent research on the economics of the coronavirus pandemic, as contrasted with contemporary debates about the 1918 Spanish Flu, documented above. Surely, the notion of a single dominant paradigm does not easily fit economics, which is why Lakatos’ framework of multiple “research programs” is often preferred. In his concluding comments at a conference on the post-1945 internationalization of economics, Bob Coats (1996: 396) called attention to the fact that the long-cherished belief that economics is, or can be, a universal science, is “still a chimera”, as made clear by the existence of heterodox traditions.

Such heterodox research programs have been particularly strong in Brazil, going back to the structuralist approach put forward by Furtado and other CEPAL economists in the 1950s (Boianovsky 2015). Since the 1970s – when different sorts of heterodox economics took form and were institutionalized at the international level as reactions to dominant neoclassical theory (see Backhouse 2000) – a significant fraction of Brazilian economists has become increasingly integrated into distinct forms of international heterodoxies.<sup>12</sup> That is also true of Latin American neo-structuralism, which has adopted the modeling strategies of international heterodox streams (see Barcena and Prado 2015). The history of modern economics, in Brazil and elsewhere, is better understood from such transnational perspective.

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<sup>12</sup> This is well illustrated by the prominent post-Keynesian economist Fernando Cardim Carvalho (b. 1953; d. 2018) (see his interview in Mearman, Berger and Guizzo 2019).

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