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Brazil's Financial Centers in the Twenty-first Century: Hierarchy, Specialization, and Concentration

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The purpose of this article is to examine how the geography of Brazil's financial centers changed since 2000 in terms of financial center hierarchy, specialization, and spatial concentration. To address these questions, we use data on employment and mergers and acquisitions in financial and business services, complemented with data on remuneration and bank assets. Our results show that São Paulo has consolidated its dominance as Brazil's primary financial center, with market for corporate control as an important channel of this process. Rio's decline as a financial center, which started more than fifty years ago, has continued into this century. At the same time, Brasília has emerged as the third most important financial center of Brazil. We document the recent dynamic of this territorial division of labor, with Rio's specialization in insurance and Brasília's dependence on government-owned banks. Finally, we show signs that Brazil's financial center activities might be following an inverse U-shaped pattern whereby increasing geographical concentration is followed by its slow decline. **Key Words:** Brazil, concentration, financial centers, São Paulo, territorial division of labor.

本文的目的在于检视巴西的金融中心地理，在金融中心位阶、特殊化与空间集中上，如何自2000年开始改变。为了应对这些问题，我们运用金融与商业服务业中的就业与并购数据，并以薪资和银行资产的数据进行补充。我们的研究结果显示，圣保罗已巩固其作为巴西主要金融中心的优势，并以企业控制的市场作为此一过程的重要管道。里约作为金融中心的衰落始于五十年前，并持续至本世纪。于此同时，巴西利亚浮现成为巴西第三大重要的金融中心。我们记载此般劳动领域划分的晚近动态，其中里约专长在保险，而巴西利亚则倚赖政府持有的银行。我们最后展现巴西的金融中心活动有可能跟随反向的U型模式之迹象，随着逐渐增加的地理集中而来的则是其缓慢的衰落。**关键词：**巴西，集中，金融中心，圣保罗，劳动领域划分。

El propósito de este artículo es examinar cómo ha cambiado la geografía de los centros financieros del Brasil desde el 2000 en términos de la jerarquía del centro financiero, la especialización y la concentración espacial. Para abocar estas cuestiones, usamos datos sobre empleo, fusiones y adquisiciones y servicios de negocios, complementados con datos sobre remuneración y activos bancarios. Nuestros resultados muestran que São Paulo ha consolidado su dominio como centro financiero primario del Brasil, con el mercado para control corporativo como uno de los canales importantes de este proceso. La declinación de Río como centro financiero, que empezó hace más de cincuenta años, ha continuado en este siglo. Al mismo tiempo, Brasilia ha surgido como el tercer centro financiero más importante de ese país. Documentamos la recinte dinámica de esta división territorial del trabajo, con la especialización de Río en seguros y la dependencia de Brasilia de bancos pertenecientes al gobierno. Finalmente, mostramos señales de que las actividades del centro financiero del Brasil podrían estar siguiendo un patrón en forma de U invertida, donde la creciente concentración geográfica es seguida por su lenta declinación. **Palabras clave:** Brasil, centros financieros, concentración, división territorial del trabajo, São Paulo.

A major shift in the economic and financial geography of Brazil took place in the postwar decades, when São Paulo surpassed Rio de Janeiro (hereafter Rio) as the dominant industrial and then financial center (Correa 1989). Although the relocation of Brazil's capital to Brasília in 1960 was a major factor behind this shift, São Paulo's economy had been growing faster for decades prior to 1960. Starting as a center of the coffee trade, São Paulo developed a large industrial economy drawing on agricultural and mineral resources of central Brazil, connected with the rest of the world through the seaport of Santos. By 1960 the population of São Paulo surpassed that of Rio and the tonnage of ships calling at Santos surpassed the equivalent number at Rio. In

1951 the total number of passengers embarking at São Paulo's airport already nearly matched that at Rio. By 1960 the value of turnover on the São Paulo stock exchange represented over two thirds of Brazil's total. Since the 1970s, São Paulo has become the "informational metropolis" of Brazil, attracting the headquarters of the largest private banks, as well as other firms specialized in information-intensive activities (Santos 1994). In 1976, São Paulo hosted 102 foreign banks, with Rio's number at fifty-five (Porteous 1995).

The change at the top of financial center hierarchy in postwar Brazil was not an isolated case. Porteous's (1995) book that mentions the case of Brazil focuses on "the striking rise to prominence in

the post-war era of Sydney and Toronto over the older established financial centres of Melbourne and Montreal” (86) and describes a shift from Cape Town to Johannesburg in South Africa. As such, the tale of Brazil’s primary cities has been told in both national and international contexts. Our article, although informed by research on the events of the twentieth century, offers an update on this literature by focusing on the development of Brazil’s financial centers in the twenty-first century. Specifically, our goal is to examine how the geography of Brazil’s financial centers has changed since 2000 in terms of spatial concentration, hierarchy, and specialization. This allows us to address important subsidiary questions: How has the lead of São Paulo over Rio changed in this century? What are other leading financial centers of Brazil? What is the level of specialization among Brazil’s financial centers? What is the role of Brasília and other cities in the territorial division of financial functions and labor in Brazil?

Empirically, by focusing on Brazil, the article contributes to filling an important gap in research on global and world cities and financial centers in the Global South (Robinson 2002). Conceptually, our contribution is mainly methodological and lies in the triangulation of data on employment, remuneration, and mergers and acquisitions (M&As), supported where relevant with data on assets of financial institutions, their headquarters’ locations, and branch networks. This combination of data allows us to capture many aspects of financial center activity across different parts of the financial and business services complex. In this way, we complement existing studies by Brazilian scholars, who focused on commercial banking, their networks, and relationship with urban networks in Brazil (e.g., Dias 1995, 2017; Santos and Silveira 2001; Contel 2011; Crocco 2012; Nogueira et al. 2015) and financialization of Brazilian cities (Cavalcante et al. 2018). We also fill a gap in international studies that focus on global and world city approaches (e.g., Rossi and Taylor 2005, 2006).

In the following section, we briefly review the literature on factors driving the geography of financial centers and empirical research on this topic concerning Brazil. We then introduce data and methodology. The core empirical analysis is divided into two parts. Following that, we focus on key measures of concentration, financial center hierarchy, and specialization based primarily on employment data. We then deepen the analysis using data on M&As in the financial and business services (FABS) sector. The final section concludes and draws some implications for future studies.

Brazil’s Financial Centers in a Theoretical and Empirical Context

Following global and world city research and works on global financial networks, we define financial

centers as spatial concentrations of firms active in the finance, insurance, and real estate sectors as well as related professional services, with law, accounting, and business consulting in the lead (Coe, Lai, and Wójcik 2014). As such, financial centers represent a large pool of mostly highly paid jobs and centers of power with major impact on other economic sectors and beyond financial centers (Klagge and Martin 2005; Martin and Pollard 2017).

Geography of financial centers is mostly conceptualized as an interplay between centripetal and centrifugal forces. Centripetal forces, which increase spatial concentration, can be divided into localization and agglomeration economies (McCann 2001). Localization economies are driven by benefits that accrue to financial and related firms locating their activities close to each other. Colocation facilitates both competition and collaboration. Large financial transactions, such as securities underwriting or syndicated lending, require collaboration and trust among many firms across the FABS spectrum (Leyshon and Thrift 1997; Wójcik 2013). Collaboration applies also to retail transactions, such as mortgage lending, involving banks, real estate firms, insurers, and lawyers. By locating close to each other, these firms can share and develop a larger and deeper labor market, infrastructure, and knowledge (Taylor et al. 2003). Agglomeration benefits in financial geography concern the benefits of locating in large urban areas, in proximity to suppliers (e.g., information technology firms) and customers (with large companies in the lead) from beyond the FABS sector. What magnifies localization and agglomeration economies is the tendency of foreign FABS firms and their customers to use one financial center of a country as a gateway into the domestic market (Taylor and Derudder 2016).

The key centrifugal force involves information asymmetry. Spatial proximity helps FABS firms screen, monitor, and trust their customers and vice versa, thus driving the location of the former to wherever their customers are. Another significant centrifugal force concerns diseconomies of agglomeration, manifesting themselves in high labor and office costs, trade unionism, and congestion pressures on infrastructure. Politics and technology also have a major impact on the geography of financial centers and can act as both centripetal and centrifugal forces depending on context. Decentralized political structures can protect local and regional financial services industries and their centers against centripetal forces (Verdier 2003). Germany is a case in point here (Wójcik and MacDonald-Korth 2015). On the other hand, in more centralized polities and economies, as the British example illustrates (Massey 1995; Marshall et al. 2012), politicians and regulators might favor concentration of the financial industry, as it facilitates closer relationships between politics and finance, with positive (better monitoring) and negative (collusion and corruption)

outcomes. Technology enlarges the spatial reach of leading financial centers but, on the other hand, it facilitates the unbundling of the financial services production chain, particularly by spinning off back- and midoffice functions from existing centers, thus creating a new territorial division of labor in the sector. According to new economic geography, with technology and politics lowering the costs of transport and communication to very low levels and diseconomies of agglomeration rising, an inverted U-shaped pattern might be obtained, whereby a period of rising concentration in financial center activity is followed by its decline (Grote 2007).

This debate on the tension between centripetal and centrifugal forces is reflected in the literature on the spatial structure of Brazil's economy. Correa (1989), for example, showed that bank concentration and dispersion were important in reshaping the Brazilian urban network in the twentieth century. Santos (1993) described private firms and market forces as drivers of agglomeration, dominant in Brazil ever since the state lost control of national territorial planning in the 1980s. According to Santos and Silveira (2001), the development of a modern material base, founded mainly on transport and energy infrastructures and telecommunications systems, has increased São Paulo's capacity (as a city and state) to generate external economies that attracted the most dynamic firms in Brazil. This mechanism has also enhanced São Paulo's role as a financial center (Contel 2011). On the other hand, Instituto de Pesquisa Econômica Aplicada (Institute of Applied Economic Research), Instituto Brasileiro de Geografia e Estatística (Brazilian Institute of Geography and Statistics), and The University of Campinas (2001) describe dispersion of economic activity with new dynamic centers such as Manaus, Brasília, and Goiânia emerging in the 1990s.

Brazil has a large economy, a vast territory, and a federal structure. These factors themselves pose limits to the extent to which financial and related services in Brazil can be concentrated in one city. In addition, since at least 2002, economic development of Brazil has been marked with growing social mobility, declining social income inequality, and decreasing, although still large, gaps in per capita income levels between regions, which create potential for local and regional financial centers (Góes and Karpowicz 2017). On the other hand, World Trade Organization accession in 1995 has intensified pressures on Brazil to liberalize its financial system both internally, through privatization and consolidation, and externally, through lowering entry barriers to foreign firms, as such acting as a potential centripetal force in the country's financial geography. Put together, these developments make a study of the recent development of Brazil's financial centers only more interesting and important.

Much of the international literature on Brazil's financial centers focuses on global and world city approaches. These studies show unquestioned primacy of São Paulo as a gateway center of Brazil far ahead of Rio, the second most connected city in Brazil as far as FABS are concerned. Taylor and Derudder (2016) showed that in global and world city research, São Paulo is the most cited city in Latin America. It is also the most connected city in producer services in the region (Derudder and Taylor 2018). In terms of financial center hierarchy, Rossi and Taylor (2005) documented that based on total bank connectivity, São Paulo and Rio are followed by the third stratum consisting of Curitiba, Belo Horizonte, Porto Alegre, Brasília, and Salvador. Rossi and Taylor (2006) added further flavor to this analysis, with Curitiba described as an "emerging gateway" into the Brazilian economy, with the capacity to bypass São Paulo and Rio; Brasília as neglected in world banking circles; and Salvador as a "by-passed city." Rossi, Beaverstock, and Taylor (2007) stressed the significance of regional financial centers in Brazil by showing the preponderance of intracity relations between providers and users of advanced producer services. Finally, Taylor and Derudder (2016) also shed some light on the question of specialization, showing a relatively strong position of Rio in management consulting and advertising, with São Paulo's primacy in finance and law. Most of these studies also stress strong connectivity between São Paulo and Rio.

Few existing studies offer evidence on the changing position of Brazil's financial centers, particularly in the last two decades. Studying producer services and their users, Rossi, Beaverstock, and Taylor (2007) claimed that there are simultaneous processes of concentration and dispersion of economic activity in Brazil. São Paulo serves as gateway city, but firms from other cities often find producer service providers abroad directly without using São Paulo. Derudder and Taylor (2016) showed that São Paulo's global connectivity remained largely unchanged between 2000 and 2013. To the best of our knowledge, the questions of how the concentration, financial center hierarchy, and specialization changed in Brazil in recent decades, however, remain unanswered. The following section explains the data and methodology we use to address them.

Data and Methodology

We use primarily data on employment and M&As in FABS. We source data from Cadastro Central de Empresas of the Brazilian Institute of Geography and Statistics (IBGE) on the number of employees in finance (categories 65 and 67 of the national

classification of economic activity in 2000–2005, 64 and 66 in 2010–2015), insurance (66 and 65, respectively), real estate (70 and L, respectively), and professional services (74 in 2000–2005 and 69 + 70 + 73 in 2010–2015). Whereas the definitions of finance and insurance used by IBGE are consistent throughout the period, those for real estate and professional services changed between 2005 and 2010. To consider this discontinuity in data, our intertemporal analysis focuses on finance and insurance. Data are available for regions, states, and municipalities. As we focused on metropolitan regions (*regiões metropolitanas*) rather than individual cities, we aggregated data on municipalities manually to arrive at figures for metropolitan regions. Considering the level of labor market integration within metropolitan areas, this choice seems justified, particularly for studying leading financial centers of a country.

To capture general patterns and trends in the spatial structure of FABS in Brazil, we calculate a geographical concentration index for regional and state-level data and location quotients for metropolitan regions using the following formulas.

$$C = \sum_{i=1}^N (x_i - s_i)^2$$

$$LQ_i = \frac{x_i}{s_i},$$

where i stands for a region or state; N is the total number of regions or states (five and twenty-seven, respectively, the latter including the Federal District); x is the fraction share of the region or state out of one for all regions or states in employment (in banking, insurance, real estate, professional services, and FABS in total); and s is the fraction share of the region or state in total employment across all sectors.

Data on M&As cover all deals completed between the start of 2000 and the end of 2017 that involve a FABS company headquartered in Brazil as either acquirer or target. FABS are defined in the

same way as in employment data for 2010 and 2015. Data come from a proprietary database from Dealogic (<http://www.dealogic.com>), the leading provider of data on capital market transactions in the world. A total of 1,199 M&A deals are covered, with deal value data available for approximately 65 percent of transactions. As Dealogic does not have geographical data on the companies concerned beyond their nationality, we added data on operational headquarters manually using corporate data sets and Web sites. The sheer number of M&A deals in FABS underscores their role as a mechanism driving consolidation in the sector. In FABS, where barriers to entry are typically high, a lot of corporate growth takes place through M&As rather than new firm formation and organic growth. As such, these deals offer a major insight into the corporate geography of finance.

Analysis of employment data and that of M&As shows that they complement each other. The former represents the key input and stock of FABS and the latter a flow and key mechanism of corporate restructuring. Both can be analyzed for different segments of FABS over time and across space. In contrast to employment data, M&As also allow a comparison between domestic and cross-border activity. To gain further insight into the domestic–foreign dimension of finance and different types of banks, we complement the analysis with data on bank assets from the Central Bank of Brazil (2018). We also use information on the spatial structures and branch networks of selected organizations from their Web sites. Finally, to better appreciate different types of employment in FABS, we use data on remuneration in FABS from IBGE.

Financial Center Hierarchy, Specialization, and Concentration

We start empirical analysis by investigating employment patterns in Brazil's FABS in 2015. As Table 1 shows, in terms of total FABS employment and FABS location quotient, São Paulo is in a class of its

Table 1 Leading FABS centers in 2015

City	Share in national FABS employment (%)	Location quotient	Annual remuneration per person employed (thousands BRL)
São Paulo	26.3	1.66	64.1
Rio de Janeiro	8.7	1.23	52.6
Belo Horizonte	3.9	1.03	37.9
Brasília	3.7	1.34	78.6
Porto Alegre	3.5	1.18	33.5
Curitiba	3.4	1.23	42.5
Recife	2.1	0.93	40.1
Campinas	2.0	0.95	36.5
Fortaleza	1.9	0.87	42.7
Salvador	1.8	0.78	35.7
Brazil total	100.0	1.00	44.7

Notes: FABS = financial and business services; BRL = the Brazilian real.

Source: Based on data from Instituto Brasileiro de Geografia e Estatística (n.d.).

Table 2 Leading centers of finance, insurance, real estate and professional services, share in national employment (%) and LQ in 2015

Finance			Insurance			Real Estate			Professional services		
City	%	LQ	City	%	LQ	City	%	LQ	City	%	LQ
SP	28.5	1.79	SP	29.4	1.85	SP	20.7	1.30	SP	25.4	1.60
RJ	7.9	1.11	RJ	14.1	1.99	RJ	8.1	1.13	RJ	8.8	1.24
BR	5.1	1.85	BR	3.1	1.14	BH	4.4	1.15	BH	4.3	1.14
BH	3.6	0.94	CU	2.9	1.07	PA	3.9	1.32	PA	4.0	1.36
CU	3.5	1.30	PA	2.8	0.93	CU	3.3	1.20	CU	3.3	1.22
PA	3.0	1.00	BH	2.8	0.73	BR	3.1	1.14	RE	2.9	1.31
CA	1.7	0.80	FO	2.2	1.04	FO	2.8	1.30	BR	2.6	0.94
FO	1.7	0.80	RE	1.4	0.62	CA	2.5	1.20	CA	2.3	1.09
SA	1.6	0.68	SA	1.4	0.60	SA	2.2	0.95	SA	2.0	0.86
GO	1.5	0.92	GO	1.3	0.78	GO	1.7	1.01	FO	1.7	0.78

Notes: LQ = location quotient; SP=São Paulo; RJ=Rio de Janeiro; BR=Brasília; BH=Belo Horizonte; CU=Curitiba; PA=Porto Alegre; CA=Campinas; FO=Fortaleza; SA=Salvador; GO=Goiânia. Source: Based on data from Instituto Brasileiro de Geografia e Estatística (n.d.).

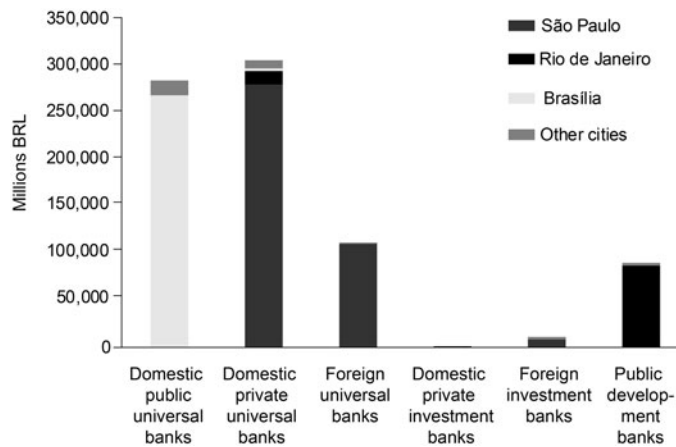


Figure 1 Bank assets (BRL millions) according to headquarters location and bank type in 2016. Note: Domestic private investment banks had assets of BRL 346 million, with BRL 206 million in banks headquartered in São Paulo and the rest in other cities. BRL = the Brazilian real. Source: Based on data from the Central Bank of Brazil (2018).

own, followed by Rio, with the third tier of financial centers made up of four cities: Belo Horizonte, Brasília, Porto Alegre, and Curitiba. Beyond these six centers, employment drops off sharply and location quotients fall below one, indicating that only these six centers specialize in FABS in relation to the national economy as a whole. Belo Horizonte has the lowest quotient of the six and has per capita remuneration in FABS much below the national average. Brasília, with a population 35 percent smaller than Belo Horizonte, has the second highest FABS location quotient after São Paulo and by far the highest average per capita FABS remuneration. São Paulo and Rio are the only other centers where remuneration is higher than the national average.

Table 2 shows the share of national employment and location quotients for different parts of the FABS complex. São Paulo has by far the highest employment and Rio comes second in all subsectors. Only these two centers have location quotients above one in each subsector. Table 2 also confirms the primacy

of the top six centers identified in Table 1, which constitute the top six in every subsector, with the exception of professional services. We also identify a degree of specialization, however. Brasília has the highest quotient in finance, Rio in insurance, Porto Alegre in real estate, and São Paulo in professional services. It is worth noting here that Brasília, as Brazil's capital city, is also the capital of financial regulatory agencies, with headquarters of the Central Bank of Brazil, National Council for Private Insurance, National Council for Complementary Pension, and National Complementary Pension Superintendence. Rio, in turn, houses the headquarters of Private Insurance Superintendence and the Securities and Exchange Commission. All of these organizations have offices in São Paulo.

To delve further into financial center hierarchy and specialization, Figure 1 shows total bank assets according to headquarters location and bank type in 2016. Banks represent the absolute majority of the finance category, with the rest being made up

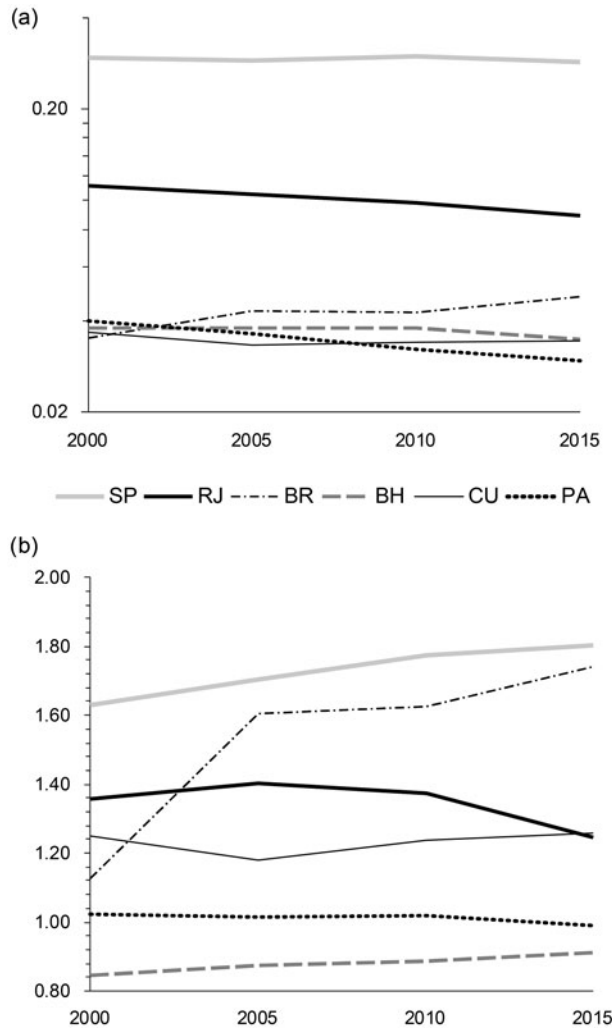


Figure 2 (A) Changing shares of national employment in finance and insurance and (B) the corresponding changes of location quotients, 2000–2015. Note: Data are presented at five-year intervals; logarithmic scale is used for shares. SP= São Paulo; RJ= Rio de Janeiro; BR= Brasília; BH= Belo Horizonte; CU= Curitiba; PA= Porto Alegre. Source: Based on data from Instituto Brasileiro de Geografia e Estatística (n.d.).

primarily of securities exchanges, brokerages, payments, and clearing and settlement organizations. There are three main types of banks in Brazil: universal banks that focus on corporate and household loans and deposits, investment banks that focus on underwriting securities issuance and advisory services, and public development banks that focus on long-term lending to companies to promote national economic development. Investment banking has low capital and asset requirements compared to other categories. Figure 1 demonstrates a clear dominance of São Paulo, Rio, and Brasília, with São Paulo leading in private domestic and foreign (both universal and investment) banking, Brasília in government-owned universal banking, and Rio in public development banking.

Brazil's financial sector has grown considerably since 2000. Employment in finance and insurance rose by about 60 percent between 2000 and 2015, and so did total employment, keeping the share of finance and insurance unchanged at approximately 2 percent. Total bank assets grew from 60 to over 100 percent of gross domestic product in the same period (International Monetary Fund 2018). In this context, Figure 2 shows the changing share of each of the top six centers in national employment in finance and insurance and their changing location quotients. This analysis does not cover real estate or professional services as we wanted to focus on data unaffected by definitional discontinuities.

The share of São Paulo in finance and insurance employment was stable around 29 percent. The

specialization of São Paulo in finance and insurance has kept increasing. The opposite holds for Rio. Its share dropped from 11.1 percent to 8.8 percent and specialization declined. Brasília has witnessed the largest growth in terms of employment share and specialization. Since 2000 it has catapulted itself from the sixth to the third largest center of finance and insurance in Brazil. Its specialization in this sector is now close to that of São Paulo. In contrast, specialization in Rio has declined below the level of Curitiba. Both Belo Horizonte and Porto Alegre saw declining shares in national employment.

An important example of Rio's continued decline concerns the consolidation of stock exchange trading, clearing, and settlement. In the late 1990s, Brazil still had nine stock exchanges. In 1999 all seven regional exchanges except for the Rio Stock Exchange (BVRJ) were assimilated by the São Paulo Stock Exchange (Bovespa; Nabarro 2016). BVRJ initially focused on trading government bonds, but in 2002 it was taken over by the São Paulo-based Brazilian Mercantile and Futures Exchange (BM&F). In 2007, the Securities

and Exchange Commission of Brazil (Comissão de Valores Mobiliários) authorized demutualization of securities exchanges and clearing houses, allowing them to become listed companies. This paved the way for the next round of consolidation. BM&F merged with Bovespa in 2008, and in 2017 the result of the merger took over Rio-based clearing and settlement company CETIP and renamed itself B3, now the only securities exchange, clearing, and settlement company in Brazil, with headquarters in São Paulo and offices in Rio, New York, London, and Shanghai.

We finish this section by presenting the geographical concentration index for FABS and its parts based on regional and state data on employment. Changes between 2005 and 2010 in real estate, professional services, and, consequently, FABS as a whole have to be interpreted with particular caution given the changing definitions of these categories. With a stable position of São Paulo, a decline in Rio, and a rise in Brasília, we probably would not expect to see any dramatic changes in the overall level of geographical concentration. Figure 3 largely

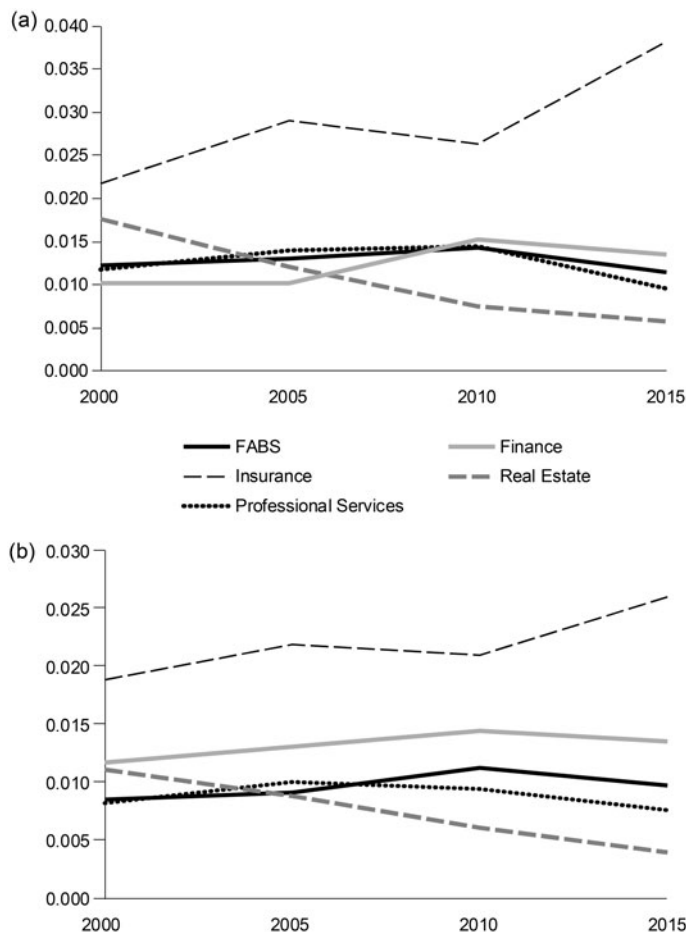


Figure 3 Geographical concentration index at (A) regional and (B) state level. Note: Formula used to calculate the index is presented in the data and methodology section. FABS = financial and business services. Source: Based on data from Instituto Brasileiro de Geografia e Estatística (n.d.).

Table 3 Domestic mergers and acquisitions according to the headquarters location of the acquirer and target (2000–2017)

City	Total deal no.	Finance	Insurance	Real estate	Professional services	Deal value (%)
Acquirers						
São Paulo	593	314	73	140	66	77.8
Rio de Janeiro	198	54	21	112	11	10.4
Brasília	56	41	12	1	2	8.5
Porto Alegre	15	10	0	4	1	0.1
Recife	7	2	0	1	4	0.1
Brazil total	999	533	112	266	88	100.0
Targets						
São Paulo	526	221	76	152	77	70.2
Rio de Janeiro	161	56	26	71	8	14.6
Belo Horizonte	35	11	9	13	2	1.7
Curitiba	31	10	8	10	3	4.9
Brasília	29	15	8	3	3	1.9
Brazil total	999	357	150	360	132	100.0

Source: Based on data from Dealogic (<http://www.dealogic.com>).

confirms this expectation, but the detail is noteworthy. In finance, professional services, and FABS as a whole we see a pattern of rising concentration in the early 2000s followed by declining concentration since 2010. Insurance, however, does not follow the trend, exhibiting a steep increase in concentration since 2010, driven mainly by employment growth in the state of São Paulo. On the other extreme, concentration in real estate kept falling throughout the period, which could be explained with real estate being the most basic of all FABS subsectors, which typically requires a relatively low level of skills.

Insights from M&As

As the example of securities exchanges shows, corporate consolidation is a major driver of spatial concentration and the territorial division of labor. Over the period from 2000 to 2017 there were 1,199 M&As involving Brazilian FABS companies with a total value of US\$117.4 billion. This value is underestimated, as data on value for approximately 35 percent of deals are missing. Of the total, 999 M&As were domestic, with both acquirer and target headquartered in Brazil. Out of 200 cross-border deals, 108 were inward (with a total value of US\$12.1 billion), with a foreign company buying a Brazilian firm, and ninety-two outward (US\$14 billion).

To analyze domestic transactions, Table 3 presents the headquarters location of the acquirer and target, with financial centers ranked according to the total number of deals. Results confirm the dominance of São Paulo. Close to 60 percent of all deals have an acquirer from São Paulo and just over 50 percent have a target there. The advantage of São Paulo is even larger in terms of deal value, as São Paulo companies are involved in deals that are on average larger than those from the rest of the country. São Paulo-based firms prevail across all subsectors of FABS. As Figure 4 shows, the dominance of São Paulo-based companies is consistent

across time. It has not declined despite the rapid growth in FABS M&A numbers in the mid-2000s.

Rio follows São Paulo in total activity and every subsector of FABS. Its gap to São Paulo is smaller with regard to real estate and insurance than in other sectors, which corroborates earlier findings on its significance as an insurance center. Brasília has a definite third position on the acquisition side. Its prominence is based largely on banking, with insurance playing a secondary part and other FABS a minor role, which also confirms findings on its specialization in banking. Considering the balance between the acquirer and target side of M&As, São Paulo is clearly a net acquirer, in terms of both deal numbers and their value. Brasília is the only other significant acquirer in terms of volume and value.

Table 4 shows pairs of financial centers involved in domestic M&As. Of the 999 deals, 460 are between firms from the same center. This is a reminder of the significance of proximity in these transactions (Zademach and Rodríguez-Pose 2009) and echoes findings of Rossi, Beaverstock, and Taylor (2007) on the role of intracity transactions in producer services. Nearly 40 percent of all deals in terms of number and nearly 60 percent in terms of value took place between São Paulo companies. Beyond their own backyard, São Paulo companies buy the largest number of firms from Rio, Belo Horizonte, and Curitiba. Rio-based companies, in contrast to those from São Paulo, target more companies from São Paulo than from their own metropolitan region, but Rio still had a deficit in mutual M&A activity with São Paulo. In this respect, our results confirm São Paulo–Rio as the main axis of Brazilian financial center activity (Santos and Silveira 2001). Interestingly, Brasília-headquartered firms took over twenty-two companies from São Paulo, whereas there were only seven deals in the opposite direction.

Moving from domestic to cross-border M&As, Table 5 shows the key headquarters locations for inward and outward deals. São Paulo-based FABS



Figure 4 Changing share of São Paulo in the total number of mergers and acquisitions in Brazil. Source: Based on data from Dealogic (<http://www.dealogic.com>).

Table 4 Domestic mergers and acquisitions based on the pairs of acquirer–target company headquarters (2000–2017)

City pair	Total deal no.	Deal value (%)
São Paulo–São Paulo	374	58.5
São Paulo–Rio de Janeiro	72	8.7
Rio de Janeiro–São Paulo	62	3.7
Rio de Janeiro–Rio de Janeiro	54	4.6
Brasília–São Paulo	22	5.3
São Paulo–Belo Horizonte	18	0.7
São Paulo–Curitiba	16	4.9
Brasília–Brasília	14	1.8
Porto Alegre–Porto Alegre	10	0.0
São Paulo–Florianópolis	9	0.0
Brazil total	999	100.0

Source: Authors based on data from Dealogic (<http://www.dealogic.com>).

firms dominate in cross-border M&As, confirming the role of São Paulo as the gateway of Brazilian finance. Importantly, their dominance is much more pronounced in outward M&As, where they represent 80 percent of the number and 94 percent of the value of deals, compared to 70 percent and 63 percent shares in inward M&As, respectively. The geography of foreign companies involved in M&A deals differs diametrically between inward and outward investments. Inward deals mostly come from companies based in leading financial centers such as London and New York. Outward deals are concentrated heavily in other financial centers in Latin America as well as Lisbon. This is part and parcel of growing Brazilian foreign direct investment in Portugal.

The only city with significant outward M&A activity in FABS beyond São Paulo is Brasília. Rio's companies are the second most common target of foreign companies, but they are not internationally expansive themselves. Although there are too few cross-border M&As for a temporal, subsectoral, or city-pair analysis, it is clear that the broad patterns of cross-border M&As are similar to those in domestic transactions. São Paulo dominates in total activity

Table 5 Cross-border mergers and acquisitions according to the headquarters location of companies involved (2000–2017)

City	Total deal no.	Deal value (%)
Brazilian acquirers (outward deals)		
São Paulo	71	93.8
Brasília	7	6.1
Rio de Janeiro	5	0.1
Blumenau	3	0.0
Curitiba	2	0.0
Brazil total	92	100.0
Brazilian targets (inward deals)		
São Paulo	73	63.0
Rio de Janeiro	14	17.6
Curitiba	4	1.1
Belo Horizonte	3	1.2
Brasília	2	0.3
Brazil total	108	100.0
Foreign acquirers (inward deals)		
London	11	N/A
New York	10	8.2
Tel Aviv	10	2.0
Paris	8	5.7
Santander	7	7.3
Brazil total	108	100.0
Foreign targets (outward deals)		
Buenos Aires	13	7.7
Santiago	11	13.5
Mexico City	7	N/A
Bogota	7	6.9
Lisbon	5	4.5
Brazil total	92	100.0

Source: Based on data from Dealogic (<http://www.dealogic.com>).

and as a net acquirer. With investment in FABS coming from around the world, it is developing its presence as a regional financial center in Latin America. The Rio-based FABS sector is a net target, a process that reflects and contributes to its gradual decline as a financial center. Brasília emerges as the third most important financial center of Brazil.

Conclusions

We set out to explore the territorial division of labor of Brazil's financial system by examining the patterns and trends of its financial center hierarchy,

specialization, and geographical concentration since 2000. We focused on data on employment and M&As in FABS, complemented where possible with data on remuneration and bank assets. Our analysis confirms findings documented in prior research about the dominance of São Paulo, the secondary role of Rio, and the existence of a group of third-tier financial centers. We also offer a number of original contributions. First of all, we show that since 2000 São Paulo has consolidated its dominance as Brazil's primary financial center, with market for corporate control as an important channel of this consolidation. The finding that São Paulo has maintained its share in FABS employment and M&As is remarkable considering that Brazil's regions and secondary cities, as well as its FABS sector, have grown fast. Second, we present strong evidence that Rio's decline as a financial center, which started more than fifty years ago, has continued in this century. Third, our findings indicate that since 2000, Brasília has emerged as the third most important financial center of Brazil. Fourth, the dominance of São Paulo across FABS notwithstanding, there are signs of a division of functions, with Rio's specialization in insurance and Brasília's dependence on large government-owned banks.

Much research could be done to follow up on these results. Although we examine M&As as a major mechanism shaping the geography of financial centers, our analysis is largely exploratory, leaving room for investigating other mechanisms, including the creation of new FABS firms, the geography of demand for FABS services, corporate location strategies, capitalization of financial institutions, regulation, innovation, and so on. We triangulated different types of data and methods to make our analysis as robust as possible, but no single article can do justice to the complexity of the economic, social, political, and cultural factors affecting the evolution of financial centers. Although we indicate that Brazil's FABS might be following an inverse U-shaped pattern in terms of their geographical concentration and might have recently crossed the point of maximum concentration, more data are required to prove that finding.

Another possible extension of our research involves international comparisons. Brasília's dependence on government-owned banks and regulatory agencies might resemble the case of Beijing. The dynamic relationship between São Paulo and Rio could be related again to the experience of Canada, Australia, and South Africa, highlighting important similarities and differences. The current primary center in these three countries and Brazil is the center of international finance and capital markets (with headquarters of exchanges and investment banks). Melbourne, however, is nearly equal to Sydney demographically and economically, retains the headquarters of two of the four large domestic

banks, and is the center of the superannuation industry. Montreal as a financial center has fallen behind Toronto much more than Melbourne has fallen behind Sydney, and Toronto is now the undisputed center of both international and domestic finance in Canada (Wójcik et al. 2018). A similar claim is valid in relation to Johannesburg versus Cape Town in South Africa, even though in terms of population Cape Town does not lag far behind Johannesburg. Although a systemic comparative analysis is in order, it appears that in Brazil the shift at the top of the financial center hierarchy has gone further than anywhere else. ■

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