

METROPOLITAN GEOGRAPHIES OF ADVANCED PRODUCER SERVICES: CENTRALITY AND CONCENTRATION IN BRUSSELS

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ABSTRACT

The literature on global and world cities points towards a growing concentration of advanced producer services (APS) firms in a restricted number of cities, who execute strategic command and control functions over globalised capitalism. However, relatively little attention has been paid to how APS are located within such cities. We argue that APS locations within cities are related to two partly independent processes: localisation economies and centralisation dynamics, which result in patterns of concentration and centrality superimposed on socio-historical constructions of urban space. Utilising data from a national company register, we analyse the local insertion of APS firms in the Brussels' metropolitan area in light of these two processes. The outcome reveals that only some of Brussels' APS firms are concentrated and central, which we suggest to be the most strategic and internationalised APS functions.

Key words: advanced producer services; Brussels; spatial proximity; intra-metropolitan economic geography; location factors; path dependence

INTRODUCTION

Over the past decades world cities research has documented the deepening agglomeration of advanced producer services (APS) – conventionally covering financial services, legal services, accountancy and audit, management consultancy, and advertising – in a limited number of cities (Sassen 1991; Taylor & Derudder 2016). A new international division of labour, seeing manufacturing activities relocate to low-wage countries, and increased capital mobility has led to the globalisation of economic activities, captained by multinational firms (e.g. Fernandez & Hendrikse 2015). Accordingly, APS intermediation functions have increasingly become indispensable for the functioning of

the global economy (Sassen 2016; Taylor *et al.* 2014). Multinational corporations depend upon APS firms to organise (i.e. finance, structure, promote, etc.) their global activities (Parnreiter 2017). This has turned certain cities into 'obligatory passage points' for global capital (Bassens & van Meeteren 2015), with APS firms offering crucial corporate command and control functions (Friedmann and Wolff 1982; Sassen 1991). The rise of financialisation has deepened patterns of hierarchy and stratification in the world city archipelago, as APS firms enter that space when assisting their clients in financial accumulation strategies (van Meeteren & Bassens 2016). More narrowly defined, the formation of financial centres, as concentrations of financial(ised) capital, expertise and power (Wójcik

2013), have become indispensable in managing global economic activities.

Locally, the reproduction of global capitalism can be organised in many ways (Massey 1995, 2007), implying that the agglomeration of APS firms in a limited number of cities at the global scale is supported by complex geographies at the urban level, mediated and shaped by the structure of the city and embroiled in wider processes of metropolitanisation (Brenner 1998). Historically and geographically-specific circumstances have contingent effects (Massey 1995), meaning that location patterns need to be interpreted in light of social, historical and economic dynamics in a specific urban context. In other words, local APS geographies may be influenced by the circumstances that previously structured the place. The insertion of globally-integrated APS firms illustrate how globalisation is 'territorialised' in world cities – a process moderated by the pre-existing socio-spatial structure of the city (Kesteloot 2005). Between the local and global, scholars have noted the importance of other analytical geographical scales, such as 'mega-city regions' (Hoyler *et al.* 2008) or 'the Nation-State' (Taylor 2006). The existence of a primary city shows the importance of the national scale (Polèse 2005), and especially in the services sector where actors typically settle in the main city of the country.

Despite the large literature highlighting global APS functions being located *across* a range of world cities, few papers zoom in on geographical APS organisation *within* cities (exception made by Amin & Thrift 1992; van Criekingen *et al.* 2005 on the highly uneven impacts of globalisation at the local level). Although it is recognised that APS firms agglomerate in world cities, the scale at which to consider agglomeration is not clearly defined. Yet we observe that APS firms do not just locate 'anywhere' in the city: examples from different world cities suggest that APS agglomeration typically occurs in specific areas, for instance in the City of London or 'La Défense' in Paris. This issue raises questions about the processes that lead to APS agglomeration within metropolitan areas.

On the one hand, APS firms agglomerate because they need to be close to each other to manufacture their intermediary services for globally operating firms (Sassen 1991). It is then the very nature of APS functions that requires proximity

to other APS firms. Proximity produces localisation economies, namely, benefits from the concentration of an industry in one place (Moulaert & Djellal 1995; Parr & Budd 2000). The concentration of firms within cities can thus be conceptualised as an *endogenous* process, hence inherent to the activities of the firms, and is partly independent from where this concentration actually takes place in the city. On the other hand, APS firms locate in a pre-existing urban fabric. In general, central places within cities tend to house higher densities of professional workers and urban activities, are more accessible with public transport (Aguiléra 2003), function as innovative milieus (Baró & Soy 1993), and benefit from higher prestige (Shearmur & Alvergne 2002). APS firms may require such characteristics to different degrees, whatever the location of other APS firms, and hence be ready to pay the price for the locational advantages related to them. APS central locations are then understood to be linked to the characteristics of centrality itself. This can be viewed as an *exogenous* process that shapes APS agglomeration.

We therefore argue that the location of APS firms *within* world cities is related to two partly independent processes: localisation economies that lead to the concentration of firms conducting similar activities (*endogenous* to APS firms) and the search for centrality in an inherited urban core-periphery divide (*exogenous* to APS firms). We argue here that this search for centrality and/or concentration within cities depends on the nature of the firms, their activities and the geography of the pre-existing city. In practice, it is true that when APS are centrally located, they are concentrated. We take this limitation into account by assuming that in the case of central places both processes are at play, and that we cannot isolate to what extent which one is at work.

This paper first seeks to connect literatures on world and global cities to the large and insightful literature on metropolitanisation processes. Second, it offers a methodology to empirically measure centralisation and concentration processes of APS firms, which might be useful for research elsewhere. Third, it seeks to contextualise APS geographies for the particular case of Brussels, adding more empirical flesh to the bones around how Brussels' global city functions are rooted in

the city. The remainder of this paper is structured as follows. We first discuss the key drivers of agglomeration processes in the following section. Subsequently, the third section offers a methodological discussion, including a discussion of our data sources, their operationalisation, the area of study and the indicators used. We then offer our empirical study of the Brussels' case in the fourth section and reflect on our findings in the fifth section for three APS sectors (banking, accountancy, and law), illustrating distinct patterns of centrality and concentration. We end our paper with a set of concluding reflections.

METROPOLITAN GEOGRAPHIES OF APS FIRMS

Exogenous processes: centralisation and new forms of centrality – Traditionally, central urban areas are viewed as attractive locations for APS firms because of low public transport costs (Buisson *et al.* 2001; Gaschet & Lacour 2002; Lennert & van Criekingen 2003), size of the market (Baró & Soy 1993; Aguiléra 2002), a large high-quality labour pool (Coffey *et al.* 1996; Gaschet & Lacour 2002), proximity to political functions (Aguiléra 2002; Gaschet & Lacour 2002), and prestige (Coffey *et al.* 1996; Gaschet & Lacour 2002). Given that central places are relatively expensive, it is important to emphasise that APS firms typically can afford the high rents (e.g. Baró & Soy 1993; Wang *et al.* 2016). However, since the 1980s the shift of APS firms to peripheral urban areas has sparked a debate about the nature of *centralisation*. In US cities, this relates to the declining quality of urban infrastructure and accessibility issues, undercutting the attractiveness of the centre. In the model of the 'edge city' proposed by Garreau (1991), peripheral poles provide all facilities the central city would offer without the congestion-related costs. Accordingly, central APS activities move there, or new APS activities locate in these peripheral poles. The Canadian case study conducted by Coffey and Shearmur (2002) points to the role of high-order services like APS as principal components of edge cities in the transformation of the metropolitan structure. This implies

that even high-end services deem central areas less attractive and instead choose for suburban areas (Halbert 2005; also see Fernandez 2011, on Amsterdam).

Existing studies suggest that central business districts (CBDs) indeed host less APS firms than before. However, how decentralisation processes shape up across different contexts remains an open question. In fact, central areas continue to host APS firms, but their growth may be less strong compared to peripheral areas. One survey about the Montreal metropolitan area (Coffey *et al.* 1996) showed patterns of spatial stability rather than decentralisation. However, a subsequent study on Montreal found growth in peripheral poles, illustrating a *relative* but not absolute decline of the centre (Coffey & Shearmur 2002). Other authors argue that decentralisation strategies of APS firms can be explained by degrees of specialisation. In the Paris metropolitan region, the centre grows towards neighbouring municipalities, which increases the selection of high-value added APS activities in the centre (Shearmur & Alvergne 2002), resulting in a logic of complementarity rather than competition between different types of urban spaces and functions within the metropolitan area (Lennert & van Criekingen 2003). Across contexts, therefore, central areas maintain some of their attractiveness limiting decentralisation processes.

That said, not all APS functions require the same degree of centrality. Aguiléra (2002) formulates the hypothesis that APS activities in the periphery are not necessarily the *same* as central activities. Some sectors seem more centralised than others, such as advertising and management consultancy in Barcelona (Baró & Soy 1993), or financial services (Coffey *et al.* 1996) and legal services in Montreal (Shearmur & Alvergne 2002). However, although it is difficult to generalise by sector, specialised APS functions are more concentrated than routine APS services, and remain largely located in city centres (Aguiléra 2002). This highlights the need of differentiating between different APS functions instead of sectors, as their variegated geographies transform the structure of the metropolitan area. Shearmur and Alvergne (2002) suggest that combinations of

concentration and dispersal can be explained through the interlocking patterns of market provision, the internal structure of services, and the nature of each sector. To be present at prestigious locations has in itself become an important explanatory factor, as reputation is very important to leading APS firms. A prestigious location suggests quality to clients and partners (Shearmur & Alvergne 2002). Yet not all prestigious locations are central. For instance, La Défense in Paris has gained its reputation as a business district but has been planned *extra muros*. Because of their intermediary functions, APS firms look for characteristics of places associated to central locations (prestige, density, accessibility, amenities, etc.), but to various degrees, depending on the nature of specific APS functions. Nevertheless, as the example of La Défense shows, the inherited core-periphery structures of cities is not fixed, neither in space nor in time. Instead, it is influenced by past and present developments that (re)structure the urban fabric, including the locational strategies of APS firms. We now turn to endogenous processes of agglomeration through the concept of localisation economies.

Endogenous processes: localisation economies –

A second way to explain the mechanisms leading to APS agglomeration relates to the benefits gained from proximity with other APS firms that are known as localisation economies. The nature of APS work requires high-skilled staff (Baró & Soy 1993). However, within a given metropolitan area, the presence of a skilled labour pool seems a weak locational determinant, as firms normally have access to the entire metropolitan workforce, regardless of their location (Coffey *et al.* 1996; Aguiléra 2003). What emerges from the world cities literature is that APS provision depends on close physical proximity between various APS firms and sectors, even though the specific economic geographies supporting such forms of clustering often remain implicit in these discussions. Storper's (1997) conceptualisation of traded and untraded interdependencies is useful to understand the drive towards APS proximity. Traded interdependencies link firms to a location because of market relations with suppliers, partners and clients. Baró and Soy (1993) point to the need for a high degree

of cooperation between APS customers and suppliers. In their role as intermediaries to provide tailored services, APS firms require to be close to their partners (Sassen 2016). However, Aguiléra (2003) points towards a relaxation of the need for service providers to locate near their clients because of the size of the market area and the increasing use of ICT technologies. Untraded interdependencies drive APS firms to specific locations because of the more subjective and informal dimensions of their activities. Firms, and especially APS firms, develop their activities based on trust, generating the know-how and know-who in specialised matters. These informal links between firms are built on immaterial aspects such as perceptions, attitudes, habits, and conventions, marking particular business cultures in place.

Three implications can be derived from the importance of untraded interdependencies. First, it is key for APS professionals to have face-to-face contact with clients, competitors and other industries (Coffey & Shearmur 2002), although the importance of face-to-face contact may vary depending on the APS sector (Aguiléra 2003). Second, although many activities can be coordinated from afar, not all kinds of knowledge is easily transmitted over long distances, making it 'stick' to specific places (Clark & O'Connor 1997; Gertler 2003; Clark 2005). Such tacit forms of knowledge are not easy to codify and tend to circulate within social circles of key economic actors (Asheim *et al.* 2007). Third, the concentration of activities in a specific location creates a place where future informal networks and exchanges between professionals are likely to be rooted. The proximity of similar and related industries and socialising spaces will be determinant for informal encounters and business networks (Coffey *et al.* 1996; Coffey & Shearmur 2002). This also explains why, despite the growth of ICT, CBDs or other specialised inner-city districts remain attractive 'milieus' for APS, either in finance or other business services (e.g., Pandit *et al.* 2016 on the City of London).

In sum, distinct processes structure geographies of APS within cities. Our point of departure was that APS increasingly agglomerate in world cities. Within cities however, APS firms can be more or less concentrated – because their need for proximity is varied

Table 1. *APS sectors in the Brussels metropolitan area.*

| | Total employment | Share of employment in firms ≥ 50 p. (%) | Number of firms | Share of firms with 0–1 employees (%) | Share of each sector in Brussels employment (%) | Share of APS Brussels employment in national employment (%) |
|------------------------|------------------|---|-----------------|---------------------------------------|---|---|
| Financial services | 44,900 | 73.51 | 4,168 | 76.68 | 5.04 | 46.97 |
| Insurance | 17,439 | 90.94 | 543 | 69.06 | 1.96 | 56.54 |
| Real estate | 8,874 | 12.67 | 5,328 | 89.94 | 1.00 | 27.95 |
| Management consultancy | 17,534 | 26.67 | 8,774 | 92.74 | 1.97 | 41.49 |
| Legal services | 10,898 | 6.48 | 6,933 | 92.38 | 1.22 | 33.18 |
| Advertising | 8,757 | 30.41 | 3,034 | 88.96 | 0.98 | 45.20 |
| Accountancy and audit | 8,495 | 29.56 | 4,344 | 90.26 | 0.95 | 26.80 |
| Total | 116,897 | 51.80 | 8,775 | 89.13 | 13.11 | 41.11 |

Source: Employment figures from DGSIE (2014).

– and more or less central. Empirically, it will not always be possible to distinguish from which processes APS agglomeration results, since the concentration of certain APS activities in the centre necessarily results in physical proximity. In the following sections, we propose to measure concentration and centrality for different sorts of APS activities in the Brussels metropolitan area. We then link the observed diversity on both dimensions with the nature of activities. But first we present the data and indicators used to study the processes.

METHODOLOGY: DATA, SPATIAL FRAMEWORK AND INDICATORS

This section presents the dataset used to study APS location patterns within the Brussels' metropolitan region, and our indicators for centrality and concentration.

Description of the data – Our sample of APS firms has been sourced from the national company register. The main source for labour market data was the *DBRIS* company register (DGSIE 2014) updated until 2014. This company register lists all companies in Belgium with the number of full and part-time employees (counted as full time equivalent) for each of their business establishments and per type of economic activity. Economic activities are classified according to the statistical classification of economic activities in the European Community¹ (NACE). We understand APS firms as services that serve intermediate rather than final demand, and follow the five APS sectors conventionally studied in the world cities literature (see Taylor & Derudder 2016). With regard to financial services, we have also included figures on insurance and real estate, both of which are intimately entwined with finance, and are cumulatively known as the FIRE sector. As highlighted in the introduction, the other APS sectors are legal services, accountancy and audit, management consultancy, and advertising.

The APS sectors account for 117,000 jobs in the Brussels metropolitan area (13%), with finance alone being the largest sector (5%)

(Table 1). About half of the national employment in finance, insurance and advertising services is located in Brussels. Finance and insurance are mostly composed of large firms (over 50 employees), whereas legal services are comprised of just a few large enterprises. For all APS sectors we observe a high share of small firms (0–1 employees), which are mostly self-employed professionals.

In spatial terms, the Brussels metropolitan region has no official administrative delimitation. For various reasons, including functional and morphological urban sprawl, it is paramount not to limit the analysis of Brussels to the 19 municipalities of the Brussels Capital Region (BCR), which is considered the core of the labour pool, but also include peripheral municipalities in Flanders and Wallonia. Although there are numerous spatial delimitations possible (such as Riguelle *et al.* 2007), this does not change much in the case of Brussels' APS because the essential employment dynamics are playing out in the central area. We have opted for a delimitation for the Brussels metropolitan area, which is based on a population density threshold of 650 inhabitants per km² (ESPON project 2010; Vandermotten 2014) and the degree of suburbanisation (van der Haegen *et al.* 1996). Thus defined, the Brussels metropolitan region hosts 25.7% of the total APS employment of Belgium, 62.9% of which is located in the BCR.

Centrality and concentration – Centrality has been calculated by using a time-distance measure from any statistical sector of the Brussels metropolitan area to the centre. The centre is approximated by three centrally-located transport nodes (i.e. the Arts-Loi metro station, North Station, and South Station). Time-distance is measured two times of the day (8:30 and 03:00 AM), by public transport and car, from the centroid of each statistical sector to the three transport nodes. The advantage of using time-distance to the centre is to include congestion effects, and thus better reflect the real 'accessibility' of the city. The exact time-distance is an average of the 'google time' distance toward each of the three transport nodes and a weighted average of public transport and car, considering the real transport means used in each district.²

Meanwhile, concentration has been calculated by means of a concentration index. Concentration is theoretically independent from centrality, since specific activities can be agglomerated either in central or peripheral parts of the city. To calculate this, we use individual firm locations and their size in terms of employment. The concentration index is based on a Gini coefficient, broken down into the spatial and non-spatial components (see spatial Gini and non-neighbour Gini in Table 2). The Gini coefficient is one of the most common indices to examine the degree of overall inequality in a given dataset (e.g. Yitzhaki 1979). The general formula is:

$$G = \frac{\sum_{i=1}^n \sum_{j=1}^n |x_i - x_j|}{2n^2 x'} \quad (1)$$

where x_i is the value for variable x observed at location $i = [1, 2, \dots, n]$ and:

$$x' = \frac{1}{n} \sum_i x_i,$$

The Gini coefficient ranges from 0 to 1, where 0 implies perfect equality (all locations having the same proportion for a given variable) and 1 implies perfect inequality (one location having the highest possible proportion while the rest having zero).

The Gini coefficient is a global statistic to measure the degree of inequality in a given dataset but tells us little about the modalities of this inequality. We hence applied a spatially decomposed version of the Gini index as proposed by Rey and Smith (2013). This new index examines both spatial inequality and spatial autocorrelation. The general equation (1) consists of two terms:

$$G = \frac{\sum_{i=1}^n \sum_{j=1}^n w_{ij} |x_i - x_j|}{2n^2 x'} + \frac{\sum_{i=1}^n \sum_{j=1}^n (1 - w_{ij}) |x_i - x_j|}{2n^2 x'}. \quad (2)$$

In this formula, w_{ij} are the spatial weights expressing the neighbour relationship between locations i and j . The interpretation of this

formula is that as positive spatial autocorrelation increases, the second term (the non-neighbour component) should grow relative to the first (the spatial component). In the case of negative spatial autocorrelation, the effect should be the opposite. To interpret the results for detecting spatial autocorrelation with the decomposed Gini, we thus need to focus on the non-neighbour component. We calculated the indexes considering different ranges ($n = 10, 20, 30, \dots$) of neighbours (firms) for each APS sector, meaning that for each firm, we considered the n nearest neighbours. Since results appeared to be similar across ranges, the analysis will only show results based on the 50 neighbours range.

RESULTS: METROPOLITAN GEOGRAPHIES OF APS SECTORS IN BRUSSELS

As outlined, to estimate the extent to which endogenous and exogenous processes lead to APS agglomerations we use the dimensions of concentration and centrality. Hence, we discuss APS agglomerations in light of continuity and change of the spatial makeup of the Brussels metropolitan region. This allows us to link the observed location patterns to the nature of the selected APS sectors.

Centrality – We have calculated a time-distance from each statistical APS sector of the metropolitan area to the geographical centre. We then classified statistical sectors according to their time-distance and, for each time-distance, we calculated the number of jobs in all kinds of APS. The results show that APS firms locate more centrally than other activities: 36% of APS jobs are within 15 minutes from the centre vs. 26% of jobs in general (Table 2). At the same time, APS are underrepresented in the more peripheral areas of the city: there is a lower proportion of APS jobs located over 20 minutes from the centre as compared to the average. Using different thresholds or central reference points did not significantly affect our results.

However, not all APS activities require the same degree of centrality. Therefore, we categorised each APS sector according to its proportion of jobs included within the 15 minutes

Table 2. *Location of APS jobs in the Brussels metropolitan area, according to the time-distance to the centre.*

| Time-distance | Number of jobs in APS | Share of jobs in the time travel circles to the centre | |
|---------------|-----------------------|--|----------|
| | | APS | All jobs |
| <10 min | 9,775 | 9.86% | 7.10% |
| 10–15 min | 27,113 | 27.36% | 19.70% |
| 15–20 min | 15,325 | 15.46% | 15.10% |
| 20–25 min | 15,694 | 15.84% | 17.10% |
| 25–30 min | 9,621 | 9.71% | 9.90% |
| 30–40 min | 11,145 | 11.25% | 15.30% |
| >40 min | 10,427 | 10.52% | 15.80% |
| Total | 99,100 | 100.00% | 100.00% |

Source: Employment figures from DGSIE (2014); Time-travel distance from each district to central areas is calculated from google maps; own calculations.

time-circle and its proportion of jobs in the over 30 minutes time-circle. This allows distinguishing profiles of very central or very peripheral APS activities (Figure 1). As it turns out, more than half of the activities in finance and insurance are located less than 15 minutes away from the centre, making these the most centrally-located APS activities. On the contrary, more than half of the jobs in accountancy and audit are located more than 30 minutes away from the centre, showing a very peripheral profile. In between the two extremes, the other APS sectors reveal average profiles, with legal services showing the second most central APS profile, housing about a quarter of its activities within 15 minutes from the centre.

Concentration – Table 3 shows the results of the concentration index calculations. The Gini coefficient, which examines overall inequality in the dataset, is broken down into a spatial (gw) and non-neighbour component (ns). The highest Gini levels are the most spatially-concentrated sectors, led by finance and insurance; the lowest levels characterise legal services, with small and medium law practices dispersed throughout Brussels. The increase of the non-neighbour component (see methodology) means that the observations are correlated to themselves: there are contiguity effects between the observations,

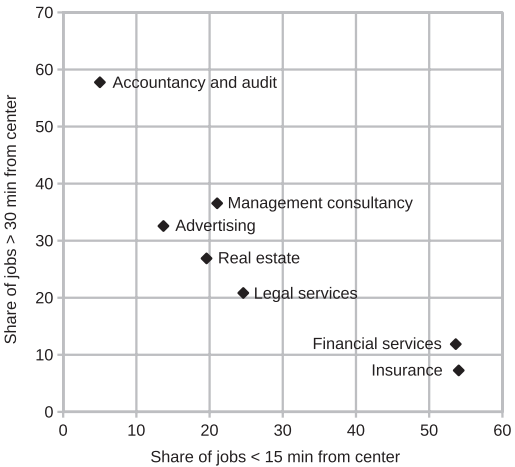


Figure 1. *Centrality of the APS sectors in Brussels.*

implying that the spatial distribution is made of homogenous observations. In other words, each district is very similar to its neighbour for its APS job distribution.

Combining concentration and centrality measures – By combining measures of concentration *and* centrality, we offer a systematic approach to understand APS agglomeration in metropolitan areas. Figure 2 shows the results for Brussels. Finance and insurance emerge as very concentrated and central sectors. In contrast, accounting is very peripheral and moderately concentrated. Legal services and real estate are the most spatially dispersed, and moderately central. However, we need to go beyond the idea that merely ‘market forces’ drive agglomeration, and also account for policy decisions, path-dependencies, and wider metropolitanisation processes that have also shaped the geographies of APS. In Brussels, APS geographies have emerged amidst ongoing suburbanisation processes of economic activities which commenced in the 1980s. Since then the key economic developments, in absolute as well as relative terms, have unfolded in suburban spaces, close to the Brussels-Zaventem airport in particular (Lennert & van Crielingen 2003). Business parks were developed at the edge of the BCR, as well as outside its administrative limits, generating territorial competition between the BCR, Flanders, and Wallonia, in the absence

Table 3. *Spatial Gini of the APS sectors in Brussels.*

| APS sector | Gini | Spatial Gini | Non-neighbour Gini |
|------------------------|-------|--------------|--------------------|
| Insurance | 0.908 | 0.020 | 0.888 |
| Financial services | 0.884 | 0.003 | 0.881 |
| Advertising | 0.681 | 0.003 | 0.678 |
| Management consultancy | 0.542 | 0.001 | 0.541 |
| Accountancy and audit | 0.541 | 0.001 | 0.540 |
| Real estate | 0.464 | 0.001 | 0.463 |
| Legal activities | 0.424 | 0.001 | 0.423 |

Note: Scores near 0 mean that the distribution is very equal; 1 means very unequal.

Source: Employment figures from DGSIE (2014); own calculations.

of a federal metropolitan (planning) authority.

Although Brussels shows a story of suburbanisation processes, when observing the Brussels metropolitan area (Figure 3(a)), it appears APS agglomerate mainly within the Brussels Capital Region proper (Figure 3(b)). A few locations with a large employment in APS are visible in the north-eastern peripheries just outside the BCR, close to Zaventem airport. Further south, other large employment places can be noted across the Walloon regional border, with La Hulpe revealing high employment with a high proportion of APS firms. Within the BCR, most APS firms locate near or in the historical centre of the city, dubbed ‘the Pentagon’. Expanding from the centre, they are distributed in the nearest neighbourhoods towards the north (North District), and the east (European District). APS firms also locate in the southern limits of the BCR, along the main boulevards.

DISCUSSION

Economic activities take place in a historically constructed space, where neighbourhoods have over time acquired different levels of prestige, have been fitted with different amenities, and so forth. In this section, we discuss the processes of concentration and centralisation within the urban fabric of Brussels by foregrounding three examples: financial services, legal services, and accountancy and audit.

Finance appears as the most concentrated and central APS sector (Figure 2). Leaving aside branch networks, most financial jobs concentrate in large companies located in the Brussels core, settled in large and prestigious

buildings. In this very strategic activity, concentration facilitates strong interactions and easier face-to-face contacts between the different financial actors, notably the major ones (i.e. BNP-Paribas-Fortis, Belfius, ING, KBC), while centrality is associated with prestige, links to political functions, etc. Crucially, these location patterns are largely inherited. That is to say, the Brussels-based banking sector has been closely entwined with political functions since the establishment of the Belgian nation state in 1830. The history of Société Générale is exemplary in this respect. Founded before Belgian independence by the King of the Netherlands and financiers and merchants of Brussels, the Société Générale gradually developed as the prototype of the universal bank shaping Belgian capitalism at that time. Another illustration is the decisive economic role that the Société Générale played in Congo. The bank acquired a hotel in ‘Montagne du Parc’, in the Brussels’ epicentre of political power, at equal distance of the King’s Palace and the ‘Palais de la Nation’ – hosting the federal parliament (Mabille 1993). The heir of Société Générale, BNP-Paribas-Fortis, is still headquartered at the same place today.

In contrast, another major Belgian bank, KBC, moved its seat along the canal in the West of Brussels, close to the CBD of the North District (Figure 3). The North District was built in the 1960s following a large redevelopment plan. With the ‘Manhattan Plan’ pre-existing neighbourhoods were demolished to create a new CBD aimed at international business (Martens 2009). The CBD in the North District, which was planned by public authorities to become the image of modernity in

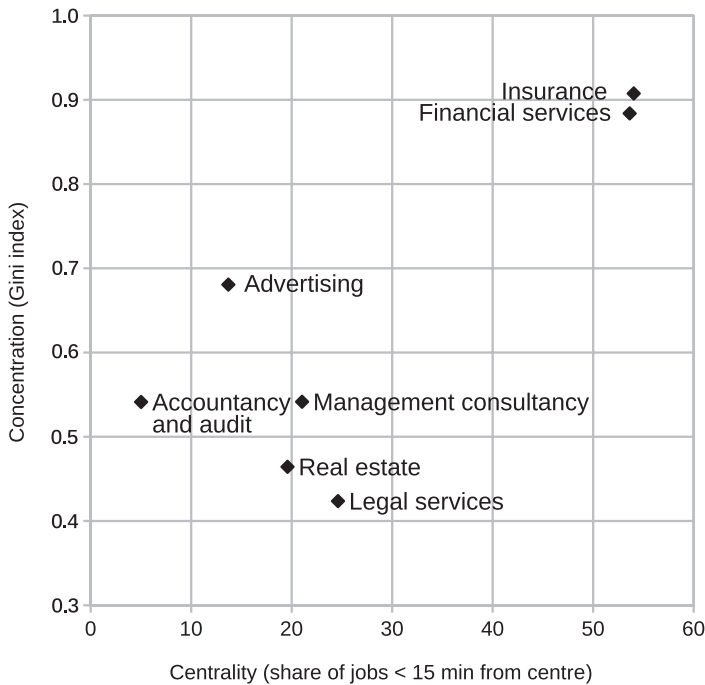


Figure 2. Centrality and concentration of the APS sectors in Brussels.

Brussels (De Beule & Dessouroux 2009), has not held its promises: the crisis of the 1970s halted its development and only a part of the initial plan has been realised. In these conditions, businesses did not move to this new neighbourhood. Ever since, the downsized developments have mainly been occupied by administrative functions or (formerly) state-owned companies, such as the Belgian telephone company (Proximus), while APS presence, though significant, is mostly a result of a few financial-sector giants, including Belfius, KBC, BNP Paribas, and Euroclear (Doornaert *et al.* 2016).

A radically different example is the accountancy and audit sector. As shown in Figure 2, this sector has a peripheral geography, and is less concentrated than financial services. This pattern reveals the double nature of the sector (cf. Table 1): a large number of small actors, largely self-employed accountants and auditors, are dispersed over the city, while the ‘Big Four’ accountancy and audit giants are located in the North-Eastern periphery near the airport. This peripheral location has hosted large and ongoing development of

offices since the 1960s, often through the creation of business parks around the airport, which accelerated over the last 20 years. If airport proximity may have initiated this movement, facilitating accessibility at European and global level, further developments stem from the need of agglomeration in the services sectors, and the supply of large real estate projects. Big players in accountancy illustrate this point: accounting activities require centrality not in geographical terms but in terms of accessibility and international connectivity (De Wolf 2017), which corresponds to favouring a peripheral location close to the airport (Figure 3), resulting in peripheral APS concentration. Such location strategies are also supported by the strategic vision plan of the Brussels airport (Brussels Airport n.d.). For instance, the Belgian head office of Deloitte was planned there.

Finally, legal services illustrate a third location pattern: relatively more dispersed but looking for central locations (Figure 2). Here again, the duality of the sector reflects the dispersal of small actors related to local market, while we observe the concentration

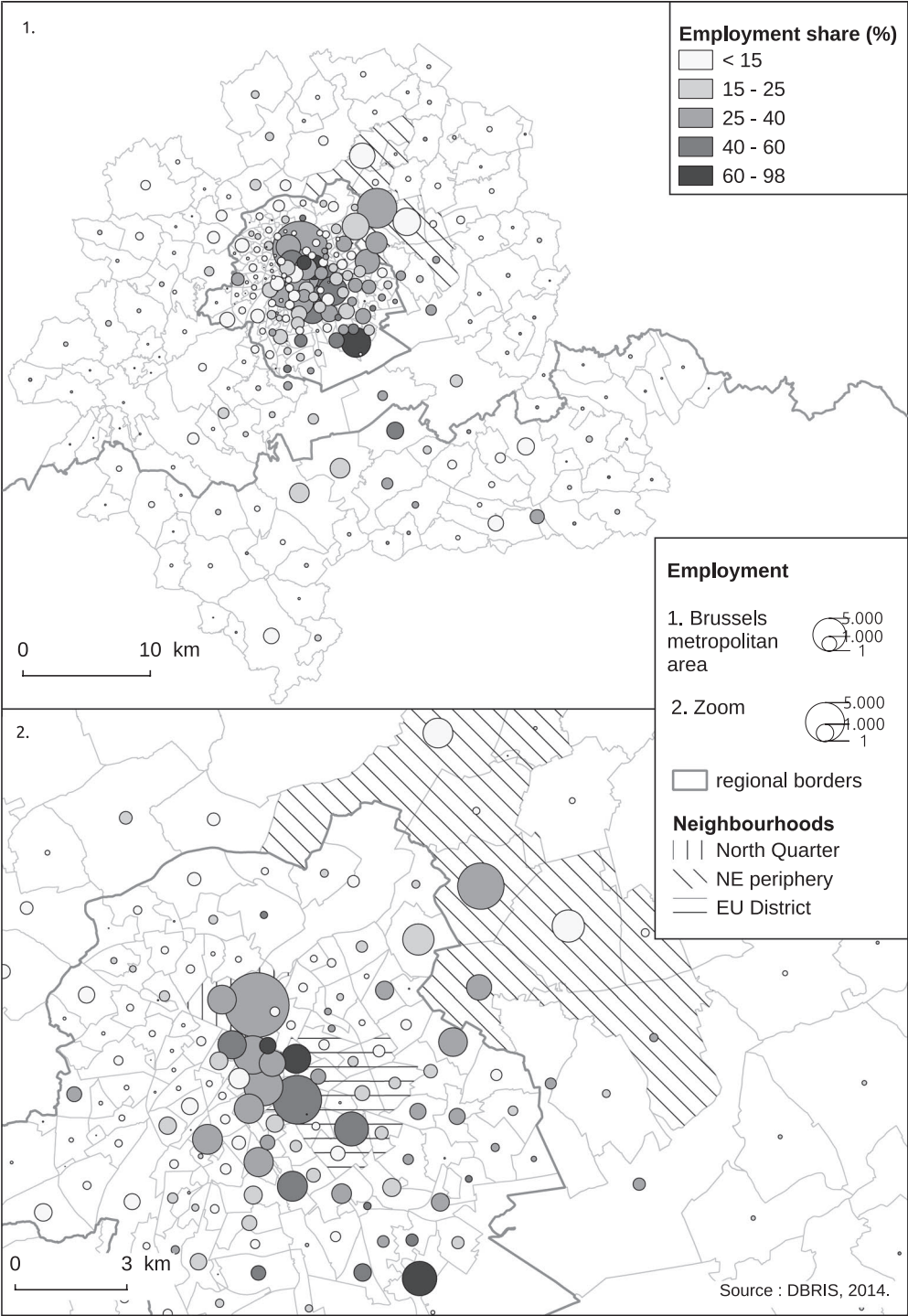


Figure 3. Location of the combined APS sectors in the Brussels metropolitan area, 2014.

of bigger law firms along the 'Avenue Louise' as well as in the EU District (in line with van Criekingen *et al.* 2005). In the latter case, proximity to European institutions seems the driving factor explaining their locations. Compared to other European cities, Brussels has a high proportion of international legal activities (van Criekingen *et al.* 2007). This specificity is linked to the EU-related status of Brussels as a regulatory powerhouse. Elmhorn (1998) classifies Brussels as one of the most important political capitals given the growth of the international functions in the city and the upgrading of its position in the European hierarchy. APS in Brussels are expected to be mostly linked to Brussels political functions. The 'European District' (Figure 3), initially the 'Leopold District', was developed in the 1840s, being the first planned outer expansion of Brussels. About a century later, the district had become quite central in the city. A profound change was provoked with the implantation of the European Community buildings in the 'Leopold district' (Lundy 2017). The construction started in the 1950s and lasted for 30 years, having as consequence a radical modification of the district. It is now mainly shaped by the activities of the European institutions and activities (in) directly related to them. Housing has been replaced by offices with EU institutions and others attracted by the institutions' power – lobby consultancies, law firms, and public affairs and relations agencies (Kuus 2011; Lundy 2017). Vandermotten and Noël (2004) note that Brussels only concentrates a small number of multinational firm headquarters, reflecting Brussels' low weight as concentration of economic power in the Belgian economy. Having said this, as elsewhere, APS firms in Brussels also cater to the Belgian market, illustrating that Brussels does function as a specialised service centre on the national scale (Hanssens *et al.* 2013).

Three implications emerge from the analysis. First, some APS such as financial services or insurance can afford to pay higher rents to keep prestigious locations, or keep close spatial proximity to regulators. Second, not all APS sectors concentrate in central areas. Some APS are non-central but still concentrated. This illustrates that our conceptual disentangling

allows us to detect new centralities, where APS firms benefit from localisation economies, though being located in suburban rather than central places. This means that we find agglomeration outside central areas, for instance accountancy and audit. Third, we have to keep in mind that to interpret the spatial concentration versus dispersal pattern, an understanding of concentration in terms of the structure of a given sector is paramount (cf. Table 1). Some sectors, such as finance in Brussels, are highly concentrated around a limited number of big players. In contrast, for accountancy and law, the existence of a more dispersed organisation based on a large number of small and medium-sized firms is evident. Spatial differences are thus also related to the nature of APS activities, and in particular the clients and markets they serve: higher numbers of smaller firms may be related to the importance of the local market, as it is the case for legal services or accountancy. However, all APS sectors are dual in this respect, with big players serving national and international markets, while small firms, all other things being equal, are more connected to local clients. The share of these two components differ from one sector to another, which implies that not all APS sectors experience the same need for centralisation and concentration.

CONCLUSIONS

Observing the deepening concentration of APS firms in world cities, this paper has sought to analyse a terrain that has received relative little attention in the world cities literature: the geographies of APS firms *within* these cities. Set in Brussels, the paper identifies how APS agglomeration processes lead to distinct patterns of concentration and centralisation for different APS sectors. Whereas centralisation and localisation economies are both at play on a historically centralised banking sector, peripheral concentrations of the accountancy sector mostly show the importance of localisation economies for developments at the outskirts of the city.

For a substantial part of APS activities, concentration and/or centrality remain(s) important. Hence, our interpretation is that centrality, but also concentration, depends on the nature

of APS activities, and in particular on the relative share of the most strategic segments of APS activities. This is the reason why financial activities present the most concentrated and central location pattern in Brussels. However, we also insist on the inherited character of this location pattern of financial activities, in which centrality seems historically linked to the proximity with political and regulatory functions. In contrast, accountancy services are peripheral and less concentrated, following a local market, except for a few large firms that developed at the BCR's edge, near the airport. Legal services present a relatively more dispersed yet central location pattern, with a dispersal of small actors related to the local markets, and the concentration of larger actors close to strategic places, such as the EU District. The consultancy and advertising sectors, in turn, show intermediary patterns. The variegated degrees of APS centrality and concentration imply that although physical proximity remains important in the current 'digitisation' era (Hendrikse *et al.* 2018, 2019), it is not the only necessary component for carrying out intermediary APS activities. Socio-historical processes moderate the urban space in which APS firms locate, which in turn is influenced by the establishment of APS firms. Concentrations of APS firms transform parts of the metropolitan area, such as the European District with batteries of lawyers and lobbyists trying to influence the European Commission, or like the accounting firms centred around Brussels airport.

Methodologically, we have used sectoral employment data to calculate synthetic indicators of centrality and concentration. We have to bear in mind that a number of limitations arise from the sectoral classification. Working with pre-set statistical categories does not allow us to dissect the most strategic or international segments of activities/functions within these sectors, especially in the case of non-regulated professions like consultancy. Another limitation comes from the increasingly mingled nature of APS activities. For a considerable number of large APS firms, disciplinary divisions between accounting and law, law and consultancy, and so forth, have progressively become fluid. Large APS firms such as KPMG offer a variety of legal, accounting and advisory services, which cannot be reduced to a

single category. However, even though our sectoral categorisation limits what we can say for a single firm, these APS activities should still be represented in the sample we chose. Our findings should therefore be used for what they are, indicative of metropolitan agglomeration processes in APS sectors. As we see that only a part of Brussels' APS firms are concentrated and central, we suggest these represent the most strategic and internationalised APS functions. Despite these disclaimers, the here proposed methodology can help to measure how centralisation and concentration dynamics explain APS agglomeration in metropolitan areas beyond the particular case of Brussels. In the future, these might be complemented with qualitative methods digging into the strategies of APS firms and professionals to further contextualise the observed patterns constituting concentration and centralisation processes.

Notes

1. The NACE codes chosen are 64 and 66.1 for banking, 65 and 66.2 for insurance, 69.1 for law, 69.2 for accounting, 70 for management consulting, and 73. for advertising.
2. The Social Security (RSZ-ONSS) produces data on the mean of transport used from residence to work place, the modal share (2014).

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