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NY-LON 2020: the changing relations between London and New York in corporate globalization

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Abstract: London and New York are the leading cities in the world of corporate globalization: their financial, professional and creative services are at the centre of the commercial connections that constitute the world city network. The relations between the two cities are more complementary than competitive,

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commonly indicated by the concept of NY-LON as a trans-oceanic service conglomerate for facilitating economic globalization. However world city network analysis shows London growing its overall servicing connectivity more than New York. This change in the inter-city relation is investigated through focus on the service connectivity and agglomeration capacities of the two cities. It is found that they share a very similar connectivity regional profile whilst simultaneously showing stark differences in their service agglomeration sector profiles. This is shown to be the result of London gaining the rapidly growing super-rich servicing market. Thus while New York continues its long-term production of financial innovations, London has grown an offshore platform for global capital specifically in the form of the world's money management centre.

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INTRODUCTION

Studies of cities in globalization now constitute a large and varied literature on changing urban geographies. It began with Peter Hall's (1966) pioneering study of leading cities of the post-World War II economic boom. He developed a place-based synthesis of urban characteristics blending to constitute a specific 'type' of city: world cities. According to Hall, what set world cities apart was their extensive relationality across borders: in his view and at the time, there was a marked difference between the likes of London and New York and "urban complexes like Osaka-Kobe, Chicago or Los Angeles (that) have regional (rather than) international significance." (p. 9). Even though updated interpretations and surveys of world cities as a distinctive type of city still resonate in certain urbanist visions (Sigler 2016), it has disappeared from the urban-geographical mainstream because it risks being inherently reductionist: most if not all cities now exhibit extensive relationality across borders, albeit in very different ways (Bunnell 2015). Furthermore, as pointed out by Robinson (2005) and McCann (2004), the reductionism engendered within envisaging world cities as a type of cities often contains western-centric and metro-centric elements that hamper its broader usefulness for making sense of cities in globalization.

Nonetheless, the world city terminology has continued to thrive, albeit in a substantially revised form. Its reframing from the early 1980s onwards in the context of attempts to decipher the on-going, crisis-induced restructuring of global capitalism gave it a new impetus (Friedmann and Wolff 1982, Friedmann, 1986; Sassen 1991; Knox and Taylor 1996).

Thinking of how cities operate as command-and-control centres in the context of corporate globalization became commonplace (Alderson et al. 2010, Van Meeteren and Bassens 2016), as did research on the effects these processes have on the cities involved (Butler and Lees, 2006; May et al., 2007). This approach has remained a vibrant approach to understanding cities in globalization, with its continued significance directly expressed in numerous collections of research articles and essays (e.g., Amen et al. 2006; Derudder et al. 2012; Douglas and Friedmann 1998; Eade 1997; Sassen 2002; Segbers 2007; Taylor et al. 2007 and 2011), facilitated in part by conceptual renewal (Bassens and Van Meeteren, 2015) and methodological diversification (Neal, 2017).

At the same time, the contemporary world city literature is far from a coherent body of literature (Acuto, 2011) and best understood as part of an increasingly diverse research agenda on cities in globalization. This is epitomised by the retitling of the second edition of

At the same time, the contemporary world city literature is far from a coherent body of literature (Acuto, 2011) and best understood as part of an increasingly diverse research agenda on cities in globalization. This is epitomised by the retitling of the second edition of Brenner and Keil's (2006) The Global Cities Reader into The Globalizing Cities Reader (Ren and Keil, 2017), a change that usefully reflects how the geographies of urban-geographical theory have started shifting away from the western vantage points from which much of the initial writings on world cities were developed. Ren and Keil's (2017) updated survey of the literature on cities in globalization still features foundational and more recent world city writings, but coverage of contributions is significantly expanded to include new theoretical and epistemological positions as well as emerging research foci and horizons. These new positions reflect broader shifts in urban geography that have enriched and diversified the literature on cities in globalization. This includes engagements with social constructivism (Massey, 2007), post-structuralism (Smith and Doel, 2010), postcolonialism (Parnell and Robinson, 2012), and combinations thereof in approaches such as assemblage urbanism (McFarlane and Robinson, 2012), as well radically new ways in which researchers make sense of the foundational relationships between the 'global' and the 'urban' (Lancione and McFarlane 2021) and the epistemologies of the urban (Brenner and Schmid 2015).

This diversification has clearly invigorated the literature on cities in globalization, and often involves 'difference-finding' with the world city literature as described above (e.g. Roy 2009). As Van Meeteren et al. (2016) argue, this emphasis on difference – which can be thought of as attempts to provincialize world city research (Sheppard et al., 2013) – may sometimes be for the better, but there is a danger of throwing out the baby with the bath water: the exact role of world cities as interconnected sites from which capitalist exploitation

may be changing (Bassens and Van Meeteren 2015, Pazitka et al. 2021), but cities remain a crucial urban-geographical element of corporate globalization. Paradoxically, not sufficiently highlighting this role of world cities may well be one of the reasons why, as Massey (2007) has shown, the term is at risk of becoming performative and appropriated by boosterist urban agendas. Against this backdrop, in this paper we empirically detail and interpret one of the most notable changes in the realm of world city-formation: the shifting relation between New York and London within corporate globalization.

To analyse the shifting relation between New York and London within corporate globalization, we draw upon a strand of research called world city network analysis (Taylor 2004; Taylor and Derudder 2016). This framework starts from the assumption that the geographies of advanced producer services (APS) firms are indicative of processes of world city-formation. These sectors, comprised of the world's largest firms in finance, accountancy, legal services, consultancy, and advertising, represent but one of many globalizations in general and corporate globalizations in particular (Sigler and Martinus 2017; Breul 2019), but they have an increasingly large influence on how the world's flows of money, materials, and people are routed (Sassen, 1991; Boussebaa and Faulconbridge 2019). This focus on APS as an economic sector goes hand in hand with a focus on relations between cities: city-dyads that constitute city networks. This leads to a specification of a 'world city network' that enables measurement of individual city-dyads within APS firm networks as a key spatial organization of the world economy (Taylor 2001). Within this research the London/New York city-dyad consistently stands out as exceptionally important: their joint economic dominance is such that they are sometimes linked together to create a single entity called NY-LON, as a sort of 'super-city' around which corporate globalization is organized. The current manifestation of this global urban phenomenon is our subject matter in this paper.

One important advantage of world city network analysis is its empirical output: by measuring city-dyads we can make clear evidence-based statements about the geography of cities in globalization (e.g. Taylor et al. 2013). We use this advantage to monitor changes in the specific relations between London and New York within an encompassing world city network and use this to make broader points about the changing role of world cities in corporate globalization. The paper proceeds through six sections. We begin with a detailed review of the idea of NY-LON, noting its singularity as a concept and its focus on inter-city complementarity over competition. In the second section we show how traditional methods of

studying inter-city relations are largely inappropriate for understanding NY-LON: as well as predicated on competition, as 'national urban systems' they actually preclude the existence of a transnational NY-LON. Hence the need to study London and New York within the framework of world city network analysis; this is the subject of the fourth section where the network is formally specified to provide measures of connectivity and agglomeration, generated for our two cities plus other leading cities for comparison. The empirical results of our study are presented in sections five and six. In the former the complementarity of London and New York is clearly seen in their almost identical pattern of connectivities across nine world regions. In the latter, the opposite obtains: the sector profiles of their respective business service agglomerations are unambiguously different. It is this stark difference that we identify as the reason for London becoming relatively more important than New York in the world city network in 2020. In a short conclusion we portray London as the world's 'offshore metropolis' in a world city network.

2 NY-LON AND BEYOND

NY-LON's peculiar nomenclature by merger can be traced back to a Newsweek article showing that the two cities to be working as if one city despite their separation by an ocean (McGuire and Chan 2000). Their key point was that in a range of financial and commercial activities London and New York were operating in unison (Smith 2011). This idea of both cities sharing a uniquely common profile was also given formal recognition in a Corporation of London (2000) study showing significant parallels between New York and London with regard to a comprehensive list of processes in the realms of demography, labour force and income, and major economic trends. The key finding of the report was that "London and New York, despite striking differences in their historic past and with very contrasting forms of local governance, have developed economies that, at the century's turn, are at an extraordinary point of symmetry" (Corporation of London 2000, p. 8; cited in Smith 2011). In addition the unity of work across the two cities also emerged from research into the labour market of large groups of high-earning professionals in the financial industry. For example, Beaverstock (2005) explored how such elites increasingly span New York and London through their work and lifestyle: hyper-mobile NYLONers as an elite community commuting on what is by far the busiest transatlantic air route.

In fact this unusually close inter-city relation is by no means just a recent phenomenon. In the second half of the twentieth century there were two important financial developments in This article is protected by copyright. All rights reserved

London-New York relations that had wider economic repercussions. After the Second World War a scarcity of dollars in Europe led to the development of a 'Eurodollar' market in London alongside New York's actual dollar market (Burn 2000; Kynaston 2011, 440-1: Hendrikse and Fernandez 2019, 255) thereby, among other things, enabling trade across the Cold War divide (Kynaston 2011, 469). And in the deregulation of the London financial market in the 1980s - known as 'Big Bang' - it was New York investment banks that quickly moved to London and generated a new work culture fit for a globalizing world (Kynaston 2011, 558-75). In London's 'top dollar' revolution (p. 569), these American banks did not view the two cities as competitive rivals since they had a financial interest in both doing well simultaneously. A powerful complementarity was built into economic relations between the two cities. And its essence was both very simple yet immensely crucial: working in London meant you could do things that could not be done in New York; outside the jurisdiction of US financial authorities London took the role of American capital's 'off-shore' platform. Thus NY-LON, even before its later recognition, was a fundamental urban development in the advance of corporate globalization. The concept of NY-LON has now become an analytical entry point in scientific research

The concept of NY-LON has now become an analytical entry point in scientific research exploring how and why London and New York are so strongly integrated (Hall 2003; Smith 2011; Wójcik, 2013; Taylor and Derudder, 2020). The most direct examinations of its distinctiveness have been offered by Wójcik (2013) and Taylor et al. (2021). Wójcik (2013) shows in detail that in the operation and production of global financial markets the degree of commonality, complementarity and connectivity between the two cities is indeed exceptional. He shows that London and New York are "more than a dyad leading in terms of density of flows" (p. 2739): it is an inter-city relation with its own unique strength, impact and meaning. Building on this, Taylor et al. (2021) find that NYLON's pre-eminence is much greater and more geographically widespread than previously considered. Its importance is extant in every economic world region: NY-LON is uniquely globalised.

However, above all, being globalised entails being a dynamic city-dyad: NY-LON not as a monolith of economic power but rather an active inter-city relation both adapting to, and creating developments in, the global economy. The key trigger in this process was 1990s neoliberalism that converted traditional national financial centres into "gateways to London and New York" (Hendrikse and Fernandez 2019, 226). The result was described at the time by Sassen (1999) as a "cooperative division of labor between the two cities" (p. 81) whereby

New York's "brilliant financial engineering" is complemented by London's "denationalised platform for global operations" (pp. 83-4). Wójcik et al. (2019, 697-8) have shown how this initial NY-LON has changed specifically through London's growth of export activities. Although 'platform activity' (foreign providers for foreign clients) remains important, it has been overtaken by 'export activity' (domestic providers for foreign clients) generating a new important layer to the city's economic capacity. In this paper we explore this development by placing NY-LON within the encompassing world city network.

3 STUDYING INTER-CITY RELATIONS: FROM NATIONAL URBAN SYSTEMS TO WORLD CITY NETWORK

The way cities have traditionally been studied in geography has not been helpful in understanding the practice of NY-LON, the work of fusing two cities. Studies of relations between cities has been built upon Walter Christaller's (1933/1966) central place theory, a formal economic framing that portrays cities as hierarchies evenly distributed in space. Transmuted into national urban systems (Berry 1964; Bourne and Simmons 1978), this became the standard way of understanding cities in their plurality into the 1980s after which it abruptly dropped off the urban geography research agenda (Bassett and Short 1989), albeit that some of the core ideas have been revisited in recent years (van Meeteren and Poorthuis, 2018).

This research lineage has been especially irrelevant for considering relations between London and New York. For a start the economics of NY-LON is not a competitive hierarchical relation; as previously emphasized this inter-city relation is complementary rather than rivalry. But there is an even more basic limitation: quite simply, in the national urban systems tradition there are no relations of any sort between New York and London! With New York located at the top of a United States urban system and London the same in a British urban system, there is no acknowledgement that these cities had important relations beyond their respective countries, including, of course, with each other. This position became untenable with the recognition of economic globalization. Thus Friedmann (1986) proposed a 'world city hierarchy' where the national truncating of city relations was explicitly breached. Instead three regional hierarchical relations broadly covering Europe, the Americas and Pacific Asia were posited with London, New York and Tokyo on top of each respectively. These city hierarchies were less bounded than their national predecessors – there were limited links between regions, including London linked to New York – but the framework continued to be This article is protected by copyright. All rights reserved

about hierarchical competitiveness, albeit in world-regional form (Friedmann 1995). In contrast Sassen (1991) posited a new class of cities she termed 'global cities', represented by London, New York and Tokyo. Using a comparative method she provided detailed accounts of all three cities including similarities and differences thereby explicitly opening up the possibility of complementarities rather than competition. This prospect was taken up by Castells (1996): he used Sassen's global cities as a key element of his 'network society'. Thus Castells moved the focus from each city as a place to them being critical participants in myriad network processes (Allen 1999). Networks operate primarily through complementarities and therefore London and New York in particular were finally being viewed beyond both national and competitive presumptions.

This way of viewing relations between cities across borders has become commonplace in the twenty first century: urban research literatures as diverse as those on policy mobilities (McCann 2011), logistics systems (Jacobs et al. 2010), and governance networks (Davidson et al. 2019) explicitly deal with diverse forms and functions of inter-city complementarities and relations across borders. More generally, past neglect of inter-city relations has been reversed with cities being viewed as important players in an increasingly transnational global economy (Knight and Gappert 1989; Scott 2013). But this revival of treating cities in their plurality has required the building of a very different way of understanding how cities relate to each other.

One little discussed consequence of the central place/national urban systems approach has been the exclusion of cities from the formal study of trading beyond their hinterlands. Derived from nineteenth century Ricardian economics but actually looking more like twentieth century Soviet/COMECON trading practices, 'trade' has been conceived as naturally 'international' (i.e. between states), both theoretically and empirically (i.e. notably in data collection) (Jacobs 1984, 29-32, 200). Central flow theory, as an adjunct to central place theory, is an initial way of transcending this deeply held trade presumption: cities are treated as both local service centres (in central place theory) but also non-local service centres (in central flow theory) (Taylor et a. 2010). It is the latter that has been operationalized using the production of advanced business services to define a world city network in which the non-local encompasses the global scale Taylor and Hoyler 2021). In this way providing worldwide business services is measured as myriad inter-city relations, which are posited as trade through cities not between states. But the important point is that

inter-city relations in central flow theory prioritise network formation over hierarchical framing, an understanding of cities in their plurality that encompasses complementary between city functions (Taylor 2009). It provides our means for extending empirical knowledge of NY-LON in contemporary globalization.

4 LOCATING LONDON AND NEW YORK WITHIN THE WORLD CITY NETWORK

Our framework for analysing the form and function of the complementarity between London and New York draws on a methodological extension of world city network (WCN) analysis. WCN analysis as conceived here is based on an application of the interlocking network model (INM) to data detailing the location strategies of advanced producer services (APS) firms. First elaborated in Taylor (2001), the INM provides an empirical specification of Allen's (2010) observation that in major cities high-level professionals working in APS firms mobilize their influence through the day-to-day construction of close connections across these major cities – they are the 'global city makers' (Hoyler et al., 2018) avant la lettre. Collectively, these connections are envisaged as constituting the WCN. This is of course but one of the many ways of understanding cities' position in corporate globalization (Krätke 2014; Parnreiter 2014; Rossi, 2017), as well as being but one of the many possible abstractions of inter-city connections (Wall and van der Knaap 2011; Sigler and Martinus 2017; Acuto and Leffel 2020). But crucially, it is an abstraction that facilitates precise specification and operationalisation rooted in decades of research on the salience of APS for contemporary urban economies (Sassen 2019; Beaverstock et al., 2000; Bassens and van Meeteren, 2015; Boussebaa and Faulconbridge, 2019; Derudder and Taylor, 2020).

This section of the paper is divided into three parts. We begin by providing a detailed specification of the network model we use, and then description of the data collection, before providing some preliminary findings on London and New York in the world city network.

4.1 The interlocking network model

The starting point of the INM is a universe of organizations located across cities (Taylor, 2001). The focus is on APS firms providing expert/professional/creative knowledge to other corporations to facilitate their business activities (Jacobs et al., 2014). This is derived from Sassen's (1991) classic definition of 'the global city', wherein the latter is characterised as the site of both demand and production of APS. As a necessary cutting-edge economic sector This article is protected by copyright. All rights reserved

in contemporary globalization, large firms offering these services require a 'global presence' across multiple cities. In line with Allen's (2010) observations, it is the connections between APS firms' offices, enacted through the work of professionals staffing them, that constitutes the WCN as specified here.

The basic measure of the importance of the presence of APS firm j in world city i is called a service value v_{ij} . As explained below, this measure is based on information about, first, the size of a firm's presence in a city (e.g. the number of offices the firm has in a city for accountancy firms, or areas of expertise for law firms), and second, the extra-locational functions associated with a firm's presence (e.g. regional headquarter functions). Service values range from 0 to 5 with the city housing a firm's headquarters scoring 5, a city with no office scoring a 0, and in-between values reflecting the relative importance of presences (e.g. a regional headquarters scoring 4, and a typical office scoring 2).

These individual measures v_{ij} can be arranged as a service value matrix V, defined by axes listing cities and firms. The purpose of the INM is to produce measures of inter-city connectivity based on V. This implies that an office should not treated as being 'important' for a city because it is simply located there (cf. Kleibert, 2017). Rather, an office is treated as being 'important' for a city because of the scope of *inter-city networking practices* that occur from, to, and through it: the flows of information, knowledge, instruction, ideas, innovations, etc. between offices, generated by the professionals working there. In other words, the INM seeks to convert V so that it gives us insight in the *relations* between cities based on office presences. The crux of the INM, which in network analysis is called a bipartite network projection, is the specification of city-dyad connectivities $CDC_{a-b,j}$ between cities a and b for APS firm a based on the information contained in V:

$$CDC_{a-b,j} = v_{aj}.v_{bj} a \neq b (1)$$

The assumption underlying this specification is that (1) a shared presence of a APS firm in a pair of cities opens up the potential for inter-city interaction, with (2) the level of the interaction depending on the importance, size, and operational capabilities associated with its presence in that pair of cities (see Neal (2014) and Hennemann and Derudder (2014) for alternatives). For example, the connection between cities one housing the global headquarters and the other a regional headquarters (5x4 = 20) will be stronger than between two cities both housing typical offices (2x2 = 4).

Relations between two cities – termed 'city-dyad connectivity' CDC_{a-b} – is calculated by aggregating city-dyad connectivities across all APS firms in the dataset:

$$CDC_{a-b} = \sum_{i} CDC_{a-b,i} = \sum_{i} v_{ai} \cdot v_{bi}$$
 $a \neq b$ (2)

And finally, a city's overall connectivity – termed 'global network connectivity' GNC_a – is calculated by aggregating its city-dyad connectivities across all cities and firms in the dataset:

$$GNC_a = \Sigma_b CDC_{a-b} = \Sigma_{bi}CDC_{a-b,j} = \Sigma_{bi}V_{aj}.V_{bj} \qquad a \neq b \qquad (3)$$

The aggregate measures produced by (2) and (3) are hard to interpret at their face value, as they crucially depend on the size of V: the number of firms and cities in the data. These measures are therefore commonly reported as percentages of the most connected city to provide a range from 0% to 100%.

4.2 Data collection

The above model specification has guided a sequence of WCN data collections (2000, 2004, 2008, 2010, 2012, 2016, 2018 and 2020) on the (importance of the) presences of major APS firms across major cities. Operationalizing service value v_{ij} and thus devising matrix V requires making decisions on which cities and firms to include, and how to gauge the importance of presences. Although the gist of the data collections carried out between 2000 (earliest) and 2020 (most recent) has remained stable over time, there have been some improvements: as firms' websites developed to become increasingly informative it became possible to devise a formal systematic strategy. This has involved focusing exclusively on selecting a fixed number of major firms in the respective sectors. Thus from the 2010 data gathering onwards, this research consistently used 175 leading APS firms distributed across 5 sectors: 75 financial services firms, 25 management consultancy firms, 25 advertising firms, 25 law firms, and 25 accountancy firms. Firms are always chosen based on industry-specific rankings, so that shifts in the key firms servicing the global economy are evident in the data (e.g., the Arthur Andersen collapse after the Enron fiasco, and the rise of Chinese financial services firms).

Similar changes were implemented in the selection of cities. There was an initial ad hoc selection of 315 cities in 2000, which was arguably biased towards Northern America,

Western Europe, and Pacific Asia (Robinson, 2005). This was therefore revised into new and more inclusive rosters of cities. In addition to the original 315 cities, additional cities were included based on population size and a range of other thresholds. This led to an increased selection of 526 cities in 2010; in 2020 we have 707 cities.

Irrespective of the shifting number of cities and firms, the actual data gathering strategy to gauge individual office service values (v_{ij}) has remained stable between 2000 and 2020. Based upon information from corporate websites plus complementary materials derived from secondary sources such as annual reports and internal directories, the 0-5 scoring system has been operationalised: the importance of each office of a firm's office network is assessed and assigned a service value score for every city. This very large data collection exercise begins by defining a typical office of a firm, each of which are scored 2 and then reasons to diverge from 'typical' are considered as follows: 5 for firm's headquarters, 4 for regional headquarter offices, 3 for specifically large offices, 1 for specifically minor offices plus, of course, 0 for no presence in a city. To create the 2020 service values matrix 14,807 assessments of presences (offices) were carried out, covering 175 firms' office networks in 707 cities in order to allocate the appropriate score -0, 1, 2, 3, 4, or 5 - to each firm in every city. Previous similar data collections produced the first 315 cities x 100 firms matrix for 2000 and a 526 cities x 175 firms matrix in 2010. Using these matrices as the input to Equations 1-3 allows for an overview of the (evolving) global connectivities of cities in the WCN.

4.3 London and New York in the WCN

As expected London and New York are found to be the two most connected cities (GNC) in all world city network analyses from 2000 to 2020. Thus although London and New York are firmly embedded in a much broader WCN, it can be conjectured that there is something exceptional in the networking prowess of these two cities. This is explicitly shown in how both cities are connected and integrated. For example, in 2020 160 out of 175 firms were present in one or other of the two cities of which 143 had offices in both London and New York. These numbers are a clear indication of both their overall importance and their mutual complementarity. This is in line with other evidence showing the dominance of London and New York in the first decades of the twenty first century. There is no ambiguity on this point but this does not mean that the actual relations between the two cities have been static. Bassens and van Meeteren (2015) point out that even though the patterns of global city-formation initially outlined by Friedmann (1986) and Sassen (1991) are enduring, they are This article is protected by copyright. All rights reserved

also changing: in particular, financialization is slowly altering some of the processes underlying the world city network (Pažitka et al., 2021), even though world cities crucially remain what Bassens and van Meeteren (2015, 752) call 'an obligatory passage point for the relatively assured realization of capital' with New York and London at the apex. Perhaps the most overt example of this change is that over time the centrality of both cities has acquired a new element: transnational wealth elites buying residential properties in New York and London as an investment rather than as a primary residence (Fernandez et al. 2016). Because residential real estate market of both cities is perceived to be highly liquid, it increasingly functions as a 'safe deposit box' (see also Atkinson 2020). But we will show that these various changes in the way the world city network is being reproduced are not affecting the two cities equally.

Also as expected, London consistently ranks above New York in overall connectivity (GNC) reflecting its specific longstanding 'global platform' functions. Thus all reported measures of global network connectivity are given as percentages of London's total scores from equation (3). What this shows is that New York's connectivity is declining relative to London: in 2000 97.6%; in 2010 94.4%; and in 2020 86.1%. This emerging connectivity gap could be interpreted as a relative or even absolute decline of New York. However, this is at odds with a continuing large gap between New York on the one hand and other major cities in the world city network. For instance, Hong Kong constantly ranked third, has connectivity scores only just above 70%. Indeed, when looking at the results for 2020, a more apt interpretation seems to be that of London racing away, leaving other cities – including New York – behind. This raises questions about the assumed unison of New York and London in servicing the global economy, of NY-LON itself.

So why does London appear to be becoming more strongly connected into the WCN than New York? An easy answer would be that the nature of London-New York relations has not itself changed, but that London is simply doing relatively more of the same financial, professional and creative servicing than before. An alternative is that London is developing a new enhanced capability that is not happening in New York. We will show that it is the latter.

Our analytical starting point for this finding is to note that there are obvious disadvantages to merely focusing on GNC. The key shortcoming is that it is an all-too-encompassing summary hiding the diversity of firms and cities producing an overall connectivity: by focusing on the outcome of Equation 3 rather than the constitutive Equation 1 (diversity in firm presences This article is protected by copyright. All rights reserved

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capturing different agglomeration profiles) and Equation 2 (diversity in geographies of intercity relations capturing network profiles), interesting aspects of the underlying information are lost. When we decompose Equation 3 – separating out these two constituents of the gross network connectivity – we will show totally different outcomes: the agglomeration shape of London is strongly diverging from New York while the geographies of the connectivity through the two cities remains closely aligned. We derive and discuss these contrasting findings in turn beginning with the continuing similarity in London and New York's relations with the rest of the world.

5 NY-LON SIMILITUDE: CONNECTIVITY CAPACITIES

By similitude we mean a strong similarity between London and New York, embedded so it appears to be a basic structural feature of the world city network. And we find this similitude clearly expressed in the worldwide pattern of the two cities' connectivities. They are truly global in their connectivity reach in the sense that neither city shows any bias towards their home regions: London is not particularly European in its connections; New York is not particularly North American in its connections.

Producing worldwide connectivity profiles for cities is straightforward: using Equation 3 defining global network connectivity, we can simply input firms by cities in world regions separately. We use nine economic world regions that represent distinctive markets in corporate servicing through cities: Europe, Northern America (USA and Canada), Pacific Asia, Latin America, Middle East and North Africa (MENA), Sub-Saharan Africa, Eurasia (ex-USSR states except Baltic states and plus Mongolia), South Asia and Australasia. London's and New York's connectivities to cities in each of these regions is summed to provide regional absolute scores. However this form of measurement is rather uninformative because each city's profile is fairly similar to others, mainly reflecting size differences between regions in the overall data. For instance, there are more cities in the data from Europe, Northern America and Pacific Asia than for other regions, with Australasia having the least cities. Thus absolute scores largely reflect this regional patterning of numbers of cities. However, these data effects can be eliminated by standardising the city connectivities for each region. Such new standardised values are produced by converting the frequency distribution of the absolute values into relative scores in a distribution where the mean is zero

and city scores are measured in units of standard deviation. In this way size of region (how many cities) is neutralised; the importance of a city's connectivity in, say, Europe is given relative to all other cities – is it above or below average for all cities' connectivity to Europe and how much different is it from the mean, measured in standard deviations? Thus can each city's European connectivity be compared to all cities' connectivity in Europe.

Given our focus on London and New York, we use only leading cities in the world city network as our population for the standardising exercise. These we define as the top 100 cities as ranked by global network connectivity to produce frequency distributions for each region. The standardised scores of London and New York for the nine regions are listed in Table 1(a). There are three results that are immediately apparent. First, the two cities have very strong connectivities within all regions and therefore we expect high positive scores across the board. This is confirmed in Table 1(a) where the eighteen scores for the two cities range from 3.97 to 6.30. These are very high standardized scores: a score value of two is the common way of defining the tail of a frequency distribution, the way to identify large scores. Thus the scores in Table 1(a) confirm the immense prominence of London and New York in the world city network and that this importance is remarkably worldwide, their connectivity capacities reaching into every world region (Taylor et al 2020). It should be noted that this NY-LON exceptionalism can be traced back to the earliest analyses of the world city network for 2000 (Taylor 2004, 103-121). Second, London's scores are slightly higher than New York's in every region confirming the relative positions of the two cities in the world city network discussed earlier is replicated across the world. The lack of any home region connectivity bias for London and New York is also clearly shown; their respective scores for Europe and Northern America are actually relatively low! Third, close inspection of Table 1(a) shows that the two profiles of scores across regions move in unison. Thus from Australasia to Eurasia the scores of London and New York increase, from Eurasia to Europe they both reduce, from Europe to Latin America they increase: this sequence of same movement directions continues to the end of the table. This intriguing finding warrants further analysis.

Table 1: Statistical comparisons between London and New York (a) Standardised scores for London and New York by world regions, 2020 (b) Standardised scores for London and New York by service sectors

(a)

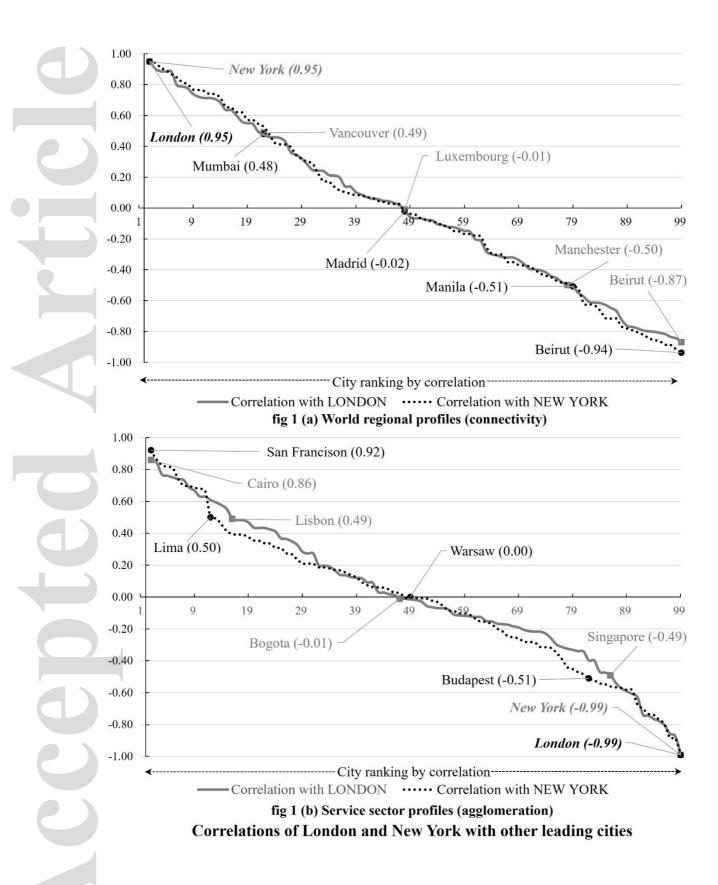
(b) 2000

	Australasia	Eurasia	Europe	Latin America	Middle East/ North Africa	Northern America	Pacific Asia	South Asia	Sub-Saharan Africa
London	5.99	6.30	5.13	5.66	5.61	5.89	6.23	5.28	5.81
New York	4.94	5.27	3.97	4.70	4.50	4.60	5.35	4.43	4.80

2020

	Accountanc	Advertising	Finance	Law	Management
	у		rmance	Law	Consultancy
London	6.31	2.72	3.19	4.28	3.32
New York	2.27	3.49	3.13	3.00	3.05

	Accountanc y	Advertising	Financial services	Law	Management Consultancy
London	4.69	2.79	2.97	4.10	2.61
New York	3.71	4.10	2.89	3.54	3.21



We use simple correlation coefficients to measure the similarity between London and New York's standardised connectivities across world regions. This results in a correlation of +0.95, both confirming and furthering our observation of Table 1(a). A coefficient at this This article is protected by copyright. All rights reserved

level, very high, shows that we have a very strong finding: London's and New York's advanced business servicing across the world produces almost identical geographies of connectivities. This can be seen as providing the concept of NY-LON with an authenticity through a common pattern of worldwide connectivity capacities. But how distinctive is this high correlation as a city-dyad? This is evaluated by finding how London and New York's regional connectivity profiles compare with the profiles of other leading cities. To indicate and underscore the high correlation between London and New York, Figure 1(a) shows all correlations from our population of leading cities with London and New York. Cities are ranked from 1 to 99 by size of correlation, for London correlations range from +0.95 to -0.87, for New York from +0.95 to -0.94. Specific cities are identified from top to bottom at regular intervals of correlation to indicate this wider context. Thus is the previously reported correlation of +0.95 correlation for NY-LON located in Figure 1(a) showing London ranked top for New York, and New York ranked top for London: this the powerful geographical similitude underpinning NY-LON.

6 NY-LON DIVERGENCE: AGGLOMERATION CAPACITIES

Although the language we use employs the names of cities, in reality we are analysing one part of cities: their agglomerations of APS. Each agglomeration is unique and provides a city with particular advantages in the global economy. Service firms locate in a city to take advantage of these differences. The latter encompass aspects of a city's historical development reflected in a specific array of financial, professional and creative service capacities. London and New York are extreme cases of this: they both have immensely strong service agglomerations as indicated by their global network connectivity. In this context the latter can be viewed as a measure of the overall potency of their respective service agglomerations. But in addition we can compute the contribution of each of the five sectors – accountancy, advertising, finance, law and management consultancy – to global network connectivity. In this way a profile of a city's agglomeration can be constructed showing its specific structure, the services that are the main sources of its overall potency and those that are less evident. For London and New York we know all five sectors are strongly represented but they will show different servicing patterns, which we explore here.

We produce sector profiles of agglomeration using the same methodology as previously used for regional profiles: using Equation 3 defining global network connectivity, we simply input firms by service sector separately. This produces five service sector connectivity scores to This article is protected by copyright. All rights reserved

provide a profile of absolute scores. However as before, this form of scores is rather uninformative because each city's profile is fairly similar to others, mainly reflecting differences between sectors in the overall data. For instance, there are more financial firms in the data, thus finance features strongly in all city profiles, and accountancy is a far larger service (i.e. with many more offices) than law so that it outscores the latter in all city profiles. However, these data effects are eliminated by standardising the absolute scores. In this analysis these standardised values, with a mean of zero and in units of standard deviation, show how important, say, a city's law connectivity is compared to law connectivities in other cities.

Using the leading cities defined as the top 100 in terms of global network connectivity once again, we report profiles for London and New York in Table 1(b), this time for service sectors. There are three findings. First, the standardised scores are all relative high, over 2, with 8 out of 10 over 3. However, scores are generally lower than for regional connectivities (Table 1(a)) indicating that London and New York are relatively less dominant in their agglomeration capacities in relation to other leading cities compared to their immense connectivity capacities (Table 1(a). Second, London does not lead in all columns as in Table 1(a). Rather the sector comparisons in Table 1(b) are in line with what we know of the two cities: New York with a higher score for advertising (Faulconbridge et al. 2010), both cities relatively similar for financial services and management consultancy (Wójcik, 2013), and London outscoring New York in accountancy and law (Beaverstock et al. 1999). But the latter two stand out in the table. New York is relatively strong in both services but London's scores are extremely high: these two scores, one over 6 the other over 4, are the outstanding results of this table. Third, the movement of the scores between columns is the obverse of regional scores in Table 1(a): from Accountancy to Advertising London's score reduces, while New York's increases, from Advertising to Finance London's scores go up as New York's go down, with differing movements continuing to the end of the table. That this is the opposite of London/New York comparison in Table 1(a) is confirmed by the correlation between the two sets of sector scores: -0.99. This emphatic result shows the advanced producer service agglomerations of the two cities to be quite different in the ways they are facilitating corporate globalization, a finding that supports the core idea of the NY-LON concept that relations between the cities are largely complementary rather than competitive.

We began this section by noting that every city agglomeration is different and therefore these can be measured by correlations with other leading city agglomerations for both London and New York. This result is put into the wider context of the top 100 leading cities in Figure 1(b). The overall pattern is shown in Figure 1(b), which shows the converse of Figure 1(a) through London and New York's positions at the bottom of the graphs. This is a really intriguing result: London and New York are most unlike each other in their agglomeration profiles. Compared to 99 other leading cities London's greatest difference is with New York; compared to 99 other leading cities New York's greatest difference is with London.

Such a stark difference was not expected so the question arises as to whether this is a relatively new phenomenon. Since our data on the world city network goes back to 2000 we

such a stark difference was not expected so the question arises as to whether this is a relatively new phenomenon. Since our data on the world city network goes back to 2000 we can check whether London and New York's agglomeration profiles were so very different then (Table 1(c)). The answer is no: the correlation between their two service sector profiles at this time is actually positive, +0.25 indicating a very slight similarity. The differences between the 2000 profile and 2020 are relatively modest, some expected: for instance, both cities have witnessed an increase in relative significance of their financial services between 2000 and 2020 (cf. Wójcik, 2013). Despite financial uncertainties relating to Brexit (Hall and Wójcik 2018), we find no evidence for an effect on London in these data. There are several minor shuffling of service capacities in other sectors but the outstanding change is in accountancy: London has increased by more than one standard deviation, New York has reduced by more than one. Accountancy is also the biggest sector in our data (its firms generally have the largest office networks) and therefore we can infer that these very large differences in accountancy connectivity is the chief source of London's increasing lead over New York in global network connectivity since 2000.

7 CONCLUSION

London and New York are arguably the two most researched cities in the world (Kanai et al. 2018). Given that we already know so much about both cities, and given that world city network research represents a specific take on cities in globalization, what has this paper added through its analyses of their current complementarity?

We have deployed a specific methodology that treats London and New York as part of a wider city network wherein customised data allows statistical comparisons between city-dyads. Thus is NY-LON described in a broader global urban context as explicitly shown in

for clients, which constitute the key sector here.

Figure 1. And the empirical findings from these analyses is that NY-LON is not simply the most important city-dyad within corporate globalization as widely appreciated, but that it has its own very unusual character. There appears to be contrasting relations between the two cities whereby they share a common geography of service provision alongside very different profiles of functional offerings. This particular interplay of connectivity and agglomeration capacities indicates development of a causal nexus of similitude and difference at the apex of the world city network that has not been previously identified.

However this new finding does chime with other understandings of changing relations between London and New York. The three very large standardised scores in Table 1 – each over six – serve as a link to other studies. Each score pertains to London, one functionally indicating exceptional growth in accountancy and the others regional indicating exceptional growth in servicing Eurasia and Pacific Asia. These reflect London capturing a new megaservicing sector by once again leveraging its key difference to New York: being outside the jurisdiction of US financial agencies. After several decades of corporate globalization a new dynamic of economic inequality has been generated: the extreme wealth of a relatively small proportion of the world's population. It is this concentration of capital that has created new servicing opportunities, which London has taken advantage of, and New York much less so (Atkinson, 2020). And as Ajdacic et al. (2020) clearly show, it is accountancy firms in particular, through their enabling of global wealth chains providing tax and other advantages

In conclusion, the 'extraordinary symmetry' between London and New York documented in the City of London (2000) report has developed an important element of asymmetry two decades later. While New York is continuing its own creative work for corporate globalization, London has graduated from being offshore for the USA to becoming offshore for the world, now specified and measured inside NY-LON within a world city network. This specific geographical knowledge of a key mechanism in contemporary globalization provides a crucial input for understanding the new world geography of the twenty first century that is developing through the world's cities (Derudder and Taylor 2020).

ENDNOTES

1 Belton (2020) provides detailed examples of this difference by showing contrasting experiences for Russian capital in New York and London. For instance, in the former

Russians were embroiled in the Bank of New York money laundering scandal of 1999 (pp. 412-18) subsequently reverting to London as their 'laundromat' of choice. Quite simply they found there to be 'a much lower level of due diligence' in London – which she terms 'Londongrad' (pp. 344-65) - resulting in 'a huge stream of income for armies of bankers, lawyers, consultants and PR firms' (p. 351).

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