

# Why skyscrapers after Covid-19?

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## Highlights

- Global cities and their skyscrapers will be more important after Covid-19 despite an increase in remote working.
- Skyscrapers outside of global cities, in both the Global North and South, will be less important after Covid-19.
- Skyscraper demand in global cities will strengthen to facilitate in-person interactions in specialised high-value fields.
- Global cities will drive GDP more than before, attracting wealth and demand for luxury residential skyscrapers.
- The location and usage of any skyscraper matters more than its height or reasons for construction.

## Abstract

Globalization's *need* for global cities with highly concentrated financial districts is discussed to explain how the Covid-19 pandemic will paradoxically only serve to make the world's leading global cities more essential, valuable, and demanding of skyscrapers than ever before. Financial and corporate service firms cannot only be digitally based because they also require face-to-face interaction, collaboration, and joint-production within themselves, and between one another, in the most connected global cities to effectively function as competitive businesses. However, after Covid-19 advanced service firms will only *not* practice remote working where and when they must; so that in-place face-to-face interactions with colleagues and clients will be overwhelmingly only concentrated in the skyscraper-laden financial

districts of the world's leading global cities. The future of commercial and luxury residential skyscrapers in the world's leading global cities can be said to be secure because the impact of Covid-19 on enhancing the centrality of these few highly connected and super-wealthy cities in globalization is both understandable and predictable; skyscrapers elsewhere in the Global North or South will struggle to remain viable as firms increasingly decentralise the work of their staff away from city centre offices.

**Keywords:** skyscrapers, Covid-19, pandemic, globalization, global cities, financial districts

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## 1. Introduction

We are living through an unprecedented skyscraper boom. Many cities today have rising skylines in extent, density, volume and height. With the ‘global shift’ from ‘secondary’ or manufacturing and distribution activities to ‘tertiary’ services, transactions, and ‘quaternary’ information/communication activities the ‘transactional city’ (Gottmann, 1983) of multi-storey skyscrapers – be they ‘tall’ (>100m), ‘super-tall’ (>300m), or ‘mega-tall’ (>600m) (Emporis, 2021) – that supply office, commercial, and residential space has become a pre-eminent feature of urban form. It has become the norm that the finance and global business areas of many cities are easily identifiable by the horizontal proximity of their tall buildings, office towers, and skyscrapers.

In the late twentieth century the rise of the office skyscraper – e.g. the World Trade Center (1973-2001) in New York, the Sears (renamed the Willis Tower in 2009) Tower in Chicago (1973), Tour Montparnasse in Paris (1973), Tower 42 in London (1980), the Bank of China Tower in Hong Kong (1990) – reflected the new international division of labour. With the need for urban space in the z-axis to allow a concentration of technologies, peoples, resources, and functions the office skyscraper became the universal symbol *par excellence* of the concentration of business activities in the centre of cities. Indeed, the current skyscraper boom implies a deepening and accelerating of this tendency toward a centralisation of economic activity in the world’s leading global cities. For example, the ongoing construction of skyscrapers in central London and Canary Wharf reflects the fact that global cities accommodate the largest employers which need to be in global cities in order to both attract a large highly-educated and high-calibre workforce, and to take advantage of mass transit systems to get those employees to the workplace. Whereas it was previously assumed that

advances in technology and communication would lead to the decentralisation of work away from cities because people and firms could be located anywhere (e.g. see Webber, 1968); the ground truth is that the exact opposite has occurred with an acute centralisation of work and living that has put the skyscraper centre stage in understanding how the production of vertical cities is a conscious fashioning of capacity for centralisation in globalization. But what is the future of skyscrapers after the Covid-19 pandemic?

After the 9/11 terror attacks on the Twin Towers in New York it was commonly thought that the era of skyscrapers was over (e.g. see Davis, 2001); skyscrapers would be an urban solution that would forever only be associated with the twentieth century. As proven targets for terrorists many asked whether cities would allow new skyscrapers to be built. Would people want to continue to work in skyscrapers? Would companies want to fund the construction of skyscrapers? Would firms want to rent office space in skyscrapers? Would people want to live in skyscrapers? A surprise for many commentators was that skyscraper construction continued, accelerated, and several cities around the world experienced skyscraper booms: from New York and London to Dubai, Shanghai, and elsewhere.

Like the 9/11 terrorist attacks the Covid-19 pandemic is for some another, if very different, existential threat to the skyscraper: 'The notion of putting 7000 people in a building may be a thing of the past' (Barclays CEO; quoted in Finextra, 2020: unpaginated; cf. Wainwright, 2021). The threat now is about the risk of infection and the need for hygiene and social distancing in a world that is not zero-Covid. With the skyscraper again in some doubt it is worth thinking about what the future of the skyscraper might be. Why are skyscrapers built? Where are skyscrapers and why is that important? What help might academic literatures on global cities and international financial centres give us in understanding the why and where

of skyscrapers now and in the future? And does the emptying – with the staff of firms working from home – of commercial skyscrapers in global cities during the pandemic mean that the famous global cities paradox – whereby far reaching and integrated globalization requires global cities as strategic sites for its management, organization, control and command – must now be questioned?

The paper is structured as follows. First, common explanations for why cities contain skyscrapers are discussed to note how those accounts are partial because they tend to only focus on the reasons for any skyscraper's construction in the first instance. Second, where skyscrapers are located worldwide is examined to explain how the increasing variation in use and type of skyscrapers found in many of the world's cities today is because they plug-into<sup>1</sup> different circuits or networks of globalization according to the specificity and specializations of the cities in which they are located. In other words, the worldwide geography of skyscrapers is understood as totemic for how their host cities are located on, and connect into, different 'global circuits' (see Sassen, 2002) with relatively few cities functioning as global cities with the resources to enable firms and markets to be far more closely linked to the global economy than to their regional or national economies (Sassen, 2001). Third, by knowing the limitations of conventional explanations for why skyscrapers are built, and understanding that the type and usage of any skyscraper depends on the city and circuits of globalization in which it is located, the paper considers how global city theory – Sassen's (1991, 2001) global city concept and Taylor's (2004) Interlocking World City Network Model (IWCNM) – helps us predict that the use of skyscrapers after Covid-19 will become

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<sup>1</sup> This is not a reference to the architectural group Archigram and their 'Plug-in City' projects (see Cook, 1999); but is a metaphor – vis-à-vis Sassen's (1991, 2001, 2002) famous global city thesis – for how skyscrapers can be thought of as being like plugs that connect their host city into regional, national and global economic circuits.

more skewed towards the world's leading global cities precisely because it is that class of cities which will retain and develop the strongest demand for them.

## 2. Why skyscrapers?

What is a skyscraper? Like many familiar objects they are easily recognized but not easily or consistently defined. The Oxford English Dictionary (OED) definition is 'A very tall building of many floors or storeys.' This OED definition has the merit of conciseness but does not specify what is exactly required to be classed as a skyscraper or capture the diversity of the many types of skyscrapers that have been built (e.g. see Hill, 2017). Indeed, the history of skyscrapers is one of almost constant innovation and change which renders any precise definition merely temporary and a product of existing circumstances (e.g. see Barr, 2016; Dupré, 2013; Willis, 1995). Thus, for the purposes of the topic of this paper it is only worth saying that very tall buildings have always come into being first and foremost because they are collaborations: between architects, clients, engineers, and many others who together utilise advances in knowledge, technology, and materials to construct skyscrapers that are always a product of their own particular circumstances.

Noting the rise of the three-dimensional city and the spread of the construction of skyscrapers to cities beyond the United States Gottmann (1966) advanced an *in situ* answer to his famous question: 'Why the skyscraper?' Gottmann's focus was on individual landmarks and collective skylines and remains in spirit the predominant explanatory framework for skyscrapers (e.g. see Hill, 2017). Indeed, the proliferation of skyscrapers over the past half century across many parts of the world – be they for corporate business, residential living, as

hotels, or a mixture of these and other uses – has meant that the number of stand-alone reasons one might postulate and evidence for why skyscrapers were, or are, being built has multiplied. Following technological – e.g. the invention of the passenger elevator – and legal advances – e.g. innovations in building law and zoning regulations – at least ten common answers for why skyscrapers are produced are often advanced.

There are five predominantly economic explanations. First, skyscrapers are usually built for *profit*, as producers of the commodity of space air is monetised to generate capital returns for the developer through sales, rent, or overnight rates: a multi-storey skyscraper is, as Cass Gilbert famously said, ‘a machine that makes the land pay’. Skyscrapers are usually built, if a city’s geology and building code permits, in the CBD of large cities where land prices are high enough for construction to make economic sense in terms of providing a high ratio of rentable floor space per unit area of land. Second, as an *economic* solution, with skyscrapers serving as ‘sinks’ to absorb the surplus produced through rapid economic growth; the excess profits gleaned from financial speculation, oil production, export manufacture, tax avoidance, organized crime, and so on<sup>2</sup>. The sheer cost of skyscrapers – e.g. Shanghai Tower cost \$2.4bn – is evidence of how capital, the investment of capital into real-estate markets and property speculation, shapes the new skyscraper skylines of several cities. As Sheikh Mohammed al-Maktoum once put it ‘I would like to tell capitalists that Dubai does not need investors; investors need Dubai. And I tell you that the risk lies not in using your money, but in letting it pile up’ (Davis, 2007: 59). Third, skyscrapers are built to glorify commerce and *advertise*

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<sup>2</sup> For example, see *The Guardian*’s front-page exposé and subsequent investigations into St George Wharf Tower in London (Booth & Bengtsson, 2016; Booth, 2016). They revealed and detailed the scandal that two-thirds of the 50-storey tower’s 214 apartments are foreign owned with a quarter being owned by secretive offshore firms based in tax havens whose practice was to leave apartments empty and/or under-occupied as a strategy for, among other reasons, investment, speculation, and tax avoidance. The more general question behind *The Guardian*’s exposé is the question of ‘Who is London for?’ as housing is increasingly seen as a financial asset rather than a human right (see Minton, 2017).

corporate behemoths. From the early twentieth century, with, for example, the Woolworth, Chrysler, and General Electric buildings in New York, to recent decades, with the Bank of China Tower in Hong Kong and the New York Times Building in New York, many of the world's skyscrapers are 'branded' by the corporations that paid for them. Fourth, they are manifestations of *competition*, of urban entrepreneurialism and global city branding. For example, Shanghai's skyscraper boom, and its building of specific iconic skyscrapers in Lujiazui, is not just about competing with foreign metropolises such as Tokyo and Singapore, but also about its competition with Hong Kong (and to a lesser extent other Chinese cities – e.g. Beijing, Guangzhou, Shenzhen, Chengdu, Dalian, Shenyang) to be the predominant international facing business city of the Greater China region. Similarly, London's belated skyscraper construction boom was given the green light by London's Mayor Ken Livingstone (2000–2008) due to the perceived threat to London's position as Europe's premier global city and financial centre by Paris and Frankfurt. Fifth, skyscrapers are a part of urban tourism, not simply as hotels where lofty views demand lofty overnight rates, but with observation decks being a common feature as a part of skyscrapers being *tourist attractions and experiences*. A highlight for many city visitors is to take in the view, to orient themselves, from atop a skyscraper, to look out and down on the urban landscape (Best, 1987; de Certeau, 1984).

In addition to these five explanations there are three common political explanations for skyscrapers. Sixth, skyscrapers have been built for *political* reasons as symbols of national modernisation, such as the Petronas Towers in Kuala Lumpur which were designed to convey Malaysian modernity. Skyscrapers are expensive and consequently can also be indicative of a government's policy decision to invest disproportionately in a specific city. For example, Deng Xiaoping famously said in the early 1990s that Shanghai would pull China into the future as 'the head of the dragon'; a statement that led to not just financial reforms and



multinational investment in Shanghai, but also strong support from the Chinese central government to make Shanghai stand-out, to position it on the global stage. Seventh, from an early skyscraper like the Flatiron (Fuller) Building (New York, 1902, 87m), to the CN Tower (Toronto, 1976, 553m), to the super-tall Burj Khalifa (828 metres, completed 2010), cities have played the game of making a *symbolic statement*, of global status-seeking, of place-making – to contain the world’s tallest structures so as to not only advertise their legitimacy, wealth, power, success, and modernity, but also to gain instant fame and recognition on the world stage: ‘A huge tower makes nowhere suddenly into somewhere’ (Sudjic, 2005: 358). Eighth, skyscrapers as forms of *propaganda* with national leaders (often authoritarian) commissioning often spellbinding triumphalist trophy skyscrapers to intimidate their opponents and glorify their rule and hold on a system of governance. Perhaps the most notorious example of the ‘waving of the flag’ to date is the Ryugyong Hotel in Pyongyang.

Finally, there are two predominant practical ‘solution’ explanations for skyscrapers. Ninthly, as a *functional* and *technical* solution for housing both growing business activity and the residential demands of a city’s population: ‘If skyscraper construction had stopped in 1990, one would say that the tallest skyscrapers are made of steel, built in the United States, and are office buildings. Today, though, the tallest towers are made of concrete or composite, erected in Asia or the Middle East, and are likely to be residential or mixed use’ (William F. Baker, chief structural engineer of the Burj Khalifa (The Skyscraper Museum, 2018)). Tenthly, skyscrapers are an *urban planning solution* to offset the phenomenon of urban sprawl. Despite the exaggerated claims of the L.A. School that the decentralised urban sprawl of Los Angeles would be a model for the future morphing of urban form, rather than the extreme verticality of central New York, the fact is that all cities (including Los Angeles and New York) embody an inter-play of horizontal and vertical extension whereby urban

(re)development is planned around a politics of density and verticality. Indeed, as it stands the three-dimensional city – even more acute today with the emergence of horizontal skyscrapers or ‘skybridges’ that link towers together in the sky (e.g. Marina Bay Sands (Singapore) or the American Copper Buildings (New York)) – has been overlooked in urban research and theorisation in favour of a concern for the horizontal city, explained as it is through recourse to processes generating a more-or-less ‘flat’ urban form such as suburbanization, counter-urbanization, white flight, and ghettoization.

*In nuce*, a skyscraper is built for profit, as a functional, technical, or economic solution, as a symbolic statement or advertisement, for political reasons such as propaganda, because of urban competition and the need for tourism, as part of an urban planning solution that is anti-sprawl and pro-density, to name only the most common explanations. But such *in situ* accounts of skyscrapers – or debates about skyscrapers as to which is the tallest, the worst, the most sustainable, etc.<sup>3</sup> – far from fully explain the production and diversity of skyscrapers in the twenty-first century. One reason is because of the rise over the past few decades of a truly global market in real estate, and specifically luxury real estate, which profoundly affects why a particular type of skyscraper is built and where. For example, in the ‘prime’ global cities of New York and London luxury residential skyscraper construction is constitutive of a new kind of investment that is two-fold. First, as part of a wider ‘buy-to-leave’ (investing in, rather than living in or letting) phenomenon that is affecting cities such as London and New York whereby hedge funds and investors, many foreign, are ‘parking capital’ in these cities for both security and for a favourable return (e.g. see Fernandez et al., 2016). And second, as sparkling diamantine sites of luxury for the transnational super-rich, whereby ‘signed’

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<sup>3</sup> As Sudjic (2005: 370) puts it skyscrapers both delight and appal: ‘The trouble with skyscrapers is that we cannot make up our minds about them. We lurch from celebrating them as the primitive signals of virile economic health to deploring their brutal impact on the fragile skyline of historic cities’.

residences are the ultimate positional good, have the necessary status, distinction, sign-value (Baudrillard, 1983). However, in stark contrast is, for example, the completion in 2017 of the first skyscraper in Bogotá since 1979. Built, not because of demand from the world's super-rich, but rather the product of a 'crowd funding' initiative to attract small investors that is indicative of Bogotá's place outside of 'prime' globalization, as the skyscraper is built for local rather than global reasons. In short, it is important to acknowledge the diversity of the world's skyscrapers, and how their differences might be understood and accounted for. It seems obvious that today skyscrapers are not just stand-alone structures, they are outcomes of a multiplicity of networks; ossifications of flows which differ in terms of how they 'plug into' the different relations, connections, and networks that constitute cities and globalization – a plugging-into which is profoundly geographical, varying according to where any skyscraper is constructed.

### **3. Where are skyscrapers?**

'The future is already here – it's just not very evenly distributed'

William Gibson (quoted in Trench, 1990: unpaginated)

The urban geography of skyscrapers across the world today shows that a few 'prime' global cities are exceptional, extraordinary, not because of the number of skyscrapers they contain, or the heights of those skyscrapers, but because of the usage and therefore types of skyscrapers they almost exclusively accommodate. Answering the question 'Why skyscrapers?' geographically reveals the need to think about the importance of the location, type and usage of any skyscraper. If the *raison d'être* of any skyscraper is what it does because of where it is, with how it performs because of how it connects, or 'plugs into' its

host city and the networks of globalization then explanations for why skyscrapers are constructed in the first instance are only partial explanations for any consideration of the future of skyscrapers after Covid-19.

Skyscrapers are so de rigueur it is tempting to think they are a ubiquitous and omnipresent global phenomenon, a prominent and leitmotiv feature of all cities everywhere. However, an examination of the areal distribution of skyscrapers dashes any such egalitarian hopes by further debunking the myth that globalization is global. According to the industry building data source *Emporis* the geography of the world's skyscrapers is extremely uneven: 70% (14,077) of skyscrapers are in Asia, 19% (3,842) in North America, 5% (979) in Europe, 3% (692) in South America, 2% (463) in Oceania, and 1% (148) in Africa. Thus, 96% of the world's skyscrapers are across the Global North – North America, Europe, Asia, and Oceania – which is where the global cities are located. What is more, a city's population size does not determine whether it contains many skyscrapers. In fact, the evidence shows that explosive population growth in the Middle East, Africa and Asia means that several of the largest megacities of the near future are effectively 'off the map' (Friedmann, 2002) when it comes to skyscrapers. The United Nations (Harrington, 2017) predicts that the largest cities by population size in 2030 will be: Tokyo (37.2m), Delhi (36.1m), Shanghai (30.8m), Mumbai (27.8m), Beijing (27.7m), Dhaka (27.4m), Karachi (24.8m), Cairo (24.5m), Lagos (24.2m), and Mexico City (23.9m); but if you examine the number of skyscrapers in each of these cities only half have a significant number of skyscrapers: Tokyo (578 skyscrapers), Shanghai (327), Beijing (188), Mumbai (225), and Mexico City (124); in contrast to: Cairo, Delhi, Dhaka, Karachi, and Lagos which all fail to even register amongst the Top 100 skyscraper cities (Emporis, 2021).

Skyscrapers are prohibitively expensive to build and consequently tend to be in the major business cities of the wealthiest countries in the northern hemisphere/Global North. Whilst new skyscrapers are being built across the world, especially in China and the Middle East, Africa is a notable exception. As it stands the tallest skyscraper on every inhabited continent was built in the twenty-first century, except in Africa where the continent's tallest skyscraper – Johannesburg's Carlton Centre – was constructed back in 1973. Lacking global cities, there is a lack of demand for office skyscrapers for global reasons, and a lack of demand from the world's wealthiest people for the construction of luxury residential skyscrapers on that continent (cf. Luxury hotels – e.g. Zeitz MOCAA, Cape Town) as they reside on the New York–London–Hong Kong circuit, or amongst the richer, safer, and more connected cities of the West, Pacific Rim and the Gulf.

In the world's most famous global cities skyscrapers have always been bound up with ultra-rich individuals or families, and that fact has never been more pronounced than today. The demand for exclusive premium square footage, with 'five stars' lifestyle amenities, from the transnational super-rich has become a central purpose in the market driving the construction of numerous luxury residential skyscrapers. Such skyscrapers are 'trophy' or 'oligarchitecture' constructions, built for the global super-rich, a product of foreign wealth and the financial boom, where we are told that buyers – often foreign – have their eye on the skyline and the 'bottom line' rather than the streets. The trend of 'high-living for high-fliers' requires concentrations of ultra-wealthy people, and consequently an understanding of which are the cities where the world's wealthiest individuals choose to live is instructive for understanding the geographical distribution of the world's luxury residential skyscrapers: 'New York tops the list with \$537 billion or 7.6 per cent of all billionaire wealth. San Francisco is second with \$365 billion or 5.2% per cent; Moscow third with \$290 billion;

Hong Kong fourth with \$274 billion; and London is fifth with \$213 billion' (Florida et al., 2016: 6). What is more, the trend for investment in luxury skyscrapers by the wealth elite reflects the fact that 'their real estate investment takes place primarily in first-tier global cities (e.g. London, New York, Singapore) and capitals of luxury tourist destinations (e.g. Davos, Courchevel, Cabo San Lucas, some islands in the Caribbean) and secondarily in second-tier global cities that are simultaneously urban cultural centres (e.g. Paris, Amsterdam, Miami)' (Fernandez, 2016: 2444). In short, in the 'prime' global cities of New York and London the visual impact of the rise of new luxury and designer residential skyscrapers marks out those two cities as a 'super-class' of skyscraper cities which are, following widespread gentrification, now becoming the stand-out luxury cities of super-gentrification and designer residential skyscrapers where the world's wealthiest people live and invest.

Today's skyscrapers are not the buildings of 'faceless' corporations or the epiphenomena of 'abstract' flows of capital, and neither are they all the same – outside of China the heyday of the boxy office skyscraper seems to increasingly belong to a past century. Whilst it is true that skyscrapers are built to maximise the value of the land, usually in expensive city centres and financial districts, they are nevertheless ever more varied attesting to the desire for unique skyscrapers and a differentiated built environment and skyline. For example, the residential skyscraper boom in both New York and London has been explained as a 'Battle for the skies' (Merrick, 2015) whereby those building skyscrapers in the two cities are in competition to procure the services, ambitions and imprimatur of the world's leading architects, the so-called – in journalistic parlance – 'starchitects': e.g. Tadao Ando, Norman Foster, Frank Gehry, Zaha Hadid, Rem Koolhaas, Jean Nouvel, Cesar Pelli, Alvaro Siza, Rafael Vinoly. London is said to be following New York by focusing on 'Brand' (signature) and a 'touch of luxe' as the unique selling point for its latest geography of superlatives: its

most *de rigueur* luxury residential towers. Now, it is tempting to argue that this aspect of the rise of such skyscrapers in recent years in ‘prime’ central New York and London can be explained theoretically through recourse to the structural homology of the commodity-form as outlined by Baudrillard (1983), namely, with the skyscraper having use value (for living in, working in, using) merely as an alibi for exchange value (for investment: to sell, rent, or for appreciation) and sign value (prestige, cache, differentiation). Indeed, more than two decades ago Sassen (1991) noted how it was the utility of skyscrapers (their use-value) which was the driver for their construction; whereas more recently Harvey (2015) has noted how prime urban land markets such as central New York and London are now dominated by the logic of exchange value with a skyline that is essentially a bar chart of company turnovers, surplus values, and safety deposit boxes. However, it is undoubtedly the case – with the rise of designer signature architect ‘luxury’ residential skyscrapers – that the role of image, of brand, of sign-value is a fundamental logic too, making Baudrillard’s theorisation of the commodity-sign a more complete theoretical basis for understanding the skyscraper as a commodity, and the diversity of the skyscraper as a commodity among the world’s cities. But the skyscraper is also more than just a commodity imbued with the logics of use, exchange, and sign-value; skyscrapers fundamentally differ in how they ‘plug in’, connect to, and engage with the multiplicity of networks that constitute the cities and circuits of globalization.

In this regard, the fact that South America only just surpasses Oceania and Africa in terms of demand for skyscrapers, be they commercial or residential, is instructive because it helps explain why Bogotá has a new skyscraper that is unlike any other. Perhaps the most famous skyscraper in South America today is Caraca’s infamous ‘Torre de David’ (Centro Financiero Confinanzas), a vertical slum/squat (190m) housing thousands of people that has come to

symbolise economic mismanagement in Venezuela (e.g. see McGuirk, 2014). However, in downtown Bogotá a large scale crowdfunding campaign has enabled the building of the BD Bacatá skyscraper. The world's first crowdfunded tower project, the potentially revolutionary Bacatá was financed by c.5000 Colombians, raising US\$240m with each private investor owning a minimum of US\$20,000 of equity shares with fiduciary rights allowed under Colombian law. The tallest skyscraper in Colombia (260 metres high, two towers of 67 and 56 storeys, and 1.2 million square feet) – the tallest in South America being the Torre Costanera in Chile – the BD Bacatá is the first skyscraper to grace the skyscraper-specked skyline of the Colombian capital for more than three decades, surpassing Torre Colpatria completed in 1979 at 196 metres, the Ciudadela San Martin Torre Norte completed in 1983 at 171 metres, and the 200 metre Altrio North Tower completed in 2018. Now, understanding the crowd funding background of BD Bacatá is instructive because it emphasises the limited demand, and dearth of supply (from wealthy investors and traditional institutional equity such as banks, industrialists, oligarchs, oil sheikhs, and firms) for skyscraper construction in Bogotá (as in the vast majority of the world's poorer cities) because of Colombia's unstable economy and devaluation of the Peso. With no skyscrapers constructed for more than three decades in Bogotá, the fact that a skyscraper has been funded by local investors for local reasons is telling because it is an understanding of what a skyscraper does for whom – the market for any particular skyscraper – that tells us that the BD Bacatá *is a skyscraper predominantly constructed for local, rather than global, reasons*. The BD Bacatá is a different kind of skyscraper to those skyscrapers found in leading wealthy global cities such as New York and London because it does not 'plug into' the same circuits of globalization in terms of how it was financed, who it was built for, and what it does. Let me now explain why this fact is fundamental for predicting the future of the why and where of skyscrapers after Covid-19.



#### 4. Why skyscrapers after Covid-19?

The effects of Covid-19 affected the construction of tall buildings differently around the world due to different local regulations and shutdowns; but construction continued – albeit with later construction dates. Furthermore, commercial skyscrapers were almost empty during the pandemic (except for a few essential staff for security, maintenance, etc.); with the staff of the firms occupying them now working from home or elsewhere through using ICT technologies such as Zoom and Microsoft Teams. Canary Wharf saw a c.90% decrease in commuters travelling there for work because of the pandemic (Taylor, 2021). However, in the medium and long-term the impact of the Covid-19 pandemic will be about how it has forced firms to reassess staffing needs and their adoption of hybrid-working patterns. Taylor (2021) surveyed several firms based in Canary Wharf to discover that they have no plans to abandon their skyscrapers:

‘Traditional banks have continued to pare back on staff throughout the pandemic. HSBC ... committed to maintain its European headquarters at Canary Wharf earlier this year, is in the midst of reducing its global headcount by 35,000. Barclays, whose One Churchill Place tower is 32 storeys high, is resuming redundancies after a pause during the first lockdown.

Alongside JPMorgan and Morgan Stanley, Barclays has also raised the prospect of at least some of its staff continuing to work remotely once all restrictions have been lifted. They are far from alone. Law firm Clifford Chance, which has occupied most of a one million square foot tower at Upper Bank Street for the past two decades, has indicated that agile working will remain in place as part of its phased return to the office’ (Taylor, 2021: unpaginated)

As firms become more digitally based as a product of the pandemic, a blend of virtual interaction and face-to-face contact is the most likely future for the staff of financial and corporate service firms working in the commercial skyscrapers that define the skylines of the financial districts of the world's leading global cities. A hybrid working model of in-person interactions for serendipity, creative innovation, sharing knowledge/expertise, and colleague and client interaction combined with the use of digital technologies for more routine transactional meetings. So, the question is why a global city, especially a leading international financial centre like New York or London, *needs* skyscrapers to be a leading service centre for global business given all the difficulties that Covid-19 presents for skyscrapers as places of work.

Two mutually exclusive models about global cities *indirectly* offer alternative explanations for why skyscrapers will continue to be needed in the financial districts of leading global cities, but not in other cities which are not leading international centres for the provision of financial and other business services. Let's consider Sassen's (1991, 2001) global city thesis and Taylor's (2004) IWCNM in turn to understand their differing answers for why corporate service firms demand office space in the skyscraper-laden financial districts of leading global cities.

Sassen's (1991, 2001) global city thesis has become accepted wisdom for most research on leading financial centres such as New York, London, and Tokyo. Her starting point is that 'The territorial dispersal of economic activities, of which globalization is one form, contributes to the growth of centralised functions and operations' (1994: 119). Sassen contends that with globalization there is a 'new logic for agglomeration and key conditions

for the renewed centrality of cities in advanced economies' (1994: 119). Accordingly, global cities have acquired a strategic role in the leadership and management of an increasingly complex and integrated global economy.

Sassen (1991, 2001) assigns just a handful of cities a new strategic role in globalization; a product of them acting as the most important centres for out-sourced specialized business services (a.k.a. advanced producer, commercial, or corporate services), financial markets and the production and consumption of financial innovations. Sassen argues that what has driven centralization and concentration in global cities is not the relationship between corporations and business services, but the relationship amongst business services themselves. In other words, the collective coming together of lawyers, accountants, bankers, financiers, consultants, and many more specialist corporate service workers who supply specialist knowledge and services for firms, governments, and other economic and cultural institutions across the world. Business services increasingly cluster together, not least because the specific service of any one business service firm needs to be 'packaged' alongside contributions from different but complementary business service firms. It is this 'packaged complementarity' of geographically proximate business service firms which embodies most directly Sassen's global city thesis and which marks her explicit difference from other influential thinkers about globalization (e.g. Friedmann, 1986; Alderson and Beckfield, 2004, 2007) who only emphasise the spatial concentration of corporate headquarters in world cities. Sassen popularised her new reconceptualization of the pre-existing global city concept (Heenan, 1977; Cohen, 1981) by adding this new twist to the concept of urban agglomeration, whereby the proximal links between business services in cities such as New York, London and Tokyo *are constituted for global rather than local reasons*: their strategic role is a system requirement of globalization. In other words, Sassen's global city thesis

provides a compelling reason – ‘joint production’ in a financial centre between advanced producer service firms – as to why skyscrapers will prosper in the future in the financial districts of leading global cities.

A business skyscraper in a global city is not just a construction it is also an *analytic construct*; in other words, like the global city, the skyscraper is not panegyric to the whole of the city but is rather the embodiment and ossification of the particular circuits of globalization through which any specific city is integrated into the global economy. The clusters of skyscrapers are needed as staff in the corporate service firms must be proximate to not only their colleagues but also the staff working in other professional service firms. In other words, the agglomeration of commercial service firms is not only beneficial to the growth of any said producer service firm but also essential to their collective performance of what Sassen calls ‘joint-production’:

‘Advanced services are mostly producer services; unlike other types of services, they are not dependent on proximity to the consumers served. Rather, such specialized firms benefit from and need to locate close to other firms who produce key inputs or whose proximity makes possible joint production of certain service offerings. The accounting firm can service its clients at a distance, but the nature of its service depends on proximity to other specialists, from lawyers to programmers. Major corporate transactions today typically require simultaneous participation of several specialized firms providing legal, accounting, financial, public relations, management consulting, and other such services’ (Sassen, 2001: 11)

For Sassen, global cities function as centers of finance and as centers for global servicing and management which is enabled through having specific internal interfirm geographies; i.e. a

new dynamic of agglomeration (Sassen, 2001) whereby complementary services from proximate competing firms are 'jointly produced' for transnational clients which can in contrast to those corporate service firms be based anywhere. *In nuce*, Sassen's (1991, 2001) thesis places density, agglomeration, and hence skyscrapers at the heart of any leading international financial centre because they are needed for the financial centre to effectively function both before and beyond the interruption to operations that the Covid-19 crisis has forced.

World city scholars argue that a certain class of business cities are centres of corporate control because they house the headquarters of transnational and multinational corporations (see Cohen, 1981; Friedmann, 1986; Alderson and Beckfield, 2004, 2007). The world city literature is predicated upon envisioning the world economy as a totality, as a capitalist world-system containing a hierarchy of world cities (Knox and Taylor, 1995), where skyscrapers, if they are considered at all, are only understood as functional utilitarian outcomes of the demands of that world-system urban hierarchy. This lack of interest in skyscrapers per se is evident even in the most influential of recent quantitative models, namely Taylor's (2004) IWCNM which is unusual in the world city literature because its focus, like Sassen's (1991, 2001) global city thesis, is on advanced producer services rather than the world's largest transnational corporations (i.e. *The Fortune 500*).

Taylor (2004) correlated the world-wide distribution of the office networks of 100 producer service firms in 6 sectors (accountancy, advertising, banking and finance, insurance, law, management consultancy) to identify the relative connectivity and structural relations of 315 cities, of which 34 cities are the global economy's dominant cities for the provision of commercial services. Crucially, Taylor identifies 21 cities where business service firm head-

quarters are located with four levels of significance: (i) the ‘mega’ global service centres of London and New York, which are far more significant than (ii) the ‘major’ global service centres of Chicago, Paris, and Tokyo, (iii) the ‘medium’ global service centres of Amsterdam, Boston, Brussels, Frankfurt, Washington, and Zurich, and (iv) the ten other European and North American cities that function as ‘minor’ global service centres. Of the 21 centres, 10 are in Europe, 10 in North America, and only 1 in Asia.<sup>4</sup>

The empirical results from Taylor’s (2004) model are indirectly useful for predicting the future of skyscrapers in leading international financial centres because – in contrast to Sassen’s thesis which focuses on joint-production between corporate service firms in individual cities on a case by case basis – Taylor’s model focuses on the overseas office networks of individual firms as a part of an overall worldwide network of cities from which leading firms provide commercial services (see Smith, 2014). Results from the IWCNM show the leading cities in which many of the world’s largest 100 advanced producer service firms have their most important and highest staffed offices and consequently indirectly indicates where the demand for skyscrapers across the world’s most important cities for international business is and, given the global city paradox, will further concentrate after the pandemic: ‘The Covid-19 pandemic has accelerated our digital future with remote working set to become the norm for many people. But although fewer people will be travelling into cities each day to work in the knowledge economy, the interactions they have with colleagues and clients in the city’s urban core – the most connected part of the city – will be of greater importance. So, rather than diminishing the power of global cities, these changes will potentially make them even more valuable’ (Machin and Walker, 2020: unpaginated).

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<sup>4</sup> *Europe*: London, Paris, Amsterdam, Brussels, Frankfurt, Zurich, Munich, Düsseldorf, Stockholm, Lyon. *North America*: New York, Chicago, Washington DC, Boston, Dallas, San Francisco, Los Angeles, Cleveland, Philadelphia, Minneapolis. *Asia*: Tokyo.

In short, the preoccupation in existing scholarship to focus on the height of the world's skyscrapers is a mistake. When Parker (2014: 269) argues that skyscrapers are only significant in terms of their height, dismissing the skyscrapers of Moscow and Europe *in toto*: 'these structures are insignificant on a global scale, with the Mercury City tower in Moscow being the tallest in Europe but coming in on a recent list at a paltry number 41 in the world. (London's shard comes in at 75<sup>th</sup>.)'; Or, when McNeill (2005: 42) focuses on the height of skyscrapers alone – 'of the world's 15 tallest buildings, only three are in the USA, and none are in Europe' – to argue that '[i]n debates over the future of urban form, existing western-biased theories and models are of questionable relevance' (cf. Garza and Lizieri, 2016). Both are forgetting that it is not what a skyscraper *is*, but what it *does* because of where it is that truly matters. It is not the height of skyscrapers per se that matters<sup>5</sup>; it is rather that the global functions, the architecture and cost, the style and luxury, the design and brand, of any particular skyscraper – be it a commercial and/or residential urban masterpiece – reflects the hugely disproportionate number of the global professional elite and super-rich who work and live in only a few leading global cities, and it is their global practices that count and mark the importance of any skyscraper to a global city's role, position and status. To understand skyscrapers after Covid-19 we need to understand why and where they are needed. The two models of Sassen (1991, 2001) and Taylor (2004) indirectly – this was not their intended purpose – help us understand why skyscrapers with thrive in the world's leading cities for global business and conversely why they will not in other cities where skyscrapers are built for local rather than global reasons (i.e. global city functionality).

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<sup>5</sup> On Parker and McNeill's vertiginous logic the most important skyscrapers in the world would simply be a function of height, meaning that the world's ten most important skyscrapers (in descending order) are currently located in: Dubai, Shanghai, Makkah, Shenzhen, Tianjin, Seoul, New York, Guangzhou, Tianjin, and Beijing. However, it is also important to understand that whilst all skyscrapers function to add space; the tallest skyscrapers are not necessarily the biggest skyscrapers (in terms of the supply of useable square footage) in any city because of all kinds of practical, technical and regulatory constraints on any individual skyscraper design and construction.

## 5. Conclusion

Whilst the term globalization describes an inter-dependent world of connections, relations, linkages, networks, and movement, skyscrapers are commonly only presented, and thought about, in terms of their position, materiality, and symbolism. As if skyscrapers only function in the contemporary metropolis – like castles, palaces, cathedrals, temples, or pyramids have long done – as stand-alone curiosities or indelible symbolic monumental landmarks, as megastructures that exhibit the apotheosis of wealth and status in any urban society. But many of today's cities are startlingly vertical not only because they are increasingly horizontal – immersed in globalization, escaping the grid of nation-states as co-constitutive sites in a world city network (Beaverstock et al., 1999, 2000), connecting together their central business districts and elite residential enclaves in relational ways that go far beyond the supply of office and apartment space –, but also because skyscrapers are nowadays more than just a manifestation and an on-going metamorphosis of socioeconomic and technological change: skyscrapers are *global society* made durable, money flows skyward with skyscrapers starkly marking the extreme differences of function and inequalities of wealth, not only within individual cities, but between the world's thousands of cities.

A global optic sees that – in what is historically speaking an unprecedented era of cities, be it with regard to demography, capitalism, globalization, urbanization, or even the Anthropocene – cities have taken a 'vertical turn' (Graham, 2016; Parker, 2015), skyscrapers are multiplying, increasing in number and scale in many of the world's major cities as the market for high buildings expands (Emporis, 2021). Cities now hold more skyscrapers, and more



cities now boast skyscrapers, than ever before, and crucially the construction of skyscrapers has continued apace with more usages and therefore types (Emporis, 2021) of skyscrapers than ever before. In what estate agents describe as the world's 'prime' global cities of London and New York there are not only ever more new commercial office skyscrapers – e.g. London's panoramic skyline is a camaraderie of outré monikers: Gherkin, Shard, Walkie Talkie, Cheesegrater, Spire, Wodge –, but also a proliferation of new luxury residential skyscrapers – e.g. those overlooking Manhattan's 57<sup>th</sup> 'Billionaire' street or the new Hudson Yards development – that cater to, and are totemic vitrines for the so-called '1%', the super-rich (be they ultra-high-net-worth individuals or billionaires – see Hay & Beaverstock (2016)), pinnacles of the New York-London axis (cf. the trend of 'super-gentrification' through basement construction over the past decade in the two prime global cities (e.g. see Burrows et al., 2021)) and the rise over the past two decades of a global luxury real estate market. Indeed, what the increased distribution of skyscrapers across the world today shows is not a shift in global power to Asia (cf. Parker, 2014), the volume of vertical urbanization does not indicate a power shift per se, but rather the trend toward a further concentration of wealth (e.g. see Atkinson, 2020), functions, and power in leading global cities such as London and New York; the world's most connected 'Alpha' or 'prime' global cities are where often the most expensive and almost always the most important skyscrapers for globalization are located.

The most important attributes of any skyscraper are usage and location. These attributes provide the fullest answer to the question 'Why skyscrapers after Covid-19?' Extreme variation in skyscraper usage across the world's cities indicates the fundamentally different logics for skyscraper construction that are in play depending upon any skyscraper's location. In the most globally connected corporate and financial capitals skyscrapers, often clustered

together, are largely part of a mixed business and residential urban environment where there is acute competition for prestigious high-value central sites. The skyscrapers in these cities, whilst having individual differences connect into the 'premium' high-value networks of their host city and neo-liberal globalization. Away from the world's leading global cities skyscrapers are ostensibly built for other reasons. The cities of Kuala Lumpur, Taipei, Dubai and Jeddah for example have all branded themselves in recent decades as containing the 'world's tallest skyscraper', precisely because a super-tall or mega-tall skyscraper addresses these cities need to place themselves 'on the map' to connect more effectively into such highly competitive globalized markets as tourism, leisure, real estate investment, finance and business. Therefore, the tendency for most research and commentary to focus on the height of skyscrapers, or the number of skyscrapers any city contains, is misleading. The success of global cities, financial districts, and the firms within them depends above all else on geography – 'where you are' matters and skyscrapers will be a key component in the built environment of the post-pandemic economies of global cities, as opposed to the vast majority of the world's cities, precisely because leading global cities will *need* skyscrapers even more than they did before the arrival of Covid-19 as they alone become more essential (e.g. as established hubs for many professional fields and specialisations) and valuable (e.g. for raising venture capital and making global investments) as central locations for the practice of globalization.

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