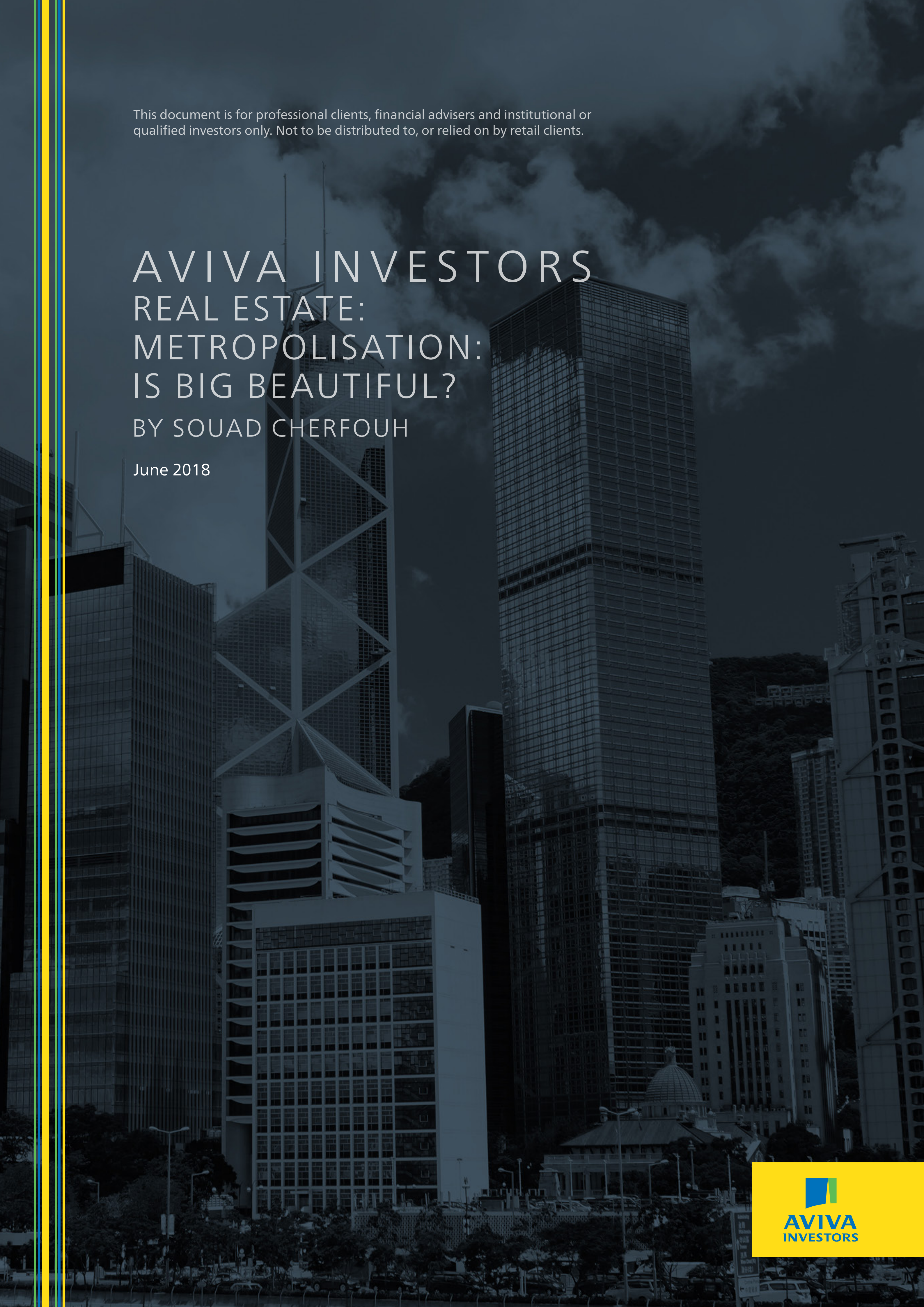

AVIVA INVESTORS REAL ESTATE: METROPOLISATION: IS BIG BEAUTIFUL?

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Main responsibilities

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INTRODUCTION

Over the past two to three decades, trends in global economic growth have changed considerably in two important ways. Firstly, many developing economies, especially in Asia and in central & eastern Europe have enjoyed a significant catch-up effect to the developed world. Most real estate investors will be well aware of this. The second change is generally not so well-known, however: the growth in regional economic disparities within developed economies. The largest cities within a country are tending to strongly outperform smaller centres. This phenomenon is known as 'metropolisation' and is the subject of this paper. In it we:

- Describe how trends in global economic growth have changed in recent decades;
- Explain the drivers of these changes;
- Present evidence for the phenomenon of metropolisation;
- Show how metropolisation may be affecting real estate occupier markets and
- Suggest how an awareness of metropolisation might inform real estate investment strategy.

Image shown: Hong Kong Corporate Buildings.

GLOBAL GROWTH PATTERNS HAVE CHANGED RADICALLY IN THE PAST TWO TO THREE DECADES:

Prominent theories of economic growth[1] have long suggested that, over time, inequalities between both regions and countries should tend to even out. The rationale is that richer places with more capital than investment opportunities would direct resources to poorer places with untapped potential, expedited by technological know-how.

For much of the 20th century the evidence tended to back up the theory for industrialised countries. In the period after World War II, there was considerable convergence of (non-communist) European countries' living standards to those in the US. For instance, real output per head in Italy grew from 33 per cent of the US level in 1950 to 62 per cent in 1973. This period also saw a convergence between poorer and richer regions within industrialised countries[2].

As geographical differences dwindled within and between industrialised economies, the gap between those economies and the rest of the world widened, with very few exceptions[3]. US incomes, adjusted for living costs, grew from nine times those of the world's poorest countries in 1870, to nearly 50 times by 1990[4].

In the past two to three decades[5], however, both of these trends have changed significantly. Firstly, many poorer economies have seen much stronger growth than richer countries. At the same time, regional inequality within rich countries has increased.

The first change, the catching up of many poorer countries, is generally well known, though the scale of the unprecedented outperformance is worth recalling nonetheless. According to the World Economic Forum[6], from 1990 to 2007, average annual per capita growth in developing economies was 2.5 percentage points higher than in the advanced economies. In 2000-2007, the gap widened to 3.5 percentage points.

The second change is generally not so widely understood, however. This phenomenon has been dubbed 'metropolisation'. It observes that the larger cities in developed economies enjoy significantly greater growth in productivity, innovation, economic output, employment and population than lagging regions[7].

[1] The best known is probably that of Nobel winner Robert Solow, first published in 1956
[2] https://www.economist.com/news/briefing/21730406-what-can-be-done-help-them-globalisation-has-marginalised-many-regions-rich-world
[3] The major exceptions were in Asia, notably Japan's industrialization in the early 20th century and South Korea, Taiwan, Hong Kong and Singapore's in later decades.
[4] https://www.economist.com/news/briefing/21730406-what-can-be-done-help-them-globalisation-has-marginalised-many-regions-rich-world
[5] The exact timing is unclear, regional disparities may have begun to show up earlier in the US than elsewhere (https://ftalphaville.ft.com/2014/08/13/1926902/us-regional-inequality/). Both trends are increasingly apparent as the 1990s progress.
[6] https://www.weforum.org/agenda/2018/02/the-future-of-economic-convergence
[7] Metropolisation is distinct from urbanisation, the general increase in the proportion of people living in urban areas.

GLOBALISATION, DIGITALISATION AND THE RISE OF THE KNOWLEDGE ECONOMY HELP TO EXPLAIN METROPOLISATION:

It appears very likely that the two trends as described above are related and a number of developments over the past two to three decades immediately suggest themselves as drivers.

The first is economic globalisation which really takes hold[8] in the period in question. Globalisation has brought the developing world into the global supply chain as manufacturing activity has moved to these economies. It has generated wealth and opportunities for these economies through the 'catch-up effects' of directing capital to places with untapped potential. But it has also meant the demise of long-standing manufacturing activities in many parts of the developed world.

A second driver is the rise of the knowledge-intensive service economy in developed economies. Growth in knowledge-intensive sectors is highly dependent on the depth of human capital and the network effects that allow the sharing of ideas and information. It tends to mean that people and firms will come to concentrate in certain areas. The 'agglomeration effects' of having access to other firms in the same industry and access to larger pools of skilled labour is the key benefit.

A third, and related, driver is digitalisation – the implementation of digital technologies to change business practices and generate new value-producing opportunities. Digitalisation has accelerated the shift to knowledge-intensive activities by allowing cities to be connected globally and therefore develop stronger clusters of talent and innovation.

Image shown: River Thames, London, England.

[8] The FT defines globalisation as "the integration of economies, industries, markets, cultures and policy-making around the world" - http://lexicon.ft.com/Term?term=globalisation. The setting up of the World Trade Organisation in 1995 is a key globalisation milestone, with China's accession in 2001 another. Likewise, the fall of communism in Europe in 1989/90 and the subsequent market reforms in these economies.

EVIDENCE FOR METROPOLISATION IN EUROPE:

The term 'metropolisation' derives from the Greek word metropolis which in ancient times signified the 'mother city' of a colony: the major hub from which settlers were sent out. For our purposes, the term metropolis signifies an important centre for regional or international commerce and communications. Metropolisation designates the increase in economic weight of the largest centres compared to smaller ones.

If metropolisation is in fact taking place, the key markers we should expect to see in the largest metropoles (cities/regions) include:

– Stronger economic growth;

– Stronger productivity growth;

– Stronger population & employment growth;

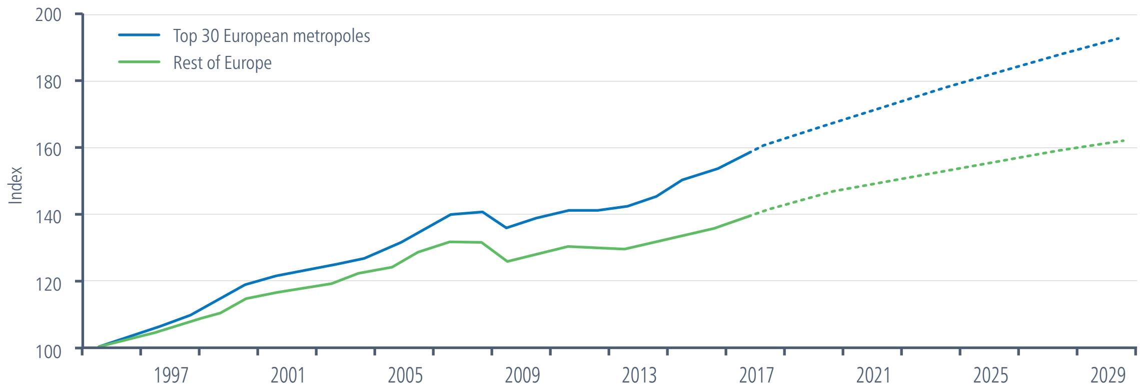
– More innovation.

And there is considerable evidence to support all of these trends. Here we mostly present evidence for metropolisation in Europe though this is not just a European phenomenon.

LARGE DISPARITIES IN ECONOMIC GROWTH AT THE REGIONAL LEVEL:

Overall growth in Europe in recent decades has generally been far from stellar. The aggregate data masks a significant disparity in performance within European regions. Using region-level data from Oxford Economics, we estimate that GDP growth averaged two per cent per year in Europe's top 30 metropoles between 1995 and 2017 compared to just 1.4 per cent per year for the rest of Europe.

Figure 1: GDP growth in Europe



Source: Oxford Economics

IN PART DUE TO SIGNIFICANT DIFFERENCES IN PRODUCTIVITY PERFORMANCE:

Much of this growth outperformance is driven by superior productivity. Differences in GDP per capita between European countries have tended to shrink in recent decades. But within their own borders European countries are seeing increasing gaps between higher and lower-performing regions.

Figure 2: Widening disparities in productivity across metropoles

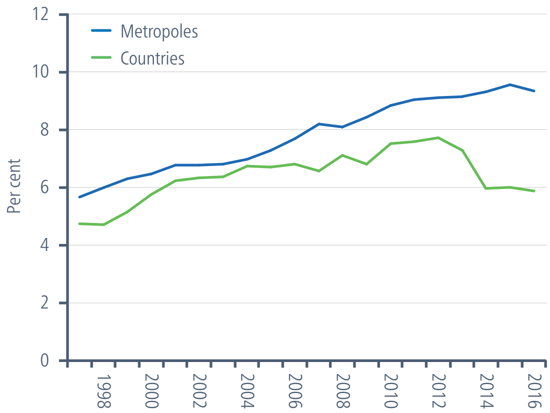
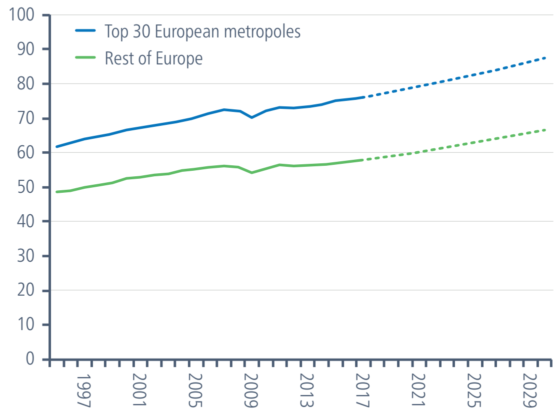


Figure 3: Productivity - average GDP per worker



Source for figures 2 & 3: Oxford Economics

The same trend can be seen in other developed economies. For instance, the OECD reports that the productivity gap between top-performing regions and others in its member countries widened by almost 60 per cent in the past two decades[9].

Image shown: Aerial view of Berlin skyline panorama, Germany

[9] OECD Regional Outlook 2016.

EUROPE’S LARGEST CITIES ENJOYING FASTEST POPULATION AND EMPLOYMENT GROWTH:

Though overall population growth in Europe has been modest for many years, looking at aggregate numbers hides a couple of interesting trends. One is ongoing urbanisation as people continue to relocate from rural areas. A second is that not all urban centres are witnessing the same degree of population growth, with larger cities, especially capitals, taking the lion’s share. Between 1995 and 2017, the population living in the top 30 European metropoles is estimated to have risen by 13.2 per cent compared to 6.7 per cent for Europe as a whole. Unsurprisingly, employment growth has also been far more impressive in these bigger centres.

Figure 4: Population growth in Europe

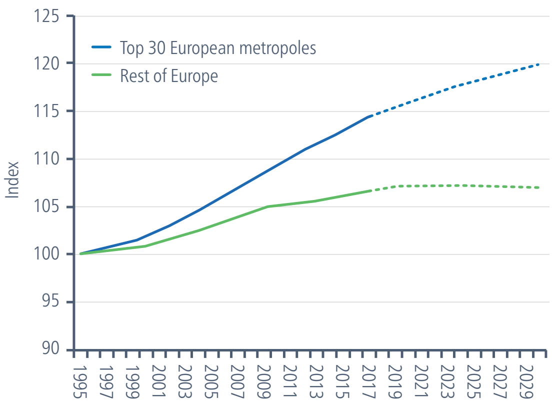
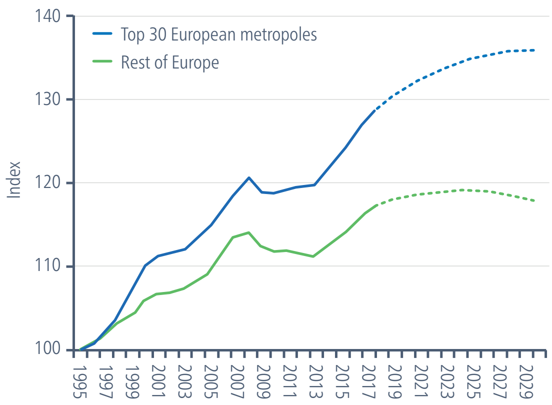


Figure 5: Employment growth in Europe



Source for figures 4 & 5: Oxford Economics

DRIVEN BY INNOVATION AND GROWTH IN KNOWLEDGE-BASED SECTORS:

The growth of the knowledge economy varies greatly in different regions within developed economies. In particular, the largest cities have clear advantages in terms of human capital and networking opportunities and many of these have enjoyed the greatest growth in knowledge-based sectors such as finance, IT and professional and scientific activities. Employment growth in these sectors has been far greater than in most other sectors, with this growth heavily weighted to the largest cities.

Figure 6: Employment growth in Europe

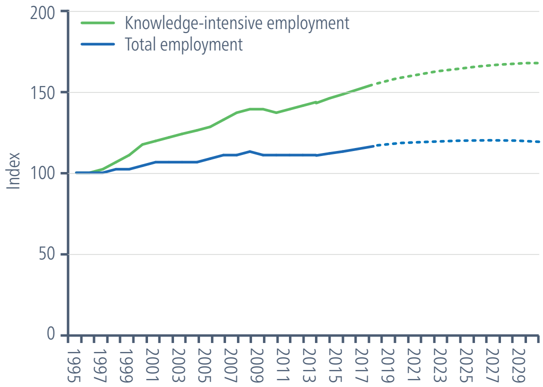
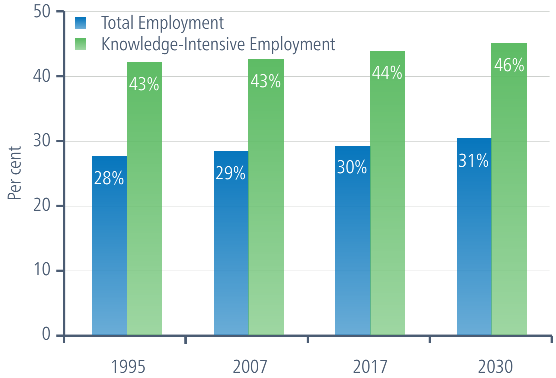


Figure 7: Top 30 metropoles' share of European employment



Source for figures 6 & 7: Oxford Economics

Image shown: La Defense Paris, France.

POPULATION, ECONOMIC ACTIVITY AND EMPLOYMENT ALL INCREASINGLY CONCENTRATED IN TOP CITIES:

As a result of these developments, all major indicators of economic activity are becoming increasingly concentrated in the largest metropoles. According to data from Oxford Economics, the top 30 metropolitan areas in Europe generated around 36 per cent of European GDP, 30 per cent of the continent's employment and 32 per cent of retail spending in 2017 from a population share of just 26 per cent.

Figure 8: Top 30 metropoles' share of European population

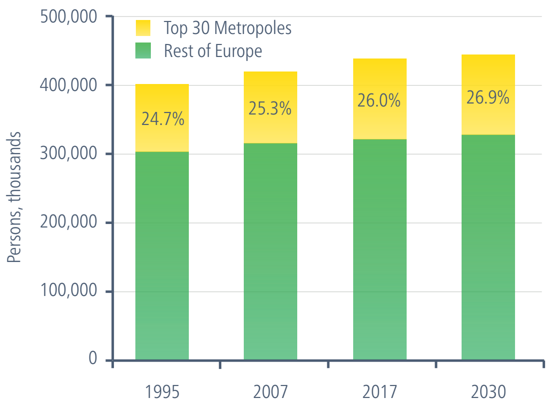
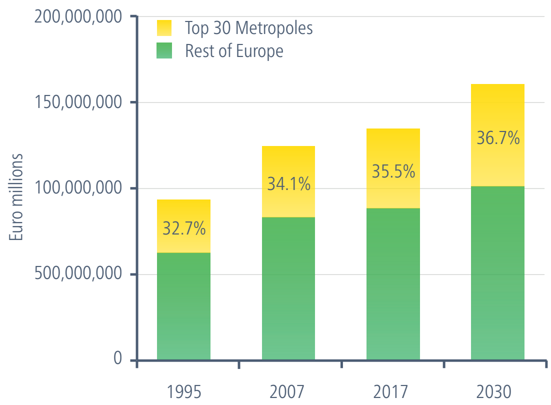


Figure 9: Top 30 metropoles' share of European GDP



Source for figures 8 & 9: Oxford Economics

Figure 10: Top 30 metropoles' share of European retail spending

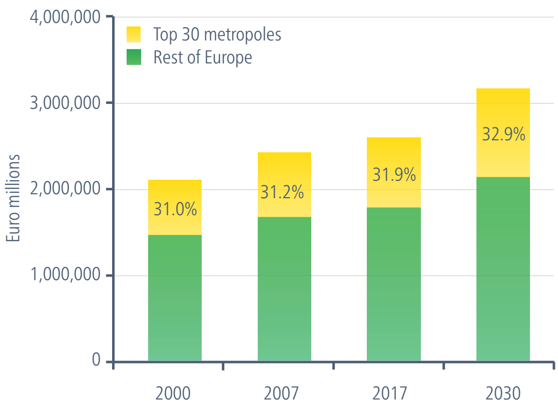
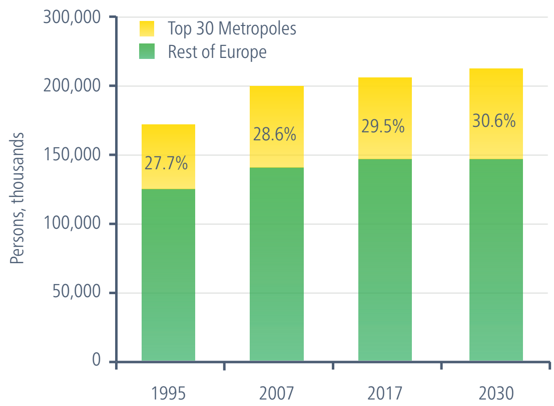


Figure 11: Top 30 metropoles' share of European employment



Source for figures 10 & 11 Oxford Economics

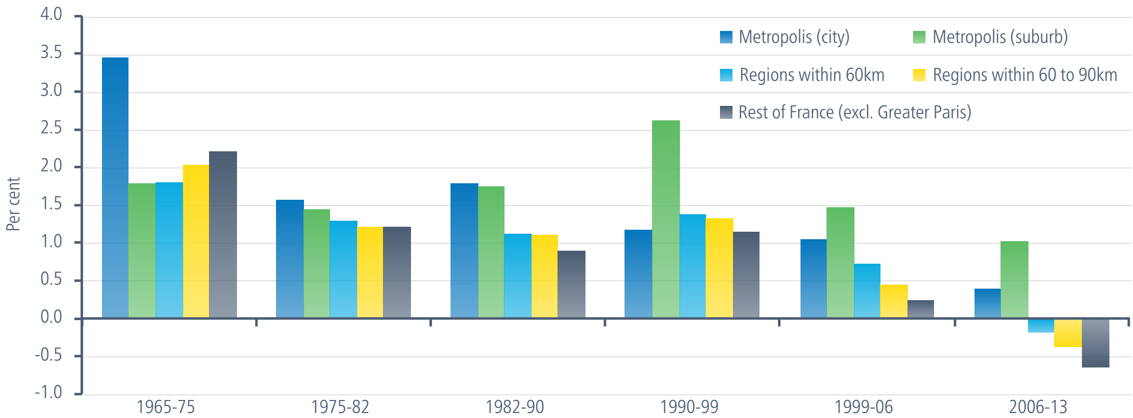
Evidence for metropolisation in France:

We can also look specifically at some evidence for metropolisation in France. Though the evidence for Europe overall is compelling, it is worth drilling down into the French experience as France is a large, core European real estate market with extensive regional employment data. We have analysed the French data in two ways and both provide evidence that employment growth has become increasingly concentrated in France's largest metropolitan areas.

In the first analysis, we look at employment growth broken down by core metropolitan areas, suburbs and regions at varying distances from the larger metropoles. The analysis shows that:

- from 1968 to 1990, all areas were enjoying employment growth with the core metropoles outperforming;
- from 1990, the suburban parts of the largest cities have enjoyed strongest employment growth;
- since 2006, which largely coincides with the period since the global financial crisis (GFC), areas outside the metropoles have seen negative employment growth.

Figure 12: Employment growth in 12 regional metropoles in France



Source: France Strategie based on INSEE data

In the second analysis, we look at employment growth by size of urban area and this analysis also points to a trend of employment concentration in the largest cities:

- Between 1968 and 1999, employment growth was relatively widespread across urban areas of different sizes, but there is greater differentiation in performance since 1999;
- Again, the period since the GFC shows a break in this pattern with the largest cities proving much more resilient than the rest of France.

Table 1: Employment by size of urban areas

Average annual growth in employment	1968-75	1975-82	1982-90	1990-99	1999-2006	2006-13
Greater Paris	3.00%	0.70%	1.70%	0.50%	0.40%	0.10%
Urban areas above 500,000 inhabitants	3.00%	1.50%	1.70%	1.30%	1.10%	0.40%
Urban areas between 200,000 and 500,000 inhabitants	3.10%	1.80%	1.30%	1.30%	0.50%	-0.30%
Urban areas between 100,000 and 200,000 inhabitants	2.90%	1.60%	1.00%	1.10%	0.30%	-0.50%
Urban areas below 100,000 inhabitants	2.90%	1.80%	1.40%	1.30%	0.50%	-0.60%
France	2.50%	1.20%	1.30%	1.10%	0.60%	-0.20%

Source: France Strategie based on INSEE data

EFFECTS OF METROPOLISATION CAN BE SEEN IN REAL ESTATE OCCUPIER MARKETS:

Given the economic trends that we are describing here have been underway for at least a couple of decades, their impact on real estate occupier markets should be visible by now. Growth in economic activity, productivity, innovation, population and employment all have important implications for real estate occupier demand and the growing disparities between developed-economy cities/regions in these indicators suggests similar disparities in occupier demand. Specifically:

– The fastest-growing metropoles should also enjoy strongest occupier demand for all types of real estate and, in the absence of a commensurate supply response, stronger rental growth.

– Stronger occupier demand should also manifest itself in companies relocating to larger cities in order to benefit from the agglomeration effects they offer.

US DATA SUGGEST REAL ESTATE OUTPERFORMANCE IN THE LARGEST METROPOLES:

As outlined above, metropolisation is not specific to Europe but is a developed-world phenomenon. The greater availability of occupier market data for the US allows us to look at this market for signs of an impact from metropolisation on real estate. And these data suggest that, for both office and retail sectors, the largest cities have indeed performed best in recent years with rental growth in the top 30 metropoles strongly outperforming the rest of the market since 2013. By contrast, prior to the GFC, the rest of the US outperformed.

Figure 13: Rental growth in the US office markets

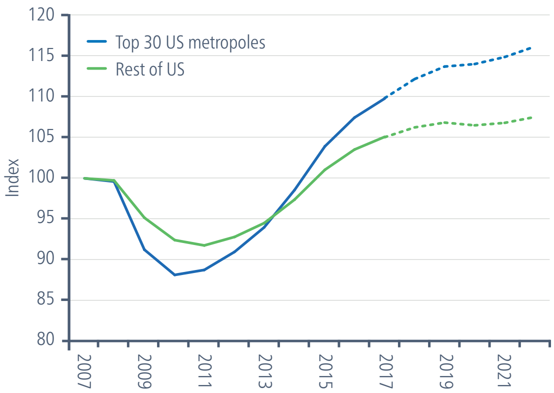
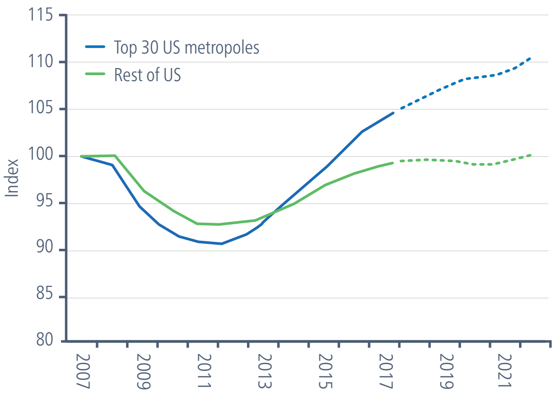


Figure 14: Rental growth in the US retail markets



Source for figures 13 & 14: Costar

Image shown: The Chicago River, US.

WITH THE MOST DYNAMIC OCCUPIER MARKETS LOCATED IN INNOVATIVE CITIES:

Crossing data on innovation with real estate data provides insights into the impact of innovation on occupier markets. The Innovation Cities Index 2016-17 provides a ranking of cities based on their rate of innovation. Of the top 100 global cities, 36 are in the US. Of these, 21 are included in the top 30 US metropoles identified in our analysis, reflecting the strong contribution of large cities to innovation. In addition, comparing the occupier market dynamics of the 36 US entrants in the Top 100 innovation cities confirms the most innovative cities have enjoyed stronger rental growth since 2011 in both office and retail sectors.

Figure 15: Rental growth in the US office markets

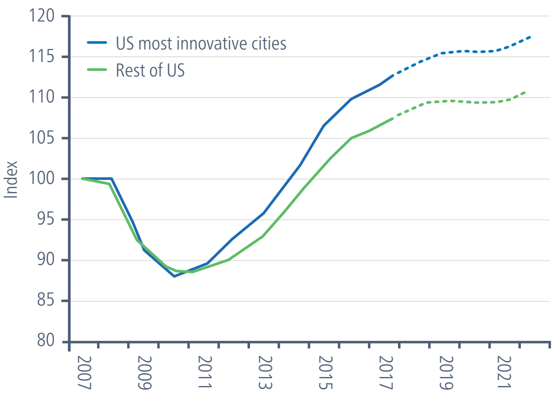
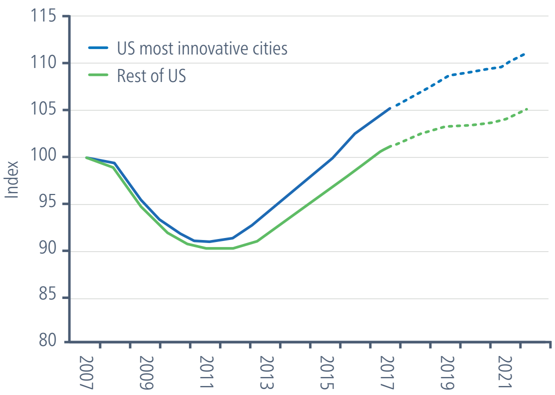


Figure 16: Rental growth in the US retail markets



Source for figures 15 & 16: Costar

COMPANIES INCREASINGLY RE-LOCATING TO CORE LOCATIONS IN THE LARGEST CITIES:

Corporate location decisions are, of course, multi-faceted and a wide range of factors need to be taken into account. JLL, for instance, lists factors such as access to talent and skills, availability of suitable real estate, city dynamism, industry clusters, accessibility, and regulation and taxation as well as the company's own business goals and vision[10].

With the rise of the knowledge economy, however, the agglomeration effects of knowledge-sharing and networking opportunities are rising in importance. As such, we would expect companies in the knowledge-intensive sectors to increase their presence in the largest cities as these offer them greatest potential in respect of:

– The 'war' for talent, as long-term access to skilled workforces is a crucial component of relocation decisions. This talent is increasingly to be found in the largest cities that offer high quality of life, density, mixed-use neighbourhoods, walkability, accessibility and a strong cultural offer.

– The growing need to cluster in order to be close to clients and competitors within a globalised and service-orientated economy.

In addition, digitalisation and the growing importance of technology increasingly puts IT functions at the heart of a company's core competences and means these functions need to be located closer to other central functions. While in the past, IT was often seen as a back-office function to be located in a suburban or other lower-cost location, it is now central to most companies' decision making and more likely to be located in core locations in the largest cities.

And there is growing evidence major corporations are increasing their presence in the largest cities. Though much of the evidence is anecdotal, it is powerful nonetheless. Examples are presented here for the US, for central London and for Paris.

[10] "The Promise and Perils of Location Decisions", JLL.

RELOCATION PROCESS MAY BE MOST ADVANCED IN THE US:

The process is probably most advanced and best documented in the US where a great many examples can be found[11]. The flight from cities to the suburbs happened far more dramatically in the US than in other developed economies, notably in the 1950s to 1980s. This left far more opportunities for the redevelopment and reoccupation of downtown areas. This process now appears to be well under way with companies from a broad range of industries[12] relocating downtown to access the talented young workforce that is increasingly attracted to city living. Recent examples of major relocations include:

Company (current location)	Relocation location (date)
General Electric HQ (Bridgeport, Connecticut)	Boston (2021)
Mariott International (Bethesda, Maryland)	Washington (2022)
McDonald's HQ (Oak Brook, Illinois)	Chicago (2018)
Kraft Heinz (Northfield, Ilinois)	Chicago (2016)
Motorola Solutions (Schaumburg, Illinois)	Chicago (2016)
Archer Daniels Midland (Decatur, Illinois)	Chicago (2014)
Caterpillar (Peoria, Illinois)	Deerfield – Greater Chicago (2017)
Expedia HQ (Bellevue, Washington)	Seattle (2019)
Pinterest HQ (Palo Alto, California)	San Francisco (2012)
HomeAdvisor HQ (Golden, Colorado)	Denver (2018)
Arctic Cat (Plymouth, Massachusetts)	Minneapolis (2016)

CENTRAL LONDON SEEING GROWING SHARE OF TAKE-UP FROM TECHNOLOGY, MEDIA & TELECOMMUNICATIONS (TMT) FIRMS:

Meanwhile, in central London, there are growing signs that TMT firms are accounting for an increased share of take-up to complement the sectors that traditionally dominate this market, such as finance and professional services. According to Knight Frank, there have been spells in recent years where the TMT sector has been the most active[13]. This performance has been helped by a number of very large lettings to some of the world's most important IT firms including:

- Google's 11-storey HQ in King's Cross, home to over 800 of its engineers;
- Apple's taking of c500,000 square feet at the iconic Battersea Power Station development to relocate and consolidate 1,400 employees from a range of sites around London;
- Cisco's doubling of its central London footprint with the opening of a new office in Finsbury Square to accommodate over 300 employees;
- Facebook's 800-employee office off Oxford Street, the company's biggest engineering hub outside the US.

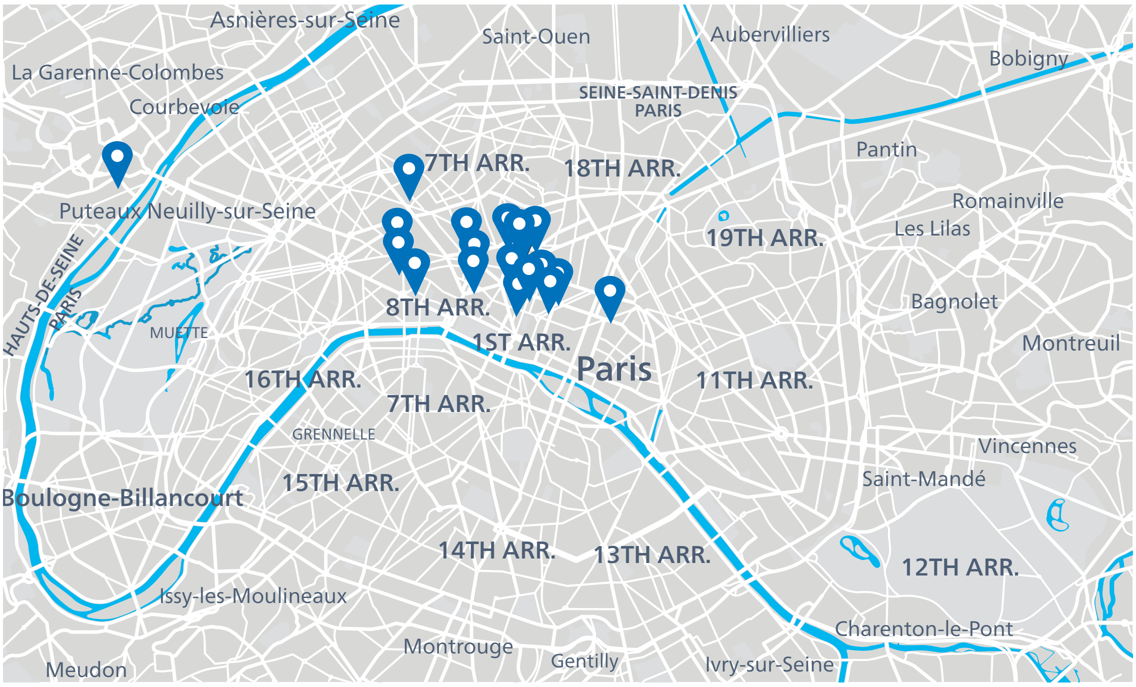
[11] Core Values: Why American Companies are Moving Downtown, Smart Growth America / Cushman & Wakefield, 2015
[12] Ibid
[13] http://uk.businessinsider.com/london-tech-firms-claiming-the-most-office-space-2015-11

TECH COMPANIES FAVOUR CENTRAL PARIS, ESPECIALLY THE CORE AREAS:

Paris's central business district has traditionally hosted businesses from the legal services, consulting and finance sectors. In recent years, however, there has been growing demand from the technology sector, both from domestic and major global companies. Examples include:

- Google France's 10,000 square metre HQ near the Gare St Lazare and its plan to add a further 6,000 square metres in nearby buildings to host 1,000 employees;
- Airbnb's communal office with views of the Eiffel Tower and the Opera Garnier;
- Facebook, including an artificial intelligence research centre, its third overall and first outside of the US;
- Twitter's 2012 opening;
- Classifieds company Le Bon Coin;
- Criteo, a company that works with internet retailers to generate personalized online display adverts, currently operating in over 30 markets, and headquartered in central Paris;
- Altice Media: Paris Sud Arr 15 (c61,000 square metres in multiple deals 2016-17);
- Renault Credit: (RCI) Paris Centre West Arr 2 (7,500 squares metres 2017)

Figure 17: Location of take-up by tech companies since 2008 (non-exhaustive list)



Source: BNPPRE

Note: The map include the following companies: Airbnb, Google, Facebook, Leetchi, Blablacar, We work, Criteo, Indeed, Twitter, OuiCar, Le Bon Coin, Deezer, Price Minister, Booking.com, Free, Meetic.fr, Dailymotion, Linkedin France, Groupon, Sarenza.

Figure 18: Location of take-up by tech companies since 2008 (non-exhaustive list)

Source: BNPPRE

Image shown: Aerial panoramic cityscape view of Paris, France.

CONCLUSION AND IMPLICATIONS OF METROPOLISATION FOR INVESTMENT STRATEGY:

In conclusion, as trends in global economic growth have changed in recent decades; the largest cities within a country have outperformed smaller centres significantly. This process of Metropolisation is the result of three key phenomena. First, globalisation: global flows have tended to concentrate and therefore shape specific geographies. Second, the shift from manufacturing to a knowledge-intensive economy. This shift to focus on strong economies of scale and networking has benefited the largest urban areas. Finally, we have seen digitalisation expedite this phenomenon.

As a result, the largest metropoles have exhibited stronger economic, productivity, population and employment growth. In addition, higher concentrations of innovation have been prevalent. Subsequently, these fastest-growing metropoles have also started to enjoy stronger occupier demand for all types of real estate and, in the absence of a noteworthy supply response, stronger rental growth. Stronger occupier demand has been observed which has manifested itself in companies relocating to larger cities in order to benefit from the agglomeration effects they offer.

We believe the major drivers of metropolisation have much further to run and, as such, it is important to look at the implications for real estate investment strategy in developed economies.

INVEST IN THE BIGGEST AND MOST PRODUCTIVE CITIES

The key implication is the geographic focus of investors should be concentrated on the largest and most successful metropoles in order to drive investment outperformance. Real estate is more local than ever and, instead of the country-level strategy employed by many, it may be more beneficial to focus on developing expertise at the city level. With economic activity, employment and population becoming more and more concentrated in a limited number of centres, it could be worth real estate investors employing a more concentrated strategy too.

DIVERSIFY BY SECTOR NOT CITIES

At a sector level, it follows that it is preferable to adopt a multi-sector strategy in a few key centres than to specialize by sector and then diversify geographically.

EMERGING SUB-MARKETS MAY OFFER REQUIRED RISK ADJUSTED RETURNS

In terms of risk appetite, this analysis suggests investors seeking to take more risk could do so by acquiring secondary assets in stronger centres rather than buying in secondary/weaker centres. A focus on emerging sub-markets in the stronger centres may also be a way of taking risk and employing the expertise that can come from a concentrated investment focus.

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