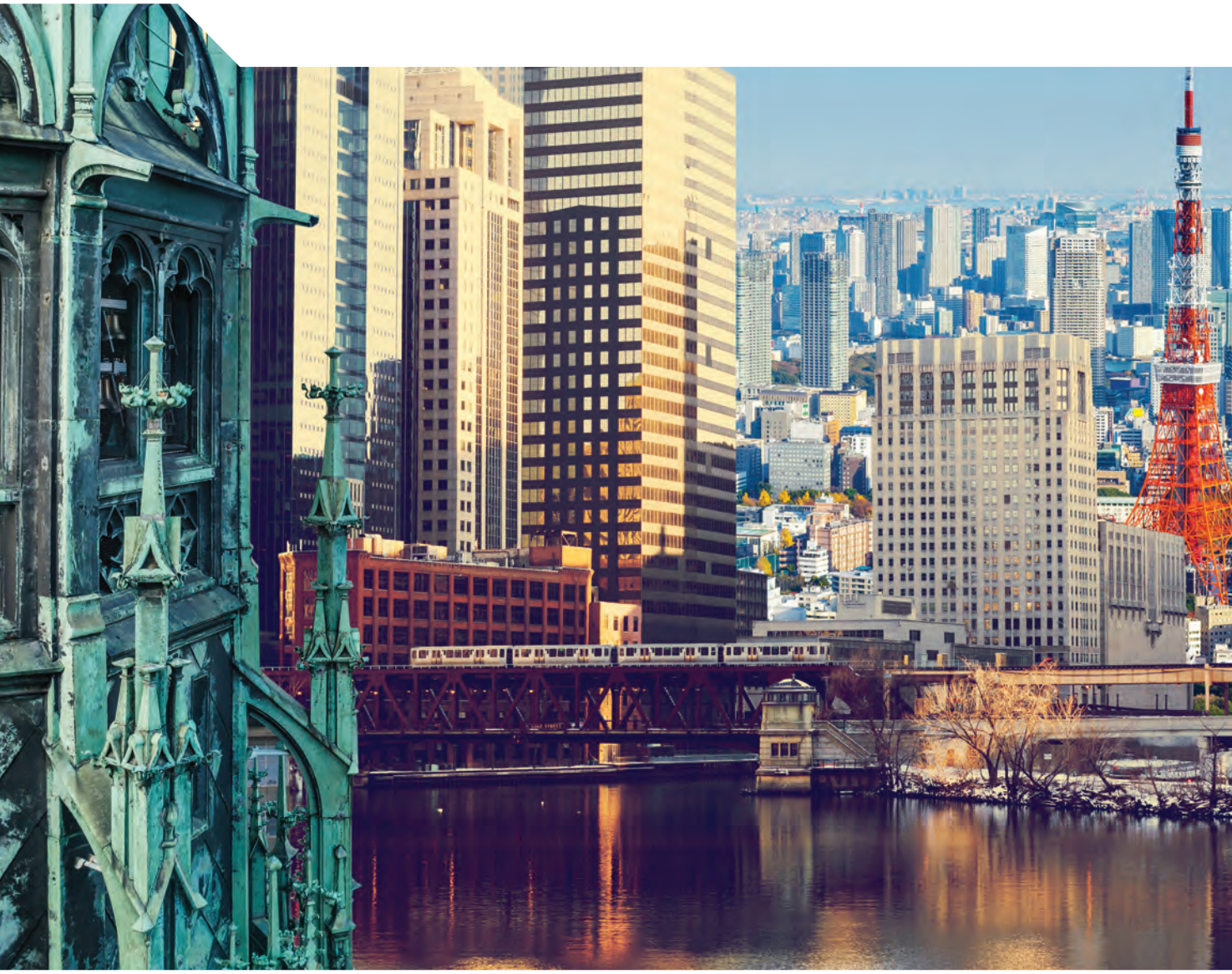
The Metropolitan Century

UNDERSTANDING URBANISATION AND ITS CONSEQUENCES

Policy Highlights



OECD

This brochure is a summary of the publication *The Metropolitan Century: Understanding Urbanisation and its Consequences* (OECD Publishing, Paris). The full publication is available on the OECD iLibrary at http://dx.doi.org/10.1787/9789264228733-en.

Acknowledgements

This brochure was prepared as part of the OECD "Urban Trends and Governance" project, which benefitted from financial support of the European Commission – DG Regional and Urban Policy.

Urbanisation in the 21st century

By the end of this "Metropolitan Century", most of the urbanisation on our planet is likely to be completed. Already today, more than 50% of the world's population lives in cities. This figure is projected to reach 85% by 2100. Within 150 years, the urban population will have increased from less than 1 billion in 1950 to 9 billion by 2100.

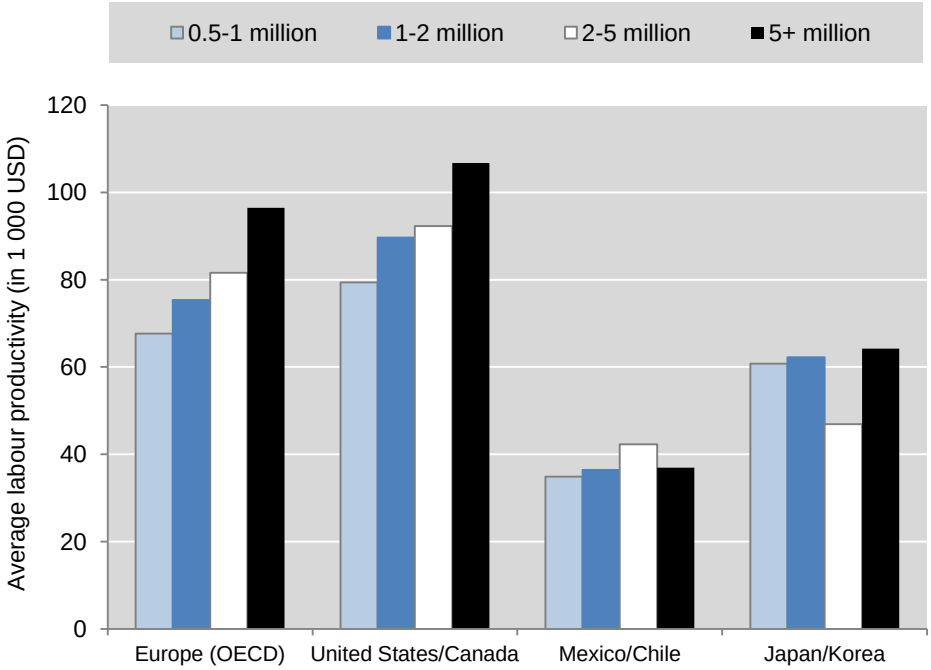
This period is not only characterised by a general increase in urban population, but also by the rise of the megacity. In 1950, New York and Tokyo were the only urban agglomerations with a population in excess of 10 million. By 2030, the number of megacities is projected to increase to 41, with seven of the world's top ten megacities in Asia.

The secrets of successful cities

What makes cities rich?

The economic performance of a city is influenced by a complex set of policies on the national and local level that complement each other – or not, as the case may be. Some broad patterns can be identified regarding economic performance that are present in most cities. For example, the productivity levels of cities (and thus their economic output) depend on their population size, and larger cities are generally more productive. Recent OECD studies suggest that for each doubling in population size, the productivity level of a city increases 2-5%. This is due to several factors, such as greater competition or deeper labour markets (and thus better matching of workers to jobs) in larger cities, but also due to a faster spread of ideas and a more diverse intellectual and entrepreneurial environment.

Also the share of highly educated people living in a city has important implications for productivity levels. This is partly because more educated people are more productive themselves. On top of this, being surrounded by more highly educated increases the productivity of all people, no matter if they are highly educated or less educated. As the share



Note: Average labour productivity (measured in USD per year), depending on the size of the metropolitan area.

Source: OECD calculations based on OECD (2014), "Metropolitan areas", *OECD Regional Statistics* (database).

of highly educated people tends to be larger in bigger cities, the productivity effects of city size and human capital can thus reinforce each other.

Having a highly specialised economy in a city can yield large returns if this part of the economy is performing well. However, it also reduces economic resilience and increases the risk of a severe downturn if the sector experiences an external shock or declines for other reasons.

Finally, the quality of a city's governance structure is directly reflected in its economic strength. Often, administrative boundaries within metropolitan areas are based on centuries-old borders that do not correspond to today's patterns of human activity. Metropolitan areas with fragmented governance structures tend to have lower levels of productivity: For a given population size, a metropolitan area with twice the number of municipalities is associated with around 6% lower productivity. This effect is mitigated by almost half by the existence of a governance body at the metropolitan level.

What makes cities function well?

Well-functioning cities require a combination of a multitude of factors. Some are similar to those that make societies and countries function well, but a large number of factors are specific to, or at least have a particular relevance for, cities. For example, the benefits of adequate governance structures may be particularly high in urban agglomerations. This is because the very density of opportunities for contact and exchange that makes cities so dynamic and productive also implies that the actions of households and firms, as well as the interactions among different strands of public policy, typically have larger positive or negative spillover effects in cities than in less densely populated places. In this context, it is especially important that governance structures take the functional realities of metropolitan areas into account. Getting administrative structures right typically allows for better outcomes in most of the dimensions that make cities function well.

- Land-use planning and transport planning, in particular, need to be co-ordinated effectively. Both policy fields are complementary to each other and efficient outcomes in one field are only possible if efficient outcomes in the other field are achieved as well.

- Integrated public transport provision helps to ensure that public transport services in an urban agglomeration are aligned to each other. It offers residents advantages such as universal ticketing

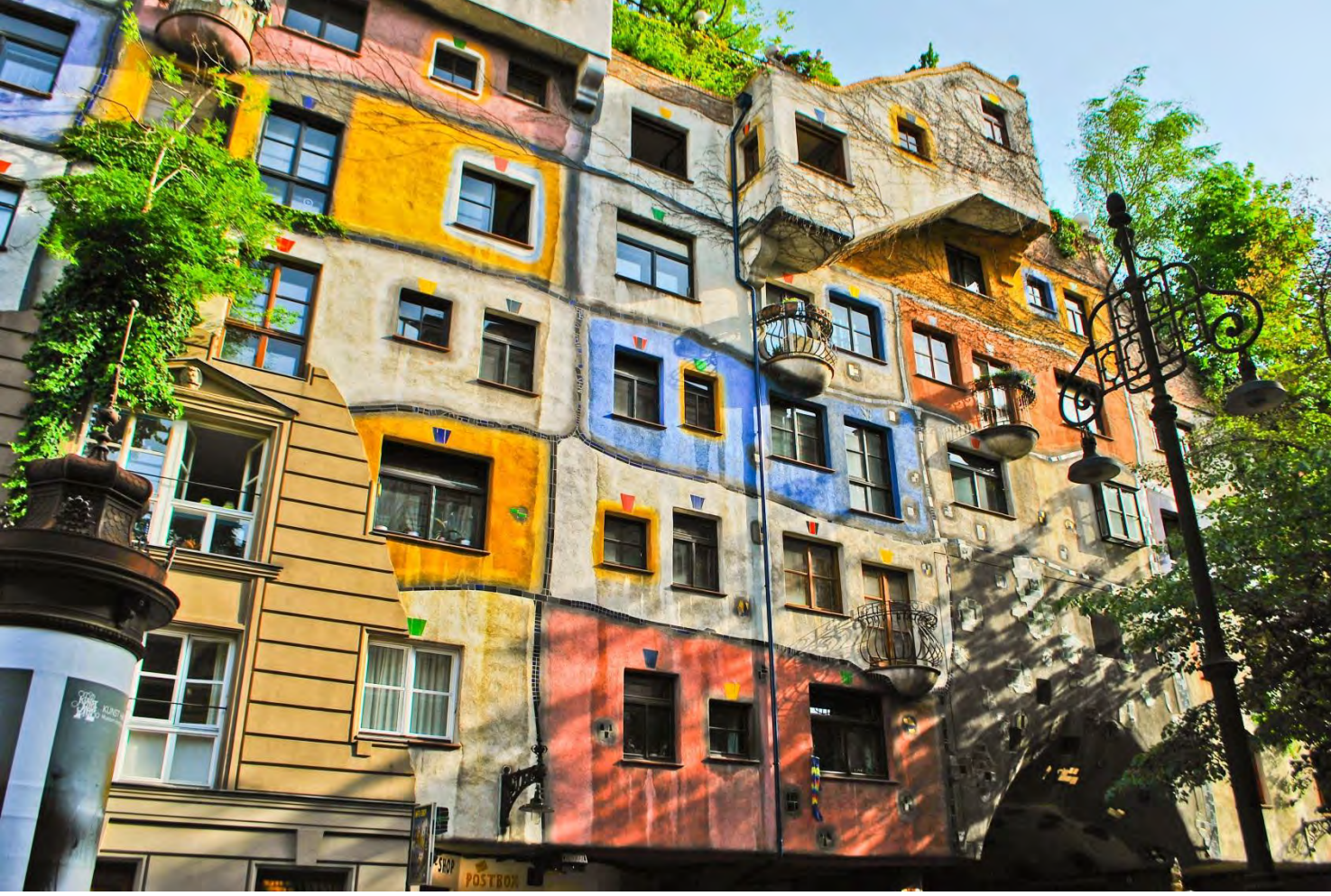
schemes, shorter transfer times and better geographical coverage of public transport.

- Land-use regulations need to find the right balance between protecting existing neighbourhoods and green spaces and allowing new construction.

- Smart road transport policies are required to use the scarce space on urban roads efficiently. In particular, it is important that the incentives for driving a car reflect the true costs of its use. In most cases, this implies imposing higher taxes on driving into a city in order to account for so-called externalities, such as air pollution and congestion. Congestion charges have been successfully introduced in several cities despite the political resistance that they often face.

- Residents' trust in each other and in the public administration is important because it leads to more co-operative behaviour that improves well-being. This ranges from small things like people's behaviour in queues to important aspects such as compliance with laws and support for reforms.

- Cities need to function well not only during normal times, but also in the case of unexpected events and disasters. Resilient cities have effective policies that reduce the risk of such events from occuring and minimise their consequences in case they happen nevertheless.



Are cities good for their residents?

Cities have a multitude of functions, but above all, they are where people live. An important question is therefore whether cities meet the needs and aspirations of their residents. While this question has many nuances, overall, individuals benefit from living in well-functioning large cities, and many millions of people even choose to live in poorly functioning large cities rather than in small towns or rural places.

On the positive side, cities raise their workers' productivity and wages, an effect that increases with city size. For example, for a given level of skills, a worker's wage is expected to be about 20% higher in Los Angeles than in Galveston. Large cities are particularly attractive for the well-educated, not least as deep labour markets make it easier for them to find a job that is well-matched to their skills. This aspect is especially important for households with two well-educated partners who might struggle to find adequate employment opportunities for both partners in smaller cities or rural areas.

The advantages that deep labour markets in larger cities offer the most educated residents are, however, not necessarily transferred to all workers with lower levels of education. Large cities are often characterised by the joint presence of highly productive districts and pockets of very high unemployment. Inequality tends to be higher in larger cities, and this gap between the rich and the poor appears to have widened in recent decades. A connected and even more pressing problem is social exclusion. Social exclusion is often concentrated among certain social groups, such as immigrants, ethnic minorities or young people from low-income households. The labour market barriers these

groups face are not only economic, and the impact of exclusion can be highly persistent across generations. A key challenge for policy makers is to ensure that access to jobs and services is possible for residents from all types of backgrounds and that adequate opportunities for education and skill acquisition are within reach for everyone to foster integration and to avoid segregation. In this context, public transport and the road network matters. From a resident's point of view, a city is only as big as the area that can be reached within a reasonable amount of travel time.

The pecuniary benefits that larger cities provide are also balanced by increased costs. Empirically, pecuniary costs of cities – such as housing costs and prices for local services – appear to rise at the same rate as wages. But well-being extends beyond the material living conditions. A person's quality of life depends on much more than wages and prices and decisions to move to or away from cities are not only driven by pecuniary factors.

One important non-pecuniary cost in many cities is congestion and long commutes. Similarly, air pollution from traffic and industrial production tends to be higher in larger cities, especially in rapidly industrialising economies. Congestion costs and pollution are significantly driven by urban form and transport infrastructure, and largely reflect policy choices (or the lack thereof). This is witnessed by the fact that congestion and pollution levels differ strongly across metropolitan areas of comparable size.

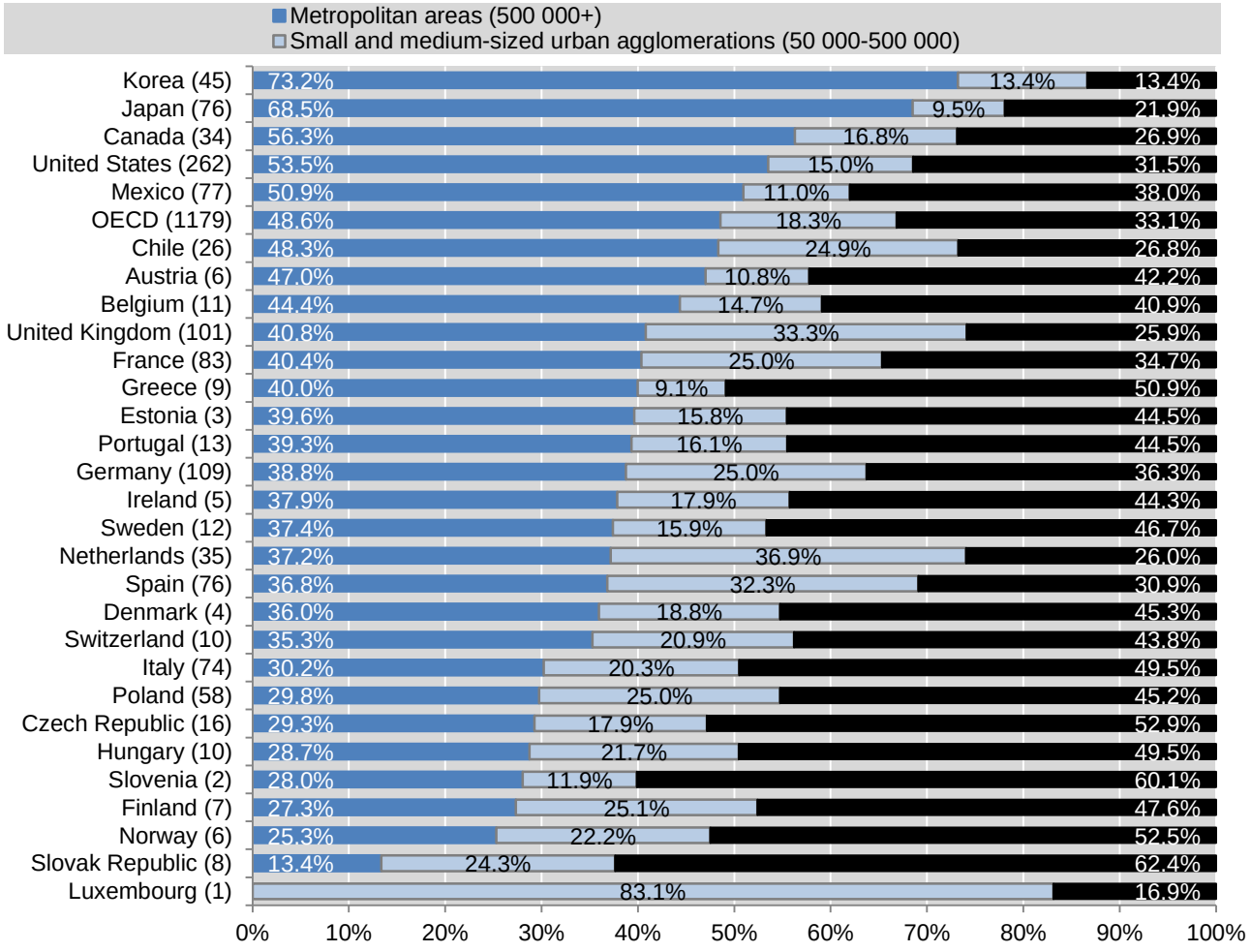
As for non-pecuniary benefits, big cities offer a large set of opportunities and an unrivalled access to amenities of all types. The vibrant culture of large cities, their historical sites, and a wide variety in cultural and recreational amenities is a big attraction for both visitors and residents of these cities. The variety in goods and services offered in larger cities cannot be supported in smaller cities or rural areas. The quality and variety of specialised services on offer, such as medical services or educational institutions, typically also increase with city size. So do economic opportunities: in many countries, even if a move to a big city involved a cut in real income in the short term, it usually offers the prospect of better future opportunities and higher wages over the long run

These factors make cities attractive for both wealthy and poor individuals. That is why large cities often have high levels of inequality. Futhermore, they tend to be spatially stratified along socio-economic dimensions: poor and wealthy neighbourhoods are often clearly separated from each other. This contributes to social exclusion and inequality because the different neighbourhoods have different levels of public service provision and accessibility. Spatial stratification into poor and rich neighbourhoods also leads to unequal access to education, even if spending on schools and other education facilities is not determined by income levels in neighbourhoods. So-called "peer effects" are important determinants for learning outcomes of students. In other words,

Note: Share of population living in metropolitan areas, in small urban agglomerations and outside of urban agglomerations.

Source: OECD calculations based on OECD (2013), *OECD Regions at a Glance 2013*, OECD Publishing, Paris; OECD (2014), "Metropolitan areas", *OECD Regional Statistics* (database);

Share of population living in urban agglomerations



the social background and skill level of classmates influences the schooling outcomes of students. Geographical separation into wealthy and poor neighbourhoods therefore contributes to self-perpetuating patterns of inequality.

Depending on the governance arrangements, administrative fragmentation of a metropolitan area into many small municipalities can reinforce inequality. The more fragmented a metropolitan area is into individual municipalities, the more likely it is that these municipalities will have socially homogenous populations. If poorer municipalities have lower tax revenues and consequently fewer funds for public services and infrastructure, this puts their residents at a disadvantage. It also perpetuates socio-economic segregation because it provides incentives for those who can afford it to move to wealthier municipalities. Often, wealthier municipalities reinforce this trend through land-use regulations – such as minimum lot-size requirements – that keep house prices high and prevent an inflow of poor individuals.

Adequate metropolitan-wide governance arrangements can help to overcome these issues. Good public transport connections to more prosperous parts of a metropolitan area are especially important to residents in poor neighbourhoods as it gives them access to jobs and amenities that their own neighbourhoods lack. Metropolitan-wide governance arrangements may be necessary to allow such public transport connections to be built and operated. Effective metropolitan governance mechanisms can also decrease disparities in public service provision by ensuring a more equal distribution of public services, and that land-use and other planning policies do not further exacerbate the social stratification of neighbourhoods.

Are large cities good for their countries?

Worldwide urbanisation exceeds 50%. Within the OECD, population is even more concentrated. Roughly half of the OECD's population lives in 300 metropolitan areas – large urban agglomerations with more than 500 000 inhabitants – that account for significantly more than half of GDP produced. But the importance of cities goes far beyond simple arithmetics. Nested within countries and linked to both surrounding and distant regions, cities are hubs of productivity and innovation, goods and service providers for their local area and they play a critical role in

providing skills and creating environmental efficiency for sustainable and inclusive growth.

Cities, especially large ones, are the drivers of long-run economic growth. Long-run growth is determined by a country's capacity to innovate and extend the technological frontier. The agglomeration benefits of large cities – knowledge spillovers and increased incentives for residents to invest in human capital in particular – make cities the main centres for research and development activities, patent applications and venture capital. While innovation can happen anywhere, it tends to be concentrated in highly urbanised areas. Cities are thus crucial in pushing out the productivity frontier, thereby leading the way that others can follow.

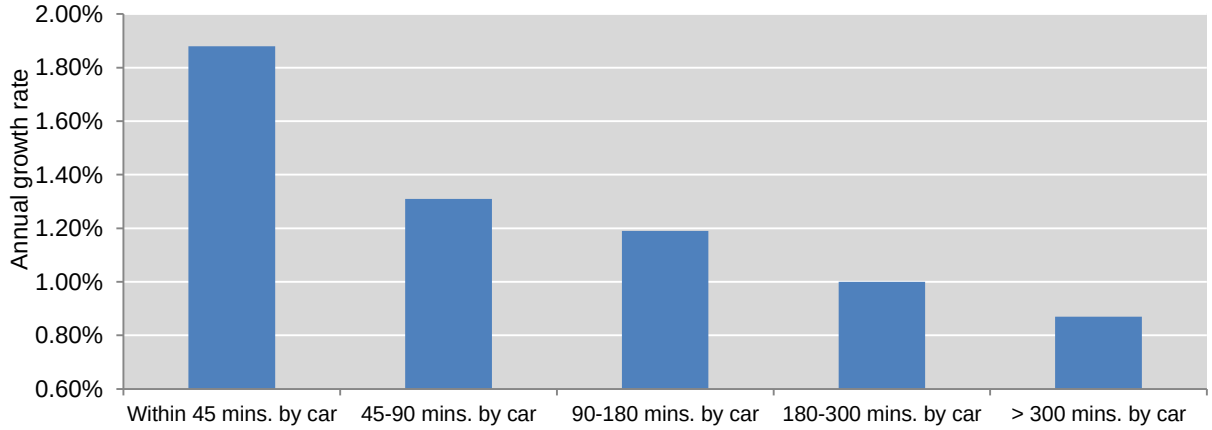
The benefits that cities generate extend beyond their borders. These spillovers from larger cities to smaller cities or nearby regions are sizeable. For example, regions that include cities with more than 500 000 inhabitants have experienced considerably higher economic growth than those without a large urban centre, and population growth in non-urban regions has been, on average, higher if they are closer to large cities. The positive economic impact of large cities on regions remains measurable up to a distance of 200-300 kilometres. Strictly speaking, the most relevant measure for such spillover effects is not distance but connectedness, as quantified by travel time. There is also evidence that proximity to smaller cities has a positive effect on growth, but this impact is more localised and limited to a much smaller radius.

Finally, nearby cities generate positive spillovers on productivity levels in a city. This may, to some degree, explain why European cities do not reach the same size as the largest cities in the United States: Smaller cities in Europe may not be at that much of a disadvantage, as they are closer to each other and can therefore "borrow" agglomeration benefits from neighbouring cities. At least to some extent, the density of the urban *system* might offset – or even contribute – to the lack of very large cities.

Note: Average annual per capita GDP growth rates between 1995 and 2010 controlling for country fixed effects and initial per capita.

Source: Ahrend, R. and A. Schumann (2014), "Does regional growth depend on proximity to urban centres?", *OECD Regional Development Working Papers*, No. 2014/07, OECD Publishing, Paris.

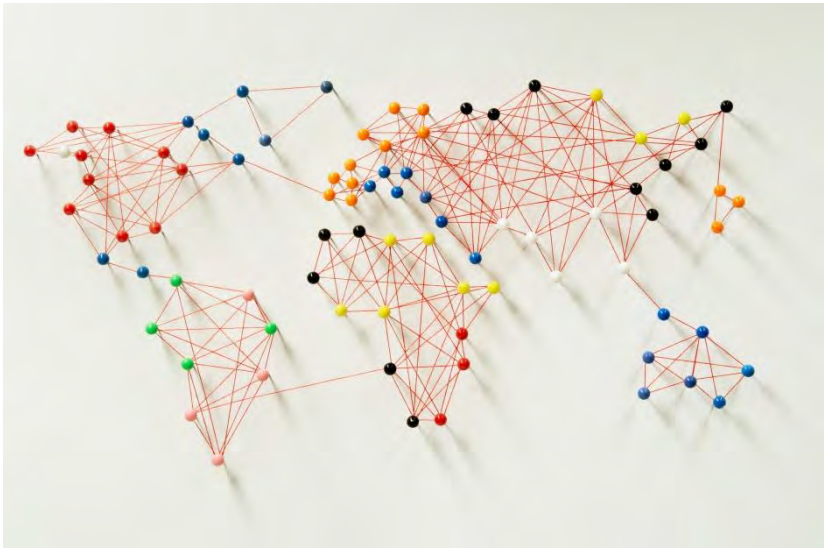
GDP growth by distance to large cities



Are large cities good for the planet?

Large cities are important sources of pollution. However, it is not urban living itself that is responsible for the pollution but simply the large number of people in large cities. If the same number of people were dispersed over a wider area, their environmental impact would likely not be reduced. On the contrary, when taking into account the per capita contributions to climate change and other environmental degradations, larger cities actually perform better in many areas. For example, per capita CO_2 emissions for ground transport are lower in large urban agglomerations than in more rural areas, provided that public transport is well developed in the former. Similarly, the per capita sealed surface area is lower in large cities than in rural areas. Large cities are also important actors when it comes to green growth. "Green" policies tend to have fewer negative effects on economic growth at the local level than at the national level, and at the city level a large number of policy complementarities can be achieved. Overall, it is the way in which a city is organised rather than its size that shapes the environmental impact of an urban agglomeration. The choices made during the current wave of urbanisation will therefore have a huge impact on the environmental sustainability of human activity for a very long time to come.

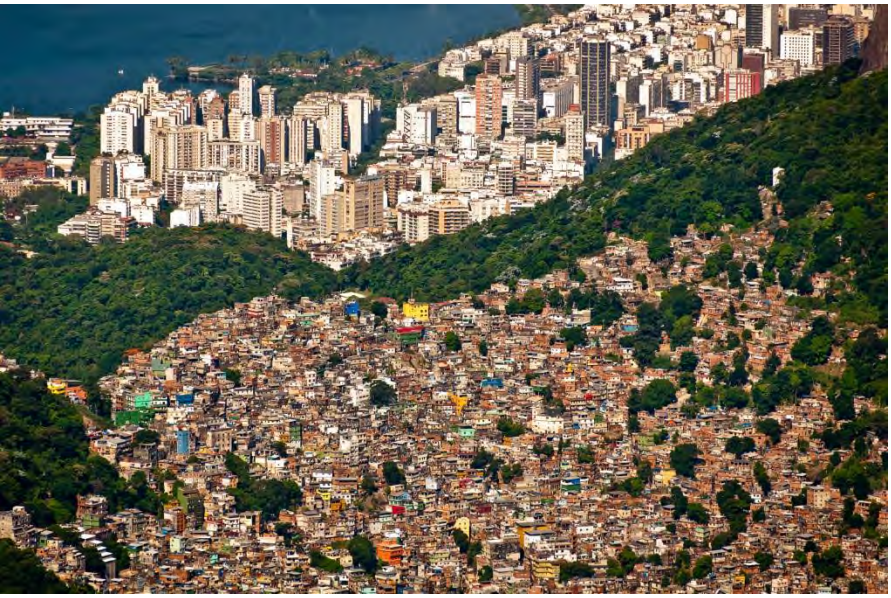
The empirical evidence suggests that with increasing urban sprawl the environmental impact of urbanisation deteriorates. Given the often stated policy objective to limit sprawl, it is surprising that in most cities existing policy frameworks actually subsidise or incentivise sprawl. For example, in a large majority of cities, the negative externalities of using fossil fuel-based individual transport – such as pollution and congestion – are not (correctly) priced. This encourages sprawl by reducing it cheaper to live in sprawling neighbourhoods.



Similarly, cities in many countries have other policies, such as. tax and regulatory policies, which – usually as an unintended side effect – also promote sprawl. As a consequence, people are pushed further apart than they would otherwise wish to be. Correcting such policies would be the first-best solution and would make an important contribution towards improved environmental outcomes. However, as long as these reforms are not implemented, imposing minimum densities in land-use regulations and urban planning seems a reasonable second-best policy.

The challenges of 21st century urbanisation

The 21st century wave of urbanisation has great potential to benefit residents, countries and the planet at large, but this requires that important challenges are met. Some are the same around the globe: For example, all cities face environmental challenges and need to increase their levels of resilience to various types of shocks, and many struggle to provide sufficient affordable housing in areas with good access to transport.



In the developing world, many cities also struggle to provide basic infrastructure, such as clean drinking water, sanitation or electricity, to all of their residents. While not restricted to the megacities and metropolises in emerging and developing countries, pollution is an especially grave problem there. Many cities, in particular in the United States, face the challenge of reducing the carbon footprint of large agglomerations that is based on car travel and of organising the effective transport of large, and often increasing, populations. Japan, as well as a number of other countries, will have to adapt cities to ageing populations. Europe needs to deal with the fact that – in global comparison – its large cities are relatively small, which implies a specific need for cities to be well connected to each other.

Last but not least, existing or emerging middle classes across the globe increasingly ask for cities not only to provide for good jobs and livelihoods, but also to become more liveable. Increasing well-being in the context of a city requires less pollution and congestion, good access to the places where residents need or want to go, and a generally attractive and secure city environment with a good choice of leisure activities.

While in large parts of Europe and Northern America the bulk of urbanisation has already taken place and is embodied in city forms and existing infrastructures, developing and emerging countries currently have an unprecedented opportunity to shape their urban futures. The decisions taken by governments at national, regional and city levels now will have consequences for the functioning, liveability and environmental sustainability of their cities for many decades to come.

Preparing the cities of the future

The important challenges connected to urbanisation may explain why many countries still have policies in place that are aimed at or result in preventing or containing urbanisation. Rather than wasting their efforts in a futile battle against a global trend, national, sub-national and city governments would be better advised to accompany and shape urbanisation to ensure that it results in well-functioning, liveable and environmentally sustainable cities.

Transport was already a challenge in ancient Rome and will remain so in the future. Most large metropolitan areas will not be able to function well without good public transport systems; the congestion levels that can be observed in many of the fastest growing cities in emerging economies provide ample evidence of this. The quality and efficiency of public transport, in turn, is closely connected to good land-use and transport planning. Adequate metropolitan governance structures can be critical to allow for successful policies in these fields.

The success of cities depends not only on local institutions and actors; the framework set by national governments is also of critical importance. Only when national policy settings are sufficiently supportive can city-level initiatives be as effective as they need to be. National policies typically determine both what cities can do and what cities have an incentive to do. For example, a strong national framework based on a carbon tax broadens the range of environmentally effective options available to cities and reduces the costs, or increases the returns, to any investment in climate-change mitigation (such as. green infrastructure or energy-efficiency measures).

The political economy of the metropolitan century

Only a dozen OECD countries have populations as large as the largest agglomerations in the world (Tokyo, Guangzhou, Shanghai, Delhi and Jakarta, for example). With the number of megacities projected to grow to more than 40 by 2030 – and with many of them in fast-growing countries – it is only a matter of time before the economic strength of numerous urban agglomerations is greater than that of most OECD countries. Taken together with the increasing importance of large cities within countries, this will imply a shift in power towards cities. It would seem in the best interest of central governments to accompany these shifts by modernising and adapting administrative structures to better reflect the needs of metropolitan agglomerations, and to ensure that the functions that are best carried out at the metropolitan level are actually located there. Several national governments have recognised this and are actively pursuing such an agenda. Retaining outdated, fragmented metropolitan structures could delay shifts in power from the national level to large cities within a given country but would come at a hefty price. Constraining metropolitan areas – the motors of economies and societies – would weaken not only the economic and political strength of those areas, but also of the country at large.

Overall, it is important to keep in mind that cities are living organisms. Cities have dynamics of their own, and what makes a metropolis special is not mainly its buildings and streets, but the combination and abilities of all its residents, and the interactions among them. As long as a city is sustainable for the environment and provides high levels of well-being to its residents, its exact nature matters little. After all, cities have been, and will continue to be, evolving and changing over time. Constructively accompanying future developments and being able to rapidly respond to arising new challenges are key to ensure that the changes underway in the metropolitan century will benefit city dwellers and, more generally, humankind.

This brochure is a summary of the publication *The Metropolitan Century: Understanding Urbanisation and its Consequences*. The full publication is available on the OECD iLibrary at http://dx.doi.org/10.1787/9789264228733-en.

With the financial assistance
of the European Union