



The Differential Economic Geography of Regional and Urban Growth and Prosperity in Industrialised Countries

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In particular, the present paper has contributed to Chapter 2 on 'State of Inequalities', which gives an overview of the 'state of inequalities', providing a discussion about current inequality trends, as well as the challenges they bring for LRGs.

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1. Global Patterns of Urbanisation, Economic Growth and Development

Today, some 55% of the world's population live in cities and this share is expected to increase to 68% by 2050 as newly industrialising countries continue to develop economically¹, because **economic growth and urbanisation are intrinsically related.**² In general, countries with higher levels of urbanisation also exhibit higher GDP per capita levels and high-income countries display the highest urbanisation shares, followed by middle-income countries and then low-income countries.³ In high income countries some 47% of citizens live in cities of over 1 million people, whereas in low income countries the share is only 12%.⁴ Yet urbanisation is a process which has proceeded at different rates and at different time periods.

Many of today's industrialised nations underwent their major urbanisation processes between one and two centuries ago involving at first a transition from agriculture to manufacturing and more recently from manufacturing to cities and economies dominated by services.⁵ In contrast, in many parts of Asia, Latin America and Africa, major urbanisation was product of the second half of the twentieth century, including the growth of many of the world's largest cities,⁶ although the urbanisation processes were different in different parts of the world. In many parts of Asia, urbanisation is still strongly associated with a shift from agriculture to manufacturing, whereas in low income countries in Africa, Latin America and the Middle East, urbanisation paths are often related to the rents associated with major natural resources, without any transition via widespread industrialisation.⁷ Indeed, many of these lower income countries, both in Latin America but especially in Africa, are nowadays experiencing rapid urbanisation which is primarily from agriculture directly to service economies, rather than via manufacturing-led industrialisation. This poses major challenges both in terms of facilitating the transition process but also in terms of designing appropriate policy responses, because in these cases rapid urbanisation is often associated with low levels of human capital acquisition and

technological upgrading, a phenomenon not experienced in earlier transition processes which were mediated via industrialisation and manufacturing transitions.

Today, urbanisation rates, in terms of the rate of increase of the urban population in countries, is inversely related to the level of development, with low-income countries displaying the highest urbanisation shares, followed by middle-income countries and then high-income countries.⁸ At the same time, the growth of mega-cities of over 10 million people is today dominated by lower and middle income countries, with only a small number of such cities in high income countries.⁹ **Rapid urbanisation is an ongoing feature of many parts of the world with forecasts suggesting that annual urbanisation rates will continue to increase in Europe and, although annual urbanisation rates will fall slightly in most parts of the world over the coming decade, the absolute levels of worldwide urbanisation will still increase markedly over the coming decade.**¹⁰ These rapid rates of urbanisation make urban planning extremely difficult, because the time taken for appropriate land reclamation, rehabilitation, consolidation and appropriate infrastructure provision and urban design is often longer than the rate of urban growth.

In general, what we do know from recent research is that **at a global scale, residents of cities enjoy a higher quality of life associated with higher incomes, employment, education levels, access to services and technology, even after allowing for a greater urban exposure to crime, congestion and pollution.**¹¹ The largest cities tend to grow faster than small cities, many of which are also more vulnerable to long-term population decline. Population decline is currently associated with more than 20% of the world's metropolitan urban areas and is expected to affect some 30% of metropolitan areas by 2050,¹² although in Europe and East Asia a third of cities are already experiencing population decline.¹³

1. UN-Habitat, *World Cities Report 2020: The Value of Sustainable Urbanisation*
2. OECD, *Cities in the World: A New Perspective on Urbanisation*
3. UN-Habitat, *World Cities Report 2020: The Value of Sustainable Urbanisation*
4. OECD, *Cities in the World: A New Perspective on Urbanisation*
5. OECD, *Cities in the World: A New Perspective on Urbanisation*
6. Satterthwaite, *The Scale of Urban Change Worldwide 1950-2000 and its Underpinnings*
7. OECD, *Cities in the World: A New Perspective on Urbanisation*
8. UN-Habitat, *World Cities Report 2020: The Value of Sustainable Urbanisation*
9. UN-Habitat, *World Cities Report 2020: The Value of Sustainable Urbanisation*
10. UN-Habitat, *World Cities Report 2020: The Value of Sustainable Urbanisation*
11. OECD, *Cities in the World: A New Perspective on Urbanisation*
12. OECD, *Cities in the World: A New Perspective on Urbanisation*
13. McCann, *Urban Futures, Population Ageing and Demographic Decline*; OECD, *Cities in the World: A New Perspective on Urbanisation*

2. Interregional Growth in Industrialised Countries

In the industrialised countries, the growth and prosperity of regions, cities and localities, both rural and urban, has traditionally displayed various common features across countries for much of the twentieth century. These features were, firstly, interregional convergence; secondly, a tendency to converge towards what is known as 'Zipf's Law'; and thirdly, during the latter years of the twentieth century, a dominant role of large cities. Interregional convergence is the process whereby lower wage and economically less prosperous regions on average grow faster than higher wage and more prosperous regions, such that the wage and income levels of each regions slowly converge towards those of the more prosperous regions.¹⁴ Zipf's Law is the phenomenon whereby the size distribution of cities within a country, ranging from large numbers of small cities through to small numbers of large cities, displays a regular pattern.¹⁵ Large cities are often the most connected hubs in global trading systems, acting as the key conduits for many aspects of trade and development. Each of these features shaped to differing degrees how the interregional economic geography of prosperity played out in different countries, and the combination of these features also led to broadly consistent and predictable patterns of growth prosperity across regions within individual countries, as well as between countries.

These widespread patterns, however, started to evolve into quite different patterns during the two decades straddling the New Millennium, and

the impacts of the 2008 global financial crisis on the spatial patterns of prosperity and inequality have led to radically different configurations of growth and development during the last decade, in comparison to earlier decades. Many of these shifts were unexpected, and as such, were puzzling to both analysts and policy-makers, and the problems that many countries nowadays face in local and regional economic development policy-making stem from these more complex emerging realities.

In order to consider the realities of today, and also how best to confront the future local and regional development challenges in the industrialised OECD countries, it is necessary to understand the context from which regions, cities and rural areas have emerged in recent decades, and how this context itself has so radically and rapidly evolved in recent years. In order to do this, this paper will first discuss the long-run trajectories of regional growth and development including their most recent changes. Then it will consider the role that cities play in these changes, and how even the role of different types of cities has fundamentally shifted in recent years. In each case the paper will consider explicitly the role that the 2008 global financial crisis may have played. Linking these findings will then allow us to consider how the current economic geography of prosperity itself may evolve in response to the shocks and technological opportunities associated with the Covid-19 pandemic.



Vienna (Source: Dimitry Anikin, www.pixabay.com)

14. McCann, *Modern Urban and Regional Economics*

15. McCann, *Modern Urban and Regional Economics*

In many industrialised countries, the first three decades of the twentieth century were characterised by large fluctuations in interregional productivity and prosperity levels, as countries responded in different ways to the shocks associated with the boom of the 1920s and the bust of the 1930s Depression era.¹⁶ After the period of macroeconomic instability, the post-war reconstruction era ushered in a period of stability and growth which also reshaped interregional growth patterns. **For much of the twentieth century, countries experienced processes of long-run convergence, whereby economically weaker regions underwent a process of slowly catching up wealthier regions. These long-run convergence processes were almost ubiquitous amongst the group of leading industrialised countries,**¹⁷ as reflected in the diminishing scale of interregional productivity differentials over time across countries. The post-World War II era was the most marked in this regard, with all advanced economies enjoying high rates of economic growth allied with interregional convergence processes.¹⁸ Importantly, this combination of high growth and interregional convergence implies that a wide range of citizens in all regions were increasingly enjoying the benefits of economic growth, rather than just those in the most prosperous regions.

The experience of this era, which continued up until the last decade of the twentieth century, also shaped how economic growth arguments were conceived of and framed. For much of the post-war period, the dominant analytical paradigm in economics was the neo-classical growth schema, built primarily around the Solow-Swan¹⁹ framework, in which diminishing returns to scale for production factors such as labour, capital and land, provided the overall framework for thinking about economic growth processes. This way of thinking about the economy lasted for some thirty years, and in terms of thinking about regional growth patterns, pointed towards long-run processes whereby factor movements across regions underpinned long run convergence processes.²⁰ In particular, capital movements from higher wage to lower wage locations in search of higher returns and higher yields would be accompanied by movements of labour

in the opposite direction from lower wage areas to higher wage areas. For some three decades these two largely opposing flows of factors were deemed to be largely sufficient to engender interregional convergence, and empirical evidence, primarily from the USA,²¹ seemed to confirm these impressions. Indeed, even where some areas temporarily enjoyed economic booms, leading to inflows of both capital and labour, eventually the diminishing marginal returns to scale properties were still assumed to dominate after a while, thereby returning the overall system to one of interregional convergence driven by opposing flows of capital and labour. Importantly, **issues such as technology, knowledge spillovers and knowledge diffusion, institutions and governance, were largely seen as being outside of this framework, and viewed as having little or no major impact on the overall economic system.** As long as markets were deregulated and competitive, then interregional convergence was seen as a natural outcome of market mechanisms. **During this post-war period, the city-size distribution patterns in many countries also converged towards what is known as ‘Zipf’s Law’,²² whereby the effects of randomly distributed economic growth shocks on differently sized urban areas leads to a specific regularity in the sizes of cities within an individual country.**

This convergence way of thinking and supporting empirics on growth processes in the economy started to change during the 1980s in response to: the economic shocks faced by western industrial sectors and the rise of East Asian competitors;²³ the increasingly apparent role of particular cities and regions in driving technological changes;²⁴ and also new analytical breakthroughs allowing for a deeper understanding of the role played by scale economies in driving economic growth,²⁵ which allowed economists to examine increasing, rather than decreasing, returns to scale, in a more coherent and systematic manner. In terms of our understanding of the role of regions and cities in national and international economic life, the turning point of these various intellectual trends were the breakthroughs in the early 1990s²⁶ which spurred a whole new era of worldwide analysis, empirical evidence gathering and

16. Carrascal-Incera et al., *UK Interregional Inequality in a Historical and International Comparative Context*

17. Carrascal-Incera et al., *UK Interregional Inequality in a Historical and International Comparative Context*

18. Carrascal-Incera et al., *UK Interregional Inequality in a Historical and International Comparative Context*

19. Solow, *A Contribution to the Theory of Economic Growth*; Swan, *Economic Growth and Capital Accumulation*

20. Borts and Stein, *Economic Growth in a Free Market*

21. Barro and Sala-i-Martin, *Convergence*; Barro and Sala-i-Martin, *Economic Growth*

22. Gabaix, *Zipf’s Law and the Growth of Cities*; Gabaix, *Zipf’s Law for Cities: An Explanation*; Matlaba, et al., *A Century of the Evolution of the Urban System in Brazil*

23. Piore and Sabel, *The Second Industrial Divide: Possibilities for Prosperity*

24. Scott 1988, *New Industrial Spaces*

25. Romer, *Increasing Returns and Long-Run Growth*; Romer, *Growth based on Increasing Returns due to Specialization*

26. Porter, *The Competitive Advantage of Nations*; Krugman, *Geography and Trade*; Glaeser et al., *Growth in Cities*

activities about cities and regions. The results of this new agenda are discussed shortly using OECD data. In particular, these breakthroughs allowed us, for the first time, to examine systematically the reasons why certain cities and regions appeared to be moving ahead of other types of regions, as increasingly observed in the late 1980s and early 1990s. Indeed, whole swathes of new empirical evidence emerging during the late 1980s and early 1990s started to point to a change of direction in the economic geography of productivity and prosperity within many countries.

Not since the early twentieth century had industrialised countries started to experience interregional divergence, instead of ongoing processes of interregional convergence. In these cases, key cities and core regions increasingly enjoyed the benefits of productivity growth in a manner which was not being replicated in other regions.

In particular, knowledge-intensive regions with globally connected cities at their heart, such as the South of England with London at its core, the Ile de France with Paris at its heart, and the Northern California Bay Area with the San Francisco-San-Jose conurbation at its heart, appeared to increasingly capture the benefits of modern globalisation, in some ways to the apparent detriment of other regions in the same country. **Such regions tended to be those with the highest levels of global connectivity, as mediated via global companies, acting as conduits for global flows of knowledge, finance, human capital, good and services.**²⁷ During the 1990s, many of these globally connected cities started to account for a greater share of national and global economic growth than had been the case in previous decades,²⁸ as new international markets opened and global outsourcing and off-shoring became widespread. Indeed, it was this surge in the performance of these globally connected cities that first started to drive interregional divergence in countries such as the UK and the USA from the late 1980s onwards. More generally, however, cities and urban areas dominated economic growth across the industrialised world,²⁹ and this was increasingly the case also in the newly industrialising countries,³⁰ most notably in the BRIICS countries.³¹ By the New Millennium,

economic growth in all parts of the world was dominated by urban areas, and increasing numbers of countries also began to experience interregional divergence, most notably in the newly-industrialising world, but also amongst the industrialised economies.



London (Source: Olga Lioncat, www.pexels.com)

However, this trend was not inevitable nor inexorable. Indeed, **a major shift stated to emerge in the early 2000s in Europe, and primarily in western Europe, whereby intermediate regions, and rural and peri-urban areas close to urban locations started to grow faster in terms of GDP per capita than all other types of areas.** In Europe primarily urban regions, along with remote rural regions, started to grow much slower than other types of areas from around 2002 onwards.³² This switch in economic and population growth trajectories within western Europe was not replicated in eastern Europe, whose regional economic and population growth was still dominated by rapidly growing cities, and especially capital cities,³³ and nor was it replicated in other parts of the OECD group of countries, or amongst the BRIICS countries at this time. Although there were differences in the experiences of individual counties with some exhibiting interregional divergence while others displayed interregional convergence, overall, both the wider OECD group of countries³⁴ and also European Union as a whole continued to display both international and also interregional convergence, even including when the former transition economies became part of the European Union.³⁵

27. Iammarino and McCann, *Multinationals and Economic Geography: Location, Technology and Innovation*; McCann and Acs, *Globalisation: Countries, Cities and Multinationals*

28. World Bank, *World Development Report 2009: Reshaping Economic Geography*

29. Dijkstra et al., *The Effects of the Global Financial Crisis on European Regions and Cities*

30. OECD, *Cities in the World: A New Perspective on Urbanisation*

31. McCann, *Globalisation, Multinationals and the BRIICS Countries*

32. Dijkstra et al., *The Economic Performance of European Cities and City-Regions: Myths and Realities*; Dijkstra et al., *The Effects of the Global Financial Crisis on European Regions and Cities*

33. Dijkstra et al., *The Effects of the Global Financial Crisis on European Regions and Cities*

34. OECD, *Productivity and Jobs in a Globalised World (How) Can All Regions Benefit?*

35. Ridao-Cano and Bodewig, *Growing United: Upgrading Europe's Convergence Machine*

As such, during the years immediately prior to the onset of the 2008 global financial crisis, the observed patterns of interregional convergence and divergence, and in particular the urban and rural features of these patterns, were different in different parts of the world, with the growth of larger cities driving economic growth in much of Eastern Europe, North America, Asia, Australasia and the Global South, whereas in many parts of western Europe, smaller cities and rural regions continued to play a leading economic growth role.³⁶ However, **part of the rapid growth of rural areas close to cities and of peri-urban areas was the increasing spatial spread of large metropolitan regions, which were extending their catchment areas, either via amalgamation and absorption of existing smaller nearby settlements or via urban encroachment on their rural hinterlands.** Across the OECD countries, between 2001 and 2017, these metropolitan regions have grown in population by close to 4% more than in non-metropolitan regions.³⁷ Moreover, in general the growth of these metropolitan regions is associated with a high growth in services employment and in creative industries.³⁸ These sectoral shifts differentiating urban from rural areas were also accompanied by shifts mainly from functional to urban specialisation,³⁹ with companies reallocating their workers between cities and regions according to the nature of their specific activities, rather than primarily due to differences between sectors.

During the pre-crisis period been the New Millennium and 2008, financial markets across regions worked more or less efficiently, as revealed in their yield values and pricing distributions.⁴⁰ Countries which were interregionally balanced in terms of economic growth as a result of long-run convergence processes, such as The Netherlands, Germany, Sweden, Australia and Finland, grew at a similar rate to those which were more interregionally unbalanced such as the UK, USA and Italy.⁴¹ In other words, although some regions were enjoying the advantages of the new era of modern globalisation, the poorer performance of other regions in those same countries was to some extent counteracting the growth possibilities of the more

prosperous regions. Importantly, amongst the advanced industrialised OECD countries, the increasingly unbalanced interregional growth which was observed amongst a sub-set of countries was not associated with higher national growth rates,⁴² as had been argued to be the case elsewhere.⁴³ In other words, interregional inequality was not 'needed' in order to stimulate faster national economic growth. The countries which had started to display interregional divergence during the 1990s, such as the UK, USA and the Republic of Ireland, did not on average grow faster than countries such as Germany and Finland which were still displaying interregional convergence. Indeed, **the majority of industrialised countries were still experiencing interregional convergence processes even in the run up to the 2008 crisis, and during this period this led to no loss of national growth performance in comparison to countries starting to exhibiting interregional divergence processes.**

The fundamental changes in interregional growth patterns observed across both the industrialised and industrialising worlds resulted from the shocks associated with the global financial crisis. In many OECD countries, interregional convergence processes were still ongoing right up to the 2008 crisis, but the profound financial and fiscal impacts of the crisis started to re-orientate how regions and cities grew in the aftermath of the crisis. Although many OECD countries and regions still display convergence,⁴⁴ increasing numbers of OECD countries have switched from convergence to interregionally divergence growth processes.

Table 1 lists the countries for which during the post 2008 crisis era (2008-2018) interregional convergence or interregional divergence are now the overall features,⁴⁵ as well as those whose regional development patterns have remained unchanged since the 2008 crisis. As can be seen in Table 1, half of OECD countries today display interregional divergence and half still experience interregional convergence patterns.

36. Dijkstra et al., *The Effects of the Global Financial Crisis on European Regions and Cities*

37. Garcilazo and Oliveira-Martins, *New Trends in Regional Policy: Place-Based Component and Structural Policies*

38. Garcilazo and Oliveira-Martins, *New Trends in Regional Policy: Place-Based Component and Structural Policies*

39. Duranton and Puga, *From Sectoral to Functional Urban Specialisation*

40. Daams et al., *Capital Shocks, Real Estate Risks and the Effects of the Global Financial Crisis in US Cities*

41. Carrascal-Incera et al., *UK Interregional Inequality in a Historical and International Comparative Context*

42. Carrascal-Incera et al., *UK Interregional Inequality in a Historical and International Comparative Context*

43. World Bank, *World Development Report 2009: Reshaping Economic Geography*

44. OECD, *Productivity and Jobs in a Globalised World (How) Can All Regions Benefit?*

45. OECD, *Regions and Cities at a Glance 2020*

Countries Displaying Interregional Divergence 2008-2018	Countries with Stable Levels of Interregional Inequality 2008-2018	Countries Displaying Interregional Convergence 2008-2018
UK, USA, France, Denmark, Poland, Czech Republic, Italy, Greece, Spain, Sweden, Australia, Netherlands	Belgium, Norway, Switzerland, South Korea	Japan, Mexico, Turkey, Hungary, Canada, Austria, Slovenia, Slovak Republic, Chile, Portugal, Finland, Germany

Table 1 OECD Countrywide Patterns of Interregional Convergence and Divergence
Source: Adapted from OECD *Regions and Cities at a Glance 2020* Figure 2.9, See: <https://doi.org/10.1787/888934189735>

In particular, across Europe it became clear that European-wide economic geography of growth had qualitatively and quantitatively changed, with the large majority of countries now experiencing interregional divergence coming from Europe. Prior to the crisis, except for the UK and Ireland plus some Eastern European countries which were already experiencing interregional divergence since the 1990s, the overall picture had been one in which Europe experienced both international and interregional convergence as the dominant mechanisms of spatial growth. Post-crisis, while international convergence still remained central to Europe's growth processes, interregional divergence had replaced interregional convergence as the main feature of the geography of economic growth.⁴⁶ In general, the former transition economies of central Europe still continued to grow at a much faster rate than the western European economies, thereby driving European-wide international convergence processes

when measured at the level of both countries and regions at an EU-wide scale, but within countries, divergence in growth rates between regions was now becoming the dominant feature both in Western and Eastern Europe.⁴⁷ Indeed, almost an identical shift from interregional convergence to interregional divergence had taken place in the USA at almost exactly the same time.⁴⁸

On average, overall economic growth rates across OECD countries fell in the immediate aftermath of the crisis, and interregional divergence arose primarily from the fact that only certain cities and regions were able to prove themselves as being relatively resilient to these shocks.⁴⁹ The recovery was therefore very patchy and fragmented even inside many OECD countries, with different types of places performing differently to each other, thereby leading to divergent rather than convergent growth in many cases.

3. Urban Growth and Development in Industrialised Countries

As will be seen shortly, in broad terms, as would be expected from textbook arguments, across the OECD Large Metropolitan Regions are the most productive places typically exhibiting the highest levels of GDP per capita. However, **the relationships between urbanisation and prosperity are more complex than simply scale.** In particular, if we consider the high-income group of countries, a wide range of evidence has become available during the last couple of decades which helps us to better understand the role that cities play in driving regional and national economies.

The first comprehensive estimates based on US and Asian data⁵⁰ suggested that a doubling of the city size was

associated with a productivity increase of 3%-8%, with a mid-point of around 5%. Some evidence from the USA⁵¹ suggests even higher values, although evidence from around the world point to a slightly lower range of 2%-6%.⁵² In general larger cities also tend to be more densely populated and the evidence on the relationship between productivity and city density gives a similar range of values,⁵³ implying that a doubling of density is also associated with productivity increases of 2%-6%, although in Europe the values tend to be slightly higher values of 5%-8%,⁵⁴ as are the 5%-9% productivity associated with a doubling of the geographical size of an urban area.⁵⁵ At the same time, **more successful cities in terms of GDP per capita are often more unequal**

46. European Union, *Investment for Jobs and Growth - Promoting Development and Good Governance in EU Regions and Cities*

47. European Union, *Investment for Jobs and Growth - Promoting Development and Good Governance in EU Regions and Cities*

48. Daams et al., *Capital Shocks, Real Estate Risks and the Effects of the Global Financial Crisis in US Cities*

49. Carrascal-Incera et al., *UK Interregional Inequality in a Historical and International Comparative Context*

50. Rosenthal and Strange, *Evidence on the Nature and Sources of Agglomeration Economics*

51. Bettencourt, *The Origins of Scaling in Cities; Bettencourt and West, Bigger Cities do More with Less; Davis et al., Macroeconomic Implications of Agglomeration*

52. Combes et al., *Spatial Wage Disparities: Sorting Matters!; OECD, What Makes Cities More Productive? Evidence on the Role of Urban Governance from OECD Countries; OECD, The Metropolitan Century: Understanding Urbanisation and its Consequences*

53. Ciccone, *Agglomeration Effects in Europe; Brakman and van Marrewijk, Reflections on Cluster Policies; OECD, What Makes Cities More Productive? Evidence on the Role of Urban Governance from OECD Countries*

54. Ciccone, *Agglomeration Effects in Europe*

55. OECD, *What Makes Cities More Productive? Evidence on the Role of Urban Governance from OECD Countries*

cities, with income segregation and spatial segregation increasing in more prosperous cities⁵⁶ such that the benefits of growth can become more unequal as growth increases.

Conversely, increased governance fragmentation can inhibit the potential productivity advantages of urban scale in that, for a given size of city, having twice the number of local municipalities within the city reduced productivity by 5%-6%.⁵⁷ In other words, government fragmentation can work to completely undermine and nullify agglomeration advantages. As such, **both economic geography and the institutional set-up interact to shape the performance of cities.**

In order to better understand these changes with respect to urbanisation we can use the new OECD classification⁵⁸ of regional typologies, which breaks down small⁵⁹ regions into one of five types, namely: Large Metropolitan Regions; Metropolitan Regions; Non-Metropolitan Regions Close to Metropolitan Regions; Non-Metropolitan Regions Close to Small City; Non-Metropolitan Regions Which are Remote. The definition of 'Large Metropolitan Region' is one that contains city with a population of 1 million or more, and a 'Metropolitan Region' contains a metropolitan area with a population of 250,000 or more and below 1 million.

Consistent with patterns, we see that in 2017 the OECD-wide average GDP per capita levels for Large Metropolitan Regions were of the order of US\$42,000, followed by Metropolitan Regions at US\$37,500, followed by Non-Metropolitan Regions Close to Metropolitan Regions at US\$34,000.⁶⁰ The GDP per capita levels of both Non-Metropolitan Regions Close to Small City and also Non-Metropolitan Regions Which are Remote are very close to each other at approximately US\$20,000.⁶¹

Importantly for the purposes of this paper, these different types of regions also displayed different responses to the 2008 shocks. As already seen, while very large cities tended to dominate economic growth during the 1990s in certain countries, already by the early 2000s these patterns were observed to be changing as convergence processes continued in many countries and a wider array of regions enjoyed the

benefits from the pre-crisis economic boom.⁶² In particular, the share of aggregate national and international economic growth accounted for by the big 'knowledge hub' global city-regions⁶³ discussed above is typically between 20% and 30% of growth and this share tends to remain fairly constant across OECD countries and time.⁶⁴ As such, **even prior to the onset of the 2008 crisis, somewhere between 70% and 80% of economic growth was observed to come from other types of regions⁶⁵ which were not the big urban hubs, nor even urban areas in general,⁶⁶ but other various types of regions,⁶⁷ many of which are even lagging regions.**

Across the OECD countries, many of these relationships changed in the aftermath of the 2008 global financial crisis. In particular, when we compare the relative performance of regions in 2003 with 2017, what we observe is that the regions which grew the fastest through the pre and post-crisis period were the Non-Metropolitan Regions Close to Metropolitan Regions, followed by Metropolitan Regions, followed by Large Metropolitan Regions, followed by Non-Metropolitan Regions Close to Small City and also Non-Metropolitan Regions Which are Remote, whose growth performances through the crisis period were almost identical to each other.⁶⁸ In other words, scale and agglomeration advantages were not the key arbiter of growth or recovery. Small but fast growing regions can make an equivalent contribution to national economic growth as large and slow-growing regions, depending on the economic geography of growth, the patterns of which are heterogeneous across the OECD. Yet, these changes still do not imply a return to OECD-wide convergence processes. Instead, the post-2008 era was characterised by a complex picture of different growth patterns in different OECD countries.

The following sections summarise and synthesise the arguments and analysis of Garcilazo et al.⁶⁹ who are able to compare these patterns across different types of places, and also to identify the differences between the experience of EU countries from that of the USA. As Garcilazo et al. demonstrate, in some countries economic growth is concentrated in a small number of leading already-prosperous regions whereas in other countries economic

56. OECD, *Divided Cities: Understanding Intra-Urban Inequalities*

57. Ahrend et al., *What Makes Cities More Productive? Evidence on the Role of Urban Governance from Five OECD Countries*

58. Fadic et al., *Classifying Small (TL3) Regions Based on Metropolitan Population, Low Density and Remoteness*

59. OECD Territorial Level 3 (TL3) regions

60. Garcilazo and Oliveira-Martins, *New Trends in Regional Policy: Place-Based Component and Structural Policies*

61. Garcilazo and Oliveira-Martins, *New Trends in Regional Policy: Place-Based Component and Structural Policies*

62. McCann, *Modern Urban and Regional Economics*

63. OECD, *OECD Regions at a Glance 2011*

64. Garcilazo and Oliveira Martins, *The Contribution of Regions to Aggregate Growth in the OECD*

65. McCann, *Modern Urban and Regional Economics*

66. OECD, *Regions Matter: Economic Recovery, Innovation and Sustainable Growth; OECD, OECD Regions at a Glance 2011*

67. Dijkstra et al. 2013, *The Economic Performance of European Cities and City-Regions: Myths and Realities*

68. Garcilazo and Oliveira-Martins, *New Trends in Regional Policy: Place-Based Component and Structural Policies*

69. Garcilazo, et al., *Regional Inequalities and Contributions to Aggregate Growth in the 2000s: an EU vs US Comparison Based on Functional Regions*

growth is more dispersed across a wider range of different regions including less prosperous regions. In addition, in some countries economic growth is concentrated in metropolitan areas, whereas in other countries economic growth is distributed across different types of regions. As such, following Garcilazo et al. it is possible to use these two different axes, namely spatially concentrated-versus-spatially distributed growth and also metropolitan urban-versus-mixed growth trajectories, in order to characterise the different patterns of the geography of economic growth inside countries into four different typologies, as depicted in Table 1.

Table 2 shows us that the nature and patterns of the geography of economic growth within countries vary enormously. To differentiate regional growth patterns within countries the growth share contributions of different regions are calculated – whereby growth share contributions are defined as the regional growth rates in GDP multiplied by the relative sizes of the

GDP of the region in comparison to the country as a whole. These patterns are compared for all of the regions of each country in order to identify how national economic growth is shared out across a country's regions, and then each country is compared with other countries along the two axes of spatially concentrated versus spatially dispersed growth, and also metropolitan-dominated growth versus mixed growth. This approach allows us to identify four different groupings of countries which share common growth characteristics. Countries such as France display spatially concentrated growth patterns dominated by cities, whereas the UK exhibits spatially concentrated growth patterns which feature different types of places driving growth. Meanwhile, the USA features spatially diversified patterns of economic growth dominated by metropolitan urban areas whereas Germany displays spatially diversified patterns of growth across a range of different types of places.

	Regionally Concentrated Growth	Regionally Distributed Growth
Metropolitan-Driven Growth	France, Greece, Lithuania, Ireland, South Korea	USA, Estonia, Finland, Italy, Australia, New Zealand, Canada, Japan
Diversely Driven Growth	UK, Czech Republic, Belgium, Netherlands, Slovak Republic, Sweden, Poland	Denmark, Austria, Norway, Germany, Hungary, Latvia, Portugal, Slovenia, Spain

Table 2 Typologies of Growth: Concentrated versus Decentralised: Urban versus Mixed
Source: Adapted from Garcilazo et al. *Regional Inequalities and Contributions to Aggregate Growth in the 2000s: an EU vs US Comparison Based on Functional Regions*

	Countries
First Quintile: +4% → +12%	Estonia, Canada, Lithuania, Finland, Norway, Sweden
Second Quintile: +3% → +4%	Austria, Australia, Hungary, Netherlands, Slovenia, Czech Republic
Third Quintile: +2% → +3%	Chile, Germany, Denmark, Portugal, Japan, Slovak Republic
Fourth Quintile: +1% → +2%	Latvia, Spain, Italy, USA, Poland, Mexico
Fifth Quintile: -1% → +1%	UK, France, Ireland, Switzerland, Belgium, Greece

Table 3. Metropolitan versus Non-Metropolitan Population Growth Differences 2001-2017
Source: Adapted from Garcilazo and Oliveira-Martins "New Trends in Regional Policy: Place-Based Component and Structural Policies"

These patterns of economic growth depicted in Table 1 and Table 2 are also reflected in different ways in terms of population growth, as reported in Table 3. For example, the USA displays metropolitan urban area-dominated economic growth which is spatially diversified, especially along the coasts, and these cities attract new workers. However, this does not mean that all large urban areas enjoy growth. Indeed, many mid-western urban areas are struggling economically and as such population growth in these regions is low. The result is that the gap between USA nationwide metropolitan urban population growth and non-metropolitan (small city plus rural) urban growth is actually low. If we rank 30 OECD countries according to the differences between population growth in metropolitan urban areas and non-metropolitan urban areas over the period 2001-2017 we are able to then split these countries up into five tiers, or quintiles, with the first quintile being those countries with the largest differences in population growth rates between metropolitan urban and non-metropolitan urban areas. On this basis the USA falls into the fourth quintile, with a gap in population growth rates between 1% and 2%. The UK falls into the fifth quintile with a gap of zero between metropolitan and non-metropolitan population growth rates, with Belgium and Greece both exhibiting non-metropolitan population growth rates higher than in metropolitan urban areas. In marked contrast, countries such as Canada, Finland and Sweden see large differences (more than 6%) in population growth rates between metropolitan urban and non-metropolitan areas. During the last two decades the economic geography of growth amongst OECD countries is very heterogenous and defies simple descriptions.

Further evidence on this comes from Garcilazo et al.⁷⁰ who compare the

aggregate growth contributions of different types of regions in the US both prior to and post the 2008 crisis, and these are also compared with regions in the European Union. Using the OECD classification of regional typologies and splitting the growth performance to two time periods 2001-2007 and 2008-2017, in order to calculate the aggregate growth contributions of different types of regions they multiply the GDP per capita growth rates of each of the different types of regions weighted by the GDP size of the respective regions, and they do this individually for all of the small OECD⁷¹ regions in the USA and Europe and then they aggregate the overall weighted values. The results are depicted in Table 4.

Using this approach, Garcilazo et al. demonstrate that in the USA the aggregate contribution to national growth of the Large Metropolitan regions containing cities of at least 1 million people increased between the pre-crisis and post-crisis periods from 61.6% to 77.3%. For the Metropolitan Regions containing a city of at least 250,000, their aggregate national economic growth contribution fell from 23.8% to 14.5%; for Non-Metropolitan Regions Close to Metropolitan Regions their share fell from 4.9% to 4.6%; for Non-Metropolitan Regions Close to Small City their share fell from 3.1% to 1.4%; and for Non-Metropolitan Regions Which are Remote their share fell from 6.5% to 2.2%. In other words, **during the post-crisis period, almost all of increasing share of national aggregate US economic growth was accounted for by the Large Metropolitan Regions.** We know how crucial innovation is for driving economic growth, and the fact that some 90% of all innovation-related jobs were generated in just the five large US cities of San Francisco, San Jose, Seattle, Boston and San Diego⁷² reflects this concentration of growth-enhancing activities in very large US cities.

70. Garcilazo, et al., *Regional Inequalities and Contributions to Aggregate Growth in the 2000s: an EU vs US Comparison Based on Functional Regions*

71. In the OECD regional classification system small regions are known as OECD TL3 – Territorial Level 3 regions. TL1 refers to countries, TL2 refers to large regions embedded within countries, and TL3 regions are embedded within TL2 regions.

72. Atkinson et al., *The Case for Growth Centers: How to Spread Tech Innovation Across America*

Table 4 Pre-Crisis and Post-Crisis Contributions to Aggregate Economic for Different Types of Regions: USA and EU
Source: Garcilazo et al.

Change in Aggregate Contributions to Economic Growth (2001-2007) → (2008-2017)	USA	European Union	EU-15	Eastern European Economies
Large Metropolitan Regions with a city > 1m	61.6 → 77.3	36 → 41	38 → 46	25 → 26
Metropolitan Regions with a city > 250,000	23.8 → 14.5	33 → 37	32 → 36	37 → 40
Non-Metropolitan Regions near a City of > 250,000	4.9 → 4.6	12 → 12	14 → 14	7 → 8
Non-Metropolitan Regions near a City of < 250,000	3.1 → 1.4	14 → 8	11 → 3	27 → 24
Remote Regions	6.5 → 2.2	5 → 2	5 → 2	4 → 3

Using the same methodology, they then examine the case of the European Union, and here the results are rather different to those displayed by the USA. For 25 EU countries, Garcilazo et al. demonstrate that the aggregate contribution to overall EU growth of the various types of regions in the EU are very different to those observed in the USA. Specifically, as can be seen in Table 1, across the European Union, Large Metropolitan Regions containing cities of at least 1 million people increased their share of aggregate EU economic growth between the pre-crisis and post-crisis periods from 36% to 41%; for the Metropolitan Regions containing a city of at least 250,000, their aggregate contribution to EU economic growth contribution increased 33% to 37%; for Non-Metropolitan Regions Close to Metropolitan Regions their share remained unchanged at 12%; for Non-Metropolitan Regions Close to Small City their share fell from 14% to 8%; and for Non-Metropolitan Regions Which are Remote their share fell from 5% to 2%. In other words, during the post-crisis period, all of increasing share of EU aggregate economic growth was accounted for by a combination of both the Large Metropolitan Regions and also the Metropolitan Regions. This suggests that across the European Union there was a broader role played by different types of urban regions containing functional urban areas of at least 250,000 people in growth and recovery than in the USA, where recovery was concentrated primarily only amongst the very largest regions containing a city of at least 1 million or more people. These EU-wide figures, however, also hide important differences. In order to uncover these Garcilazo et al. separate out the EU-15 countries, which were all members of the EU prior to the 2004 accession of the former transition economies of central and eastern Europe, from the new member former transition economy states from eastern Europe. For the period in question, the EU-15 group of countries comprise: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, The Netherlands, Portugal, Spain, Sweden and the UK, while the central and eastern European countries comprise Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovak Republic and Slovenia. By undertaking the same type of

analysis Garcilazo et al. show that for the EU-15 countries, Large Metropolitan Regions containing cities of at least 1 million people increased their share of aggregate EU-15 economic growth between the pre-crisis and post-crisis periods from 38% to 46%; for the Metropolitan Regions containing a city of at least 250,000, their aggregate contribution to EU-15 economic growth contribution increased 32% to 36%; for Non-Metropolitan Regions Close to Metropolitan Regions their share remained unchanged at 14%; for Non-Metropolitan Regions Close to Small City their share fell from 11% to 3%; and for Non-Metropolitan Regions Which are Remote their share fell from 5% to 2%.

Meanwhile, for the central and eastern European former transition economies, the respective figures are: Large Metropolitan Regions containing cities of at least 1 million people increased their share of aggregate economic growth of these countries between the pre-crisis and post-crisis periods from 25% to 26%; for the Metropolitan Regions containing a city of at least 250,000, their aggregate contribution to EU economic growth contribution increased 37% to 40%; for Non-Metropolitan Regions Close to Metropolitan Regions their share increased from 7% to 8%; for Non-Metropolitan Regions Close to Small City their share fell from 27% to 24%; and for Non-Metropolitan Regions Which are Remote their share fell from 4% to 3%.

These various results tell us that **in the post-crisis period, cities proved to be generally more resilient to the adverse economic shocks than small urban or rural regions. This was true on both sides of the Atlantic.** In addition, in the USA it was the large metropolitan areas that recovered the most strongly from the 2008 shocks, whereas across Europe smaller metropolitan areas played an important role in economic recovery, especially in central and eastern Europe. **However, these various patterns also produced quite different experiences in different countries, depending on their existing spatial structures.** For example, we can compare the USA, a country with large interregional prosperity gaps and many very large cities, with that of Finland, a country

with very small interregional prosperity gaps and primarily only small cities. In the case of the USA, large cities dispersed across the country primarily drove the economic recovery in the USA after the 2008 crisis, whereas in Finland, it was also small cities which were key to recovery. In the USA many inland cities continued to suffer while coastal cities prospered, whereas in Finland all cities recovered. As such, at a national level the population growth gaps between metropolitan urban and non-metropolitan urban areas in the USA are small whereas in Finland they are large. Similarly, in both the UK and Germany economic growth is not dominated by metropolitan urban areas, but in the UK economic growth is spatially concentrated in certain regions whereas in Germany it is widely distributed.⁷³ Again, both Austria

and Sweden exhibit faster rates of widening in population growth between metropolitan and non-metropolitan areas than the USA, although the absolute gaps in prosperity are much higher in the USA than in either Sweden or Austria. In Greece, economic growth is dominated by metropolitan urban areas, although population growth is lower in these areas than in non-metropolitan areas. The heterogeneity of growth trajectories is very marked. As such simple characterisations of the economic geography of growth which were previously popular⁷⁴ are no longer tenable, and it is important to examine the specifics of each country, many of which display alternative growth trajectories to simple convergence or divergence descriptions.

4. Alternative Regional Growth Trajectories

What these comparisons demonstrate is that **the relationships between economic growth and city size structures differ in different parts of the world**. While in the USA, the post-crisis recovery was dominated almost entirely by the largest cities, across western Europe a wide range of differently-sized metropolitan urban areas played an important role in recovery and growth, while in central and eastern Europe, many types of both metropolitan and non-metropolitan areas contributed significantly to growth.

These differences also reflect national differences in the economic geography of growth between individual countries, whereby countries can be classified into different groups according to the economic geography of their growth characteristics. On the one hand, we can categorise countries into the spatial patterns of growth according to two broad dimensions, namely those where recent economic has been spatially concentrated in a small number of cities and regions, versus those countries where economic growth has been more widely distributed across a range of different cities and regions. On this categorisation, as has been seen, the OECD countries where economic growth between 2001 and 2017 has been spatially concentrated include

Australia, Czech Republic, Denmark, Estonia, Finland, France, Greece, Ireland, Korea, The Netherlands, Norway, the Slovak Republic, Sweden and the UK, while the countries where economic growth has been spatially distributed include Austria, Belgium, Canada, Chile, Germany, Hungary, Italy, Japan, Latvia, Lithuania, Mexico, New Zealand, Poland, Portugal, Slovenia, Spain, and the USA. In addition, we can characterise the geography of economic growth according to whether it is dominated by large cities or not, as advanced by Garcilazo et al. On this basis, the countries where economic growth has been concentrated in large cities include: Estonia, Italy, Finland, France, Greece, Lithuania, and the USA, whereas for countries such as Austria, Belgium, Czech Republic, Denmark, Germany, Hungary, Latvia, The Netherlands, Poland, Portugal, the Slovak Republic, Slovenia, Spain, Sweden and the UK, economic growth has not been dominated by large cities.

As such, what all of these different pieces of evidence examined here suggest is that while being large, urbanised and somewhat interregionally unequal had some slight overall advantages in terms of economic resilience to the 2008 shocks, across the OECD countries growth dynamics were not purely related

⁷³ Carrascal-Incera et al., *UK Interregional Inequality in a Historical and International Comparative Context*

⁷⁴ World Bank, *World Development Report 2009: Reshaping Economic Geography*

to urban scale, and instead these processes were rather more nuanced. In particular, across Europe, the role of urban scale in driving growth is not as pronounced as is the case with the USA. Rather than urban scale per se, across Europe, the productivity of a city centre increases by between 1% and 1.5% for every doubling of the population living within a 300km radius of the city centre.⁷⁵ As such, European cities tend to rely relatively more on so-called 'borrowed size',⁷⁶ whereby linkages with other cities in their hinterlands play a crucial role, than do US cities. This may in part be a result of the much greater spatial population densities in European than in the USA, but also generally more restrictive land-use planning systems and a longer and different history of city formation may also play a role here.

In addition, we know that **across the OECD Non-Metropolitan Regions Close to Metropolitan Regions enjoyed the higher economic growth rates in the post crisis period.** This is likely to be in part due to the fact that many metropolitan areas were slowly spreading out, while at the same time areas in the immediate vicinity of Large Metropolitan areas and Metropolitan Urban areas were better able to access markets in these core agglomerations. During the years since the New Millennium the rapidly increasing use of internet-based technologies in workplace activities also facilitated increased use of telecommuting as well as transportation-based commuting and many of these areas appear to have benefited from these changes. **Many of these regions offer an improved quality of life over many of these areas, so the greater availability of such technologies is likely to have improved their accessibility on lifestyle grounds.**

Somewhat pushing in different directions to, and potentially against these dispersal trends, however, are the wider implications of increased digitalisation and automation which point to greater interregional divides between more and less prosperous places.⁷⁷ The ability of the new technologies to help to foster local economic development will depend not only the provision of digital infrastructure, but also the availability of digital skills, which already tend to be associated with higher skills profiles in service sector activities. Yet, the current pandemic has spurred the adoption, adaptation of, and the learning from, these new technologies and these may alter the balance of growth between different types of areas. In particular, **the greater post-crisis use of these technologies is likely to increase the hinterlands of the largest and most prosperous cities, thereby improving the sorting and job-matching possibilities for large centres, at the expense of the employment activities taking place within small urban centres within the 'shadow' of the large centres. This will tend to imply greater divergence. On the other hand, workers adopting widespread hybrid working practices, whereby larger shares of time will be spent working at home, will also engender larger expenditure multipliers in local economies, thereby offering new localised growth opportunities in these places and potentially driving interregional convergence. Yet, overlaying all of this are the potential capital shocks⁷⁸ associated with the pandemic, which in all likelihood will favour larger centres at the expense of smaller centres, thereby encouraging further interregional divergence.**



Prague (Source: Denis Poltoradnev, www.pixabay.com)

75. OECD, *The Metropolitan Century: Understanding Urbanisation and its Consequences*

76. Garcilazo and Oliveira-Martins, *New Trends in Regional Policy: Place-Based Component and Structural Policies*

77. OECD, *Productivity and Jobs in a Globalised World (How) Can All Regions Benefit?*; OECD, *Job Creation and Local Economic Development 2018: Preparing for the Future of Work*

78. McCann and Ortega-Argilés, *The Covid-19 Shock: The UK National and Regional Implications in the Light of International Evidence*

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