

McCann, Philip; Ács, Zoltán J.

Working Paper

Globalisation: countries, cities and multinationals

Jena Economic Research Papers, No. 2009,042

Provided in Cooperation with:
Max Planck Institute of Economics

Suggested Citation: McCann, Philip; Ács, Zoltán J. (2009) : Globalisation: countries, cities and multinationals, Jena Economic Research Papers, No. 2009,042, Friedrich Schiller University Jena and Max Planck Institute of Economics, Jena

This Version is available at:
<https://hdl.handle.net/10419/31787>

Standard-Nutzungsbedingungen:

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

Terms of use:

Documents in EconStor may be saved and copied for your personal and scholarly purposes.

You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.

If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.



JENA ECONOMIC RESEARCH PAPERS



2009 – 042

Globalisation: Countries, Cities and Multinationals

by

**Philip McCann
Zoltan J. Acs**

www.jenecon.de

ISSN 1864-7057

The JENA ECONOMIC RESEARCH PAPERS is a joint publication of the Friedrich Schiller University and the Max Planck Institute of Economics, Jena, Germany. For editorial correspondence please contact markus.pasche@uni-jena.de.

Impressum:

Friedrich Schiller University Jena
Carl-Zeiss-Str. 3
D-07743 Jena
www.uni-jena.de

Max Planck Institute of Economics
Kahlaische Str. 10
D-07745 Jena
www.econ.mpg.de

© by the author.

Globalisation: Countries, Cities and Multinationals

June 2009

Philip McCann

University of Waikato NZ

University of Reading UK

University of Groningen, The Netherlands

Zoltan J. Acs

George Mason University

Abstract

In this paper we explore the relationship between the size of a country, the size of its cities, and the economic performance of the country. In order to do this we integrate three different literature, namely the literature on optimal country size, literature on historical processes of urbanisation and the performance of cities, and literature on the role of multinational firms in the global economy. Using an economic geography perspective, we demonstrate that the relationship between city-size and the prosperity of the nation state, to a much more complex set of relationships. In the modern era of globalisation the role of global companies within the city-region is critical, and city-regions in turn are seen to drive national economies. As such, the relationships between firms, cities and countries have been largely reversed, casting doubt on various institutional economic theories.

JEL-classification: R12, F23, N90, O33

Keywords: scale, cities, countries, multinational firms, globalisation

Contact: Philip McCann, Department of Economics, University of Waikato NZ, Department of Economics, University of Reading UK. and Faculty of Spatial Sciences, University of Groningen, The Netherlands. E-mail: pmccann@waikato.ac.nz; p.mccann@reading.ac.uk

1. Introduction

The recent Nobel Prize citation for Paul Krugman's economics research focussed on two aspects of economies of scale: (i) the role played by economies of scale in determining the nature and pattern international trade where factors are immobile between countries, and (ii) the role played by agglomeration in shaping the economic geography of production in a situation where factors are mobile between locations. Krugman's profound insights into the role of home-market effects and agglomeration are so well documented that we need not deal with them here. However, from the perspective of economic geographers, these two different aspects of economies of scale lead to another fundamental question: in terms of economic performance, is the scale of a country more important than the scale of a city or is the scale of city more important than the scale of a country?

This question arises when we consider rapidly-integrating areas such as the European Union, in which the role of an individual nation-state as an arbiter of its own economic prosperity has changed over recent decades. The nature of the scale economies associated with home market effects obviously becomes much more complex as national borders become more porous and the institutional boundaries of the state become increasingly blurred. In response to these developments economic geographers tend to see the role of city-regions as having become relatively more prominent over recent decades relative to the nation-state (Rodriguez-Pose 2003; Scott 1998, 2001), and these city-regions often traverse national borders (Chisholm 1990; Cheshire and Gordon 1995; Delamaide 1994). As such, the importance of the scale economies associated with home market effects is seen by economic geographers to be dependent on the cross-border spatial configuration of the system of city-regions. Economic geographers therefore tend to see the scale effects of cities and regions as being more important than the scale effects of countries. In contrast, many institutional economists employing a largely aspatial perspective (Alesina and Spolaore 2005) see the optimal size of the nation-state as having actually diminished over recent years. As such, they argue for greater institutional fragmentation into smaller countries, with national borders being redrawn into smaller geographically nested units, reflecting a preference for cultural diversity. Yet, these institutional arguments would appear to be at odds with the Krugman insights regarding the home market scale effects associated with large countries. In many ways, however, these differences in terms of the appropriate analytical unit for discussing scale, whereby geographers focus on cities and regions while economists emphasise countries, in turn reflect fundamental differences regarding the nature and role of the nation-state. The economic geographers see urban scale and the permeability of borders as increasingly important whereas the institutional economists see national smallness and the proliferation of borders or boundaries as being increasingly important.

The aim of this paper is to explain that the answer the question - in terms of economic performance, are the scale effects of countries more important than the scale effects of cities or are the scale effects of cities more important than the scale effects of countries? – actually has two distinct features to it. The first feature is that the answer to this question is not static, in the sense that it depends on the time-period in question. We demonstrate this by examining how the relationship between countries and cities has evolved over the four hundred year history of globalisation. By taking this type of historical perspective, we are also able to situate the question within the current era of globalisation. This allows us to demonstrate the second feature of the answer to the question, which is that in today's world the question

cannot be answered without also discussing how the scale effects of multinational companies are related to cities and countries. In order to explain these issues the paper therefore brings together and integrates three rather different literatures and lines of inquiry. These three literatures are: the literature on the optimum size of a country, the literature on historical urbanisation processes and the rise of mega-cities, and finally the recent literature on multinationals firms and global cities.

It will be argued that in today's global economy, the importance of the country depends on the cities located within the country, and the importance of the cities within the country depends on the multinational firms located within the city. Large cities have always been important a drivers of prosperity for a country, but the particular economic role played by different types of large cities appears to have changed over the last fifty years or so. In particular, large and diverse cities have become knowledge centres, and global cities are those cities which are the host locations for multinational firms. Understanding the contemporary nature of this relationship is crucial for our understanding of globalisation and the relative importance of countries versus cities. This paper will therefore argue that the most recent phase of globalisation is once again increasingly challenging the notion of a country by redefining the relationship between cities, multinational trade and growth.

The substantive arguments of the paper are organised into three major sections, namely sections 2, 3 and 4. In section 2 we discuss recent analyses regarding the logic and organisation of a country, and this follows primarily the work of Alesina and Spolaore (2005). Within economics and political science this literature is very widely-cited. Yet, this literature almost entirely ignores issues of space, and also many arguments of a historical nature. In particular, it will become apparent from the discussion here that major missing elements in this approach are the issues of agglomeration economies and economic geography. Therefore, in section 3 we discuss the long term relationships between growth, trade and urbanisation in a historical context, tracing these developments from the Middle Ages right up to the twenty-first century, and demonstrating that historically growth, trade and urbanisation are inextricably linked. As such, the Alesina and Spolaore (2005) arguments only make sense under very restrictive conditions if we also take the role of geography and urbanisation seriously. In most cases it will be seen that their arguments do not make sense. In section 4 we then examine the modern role played multinational firms in the current phase of globalisation, and discuss how their location behaviour relates to the currently-emerging areas of economic integration. It will be seen from this analysis that the rise of global cities is crucial in understanding the behaviour of modern multinationals, and this role has changed over the last five decades. Our conclusion is that the future role and definition of a country will increasingly be mediated by the future interactions between multinational firms, global cities, and the areas of economic integration in which they are located. As such, the arguments here lend support to the economic geography emphasis on the role of city-regions rather than the institutional economics' emphasis on small states.

In terms of methodological issues, the paper intentionally uses no mathematical modelling or econometrics. Nor do we discuss in detail the insights of particular theoretical models of the economic geography of globalisation, as these are well-rehearsed elsewhere (Fujita 2007; McCann 2008; World Bank 2009). Rather, we focus here simply on the observed historical outcomes of such processes right up to the present day using historical data of cities and countries. Many specific aspects of each the issues discussed here have been previously examined elsewhere using either mathematical or econometric modelling, and of course these

are referred to in the text. Rather, it is the examination of the links between these different issues which is of importance here.

As we will see in this paper, a very small number of development economists have begun to make the link between the optimal size of a country and economic geography, while economic geographers working on global cities have been developing links between urbanisation and multinationals. Yet, the links between all three literatures have not previously been made, and the aim of this paper is to demonstrate that in the current era of globalisation, the linking of these three literatures provides powerful insights into the modern nature of globalisation. In order to facilitate the building of these links, each of three major sections of the paper, namely sections 2, 3 and 4, is followed by a 'preliminary conclusion', which summarises the major insights arrived at in the literature discussed in that section. Each preliminary conclusion is neither a hypothesis nor a lemma, but simply a synthesis of the current state of knowledge from each strand of literature presented. As we will see, globalisation today links all three sets of issues in a new way, such that it is not possible to ask whether cities are more important than countries without also asking questions about the multinational firms operating in the cities.

The paper is organised as follows. The next section discusses the optimal size of a nation-state, section 3 discusses the historical relationship between cities, urbanisation and states, and section 4 discusses the contemporary relationship between multinationals and cities. On the basis of all of the foregoing analyses section 5 answers the basic question as set, and section 6 then provides some further thoughts.

2. Countries and Nation States

The four centuries spanning the sixteenth to the nineteenth century represents the period in which almost all parts of the world came to be dominated to some degree by the emergence of large European powers such as France, Netherlands, Spain, Austria-Hungary, Britain and Russia (Findlay and O'Rourke 2007; Maddison 2007). The modern notion of sovereignty which governed the international relations between these powers is usually attributed to the Treaty of Westphalia in 1648, whereby the state was viewed as exercising comprehensive (over all issues), supreme (no superior authority), unqualified (by any other state), and exclusive (no joint sovereignty) control (Easton 2007). Yet, these principles were established at a time when in comparison to today there was little economic interaction between states, the economic relations were primarily contained within their own individual colonial systems (Findlay and O'Rourke 2007). This is in marked contrast to the modern nation state, which is a relatively recent concept, and primarily a result of the nineteenth and twentieth century breaking up of the very empires which had driven the globalisation processes for three hundred years (Ferguson 2006). That this is so can be seen from the fact that only about ten of today's 190 or so nation states existed largely in the form they do now at the beginning of the nineteenth century, and only twenty or so existed largely in their current form even in the mid-nineteenth century (Easton 2007).

In orthodox trade theory and international business theory, economists generally assume that the size of the country is exogenous, being determined by history. While much research focuses on the role played by institutions and trade barriers in promoting growth (World Bank 2003, 2007, 2008a), it is generally assumed that the size, and border geography of a country is given, at least in the short to medium term. Yet, the observations above suggest that over medium to long term, the number and size of countries is itself variable. While the

formation and fragmentation of states is central to the work of many historians and political scientists, outside of economic history such issues have tended to play almost no role in modern economics, until very recently. Much of the interest in these issues has been spawned by the processes of globalisation, because such processes ask fundamental questions about the nature and role of the nation state.

According to Alesina and Spolaore (2005), the size of country depends on a trade-off between the benefits of size versus the costs of heterogeneity. On the one hand, the benefits of being a large country relate to the efficiency gains in the provision of public goods, such as monetary and fiscal institutions, police, defence, health, embassies, national parks, transport infrastructure, the taxation system bureaucracy, all of which may be associated with economies of scale. Indeed, empirical evidence suggests that the relative size of government spending is inversely related to the size of the country. At the same time, larger countries also imply larger economies, and thus larger size economies should be more productive, and this 'home market effect' has been observed in many cases (Fujita et al. 1999). National size also helps with interregional fiscal transfers, both of a temporary insurance nature or of a more systematic income distributional nature, since independent states cannot be partially stabilised by other countries.

These scale benefits associated with large countries are in contrast with the benefits of being a small country, which arise primarily in an environment of preference heterogeneity. Such preference heterogeneity arises out of local variations in culture, language, ethnicity, and historical experience (Alesina and Spolaore 2005). In a context of heterogeneous preferences, the centralised provision of public goods would exhibit congestion costs and diseconomies of scale. From a welfare perspective, the optimum size of a country is the size which maximises the average level of citizen welfare, by providing the optimal bundle of public goods which takes account of the trade-off between economies of scale in public good provision and preferences heterogeneity, subject to certain constraints. One of these constraints is the fact that in these welfare maximisation terms, the optimal size of the state will generally differ for every good, service or policy. As such, this would lead to an overlapping maze of borders, which would be inefficient in the presence of economies of scope or scale. Broadly, therefore, because of these jurisdictional problems, higher economies of scale or scope tend to imply fewer centralized jurisdictions (Alesina and Spolaore 2005).

The arguments of Alesina and Spolaore (2005) lead to several direct and testable conclusions. Firstly, the importance of the effect of country size also depends on the level of the country's openness to the global economy. This is because the relationship between size of a country and the size of its market depends on the degree of openness to international markets. Under complete autarky, the size of a country and the size of its market are the same thing, while in a world of complete international openness they are entirely independent of each other. In the more typical case where countries are neither perfectly closed nor perfectly open to one-another, the more open is a country, the larger will be its market size. Assuming preference heterogeneity, then these arguments also imply that the more open is a country, the smaller will be the country's optimum size, and much evidence supports this (World Bank 2007). This relationship should also be accelerated as trade barriers fall and global economic integration increases, and the number of small countries should increase as these are the very countries which have relatively the most to gain from free trade. Secondly, the arguments of Alesina and Spolaore (2005) also suggest that dictatorships will prefer larger countries in order to extract more taxation rents from their populations. Democratisation should therefore produce many smaller countries, each of which is more internally homogenous. The evidence

which Alesina and Spolaore (2005) point to in support of their arguments regarding preference heterogeneity favouring small countries comes from the fact that whereas in 1945 there were 74 independent countries, following the break-up of the Soviet Union, the dissolution of the European colonial systems, and the rapidly increasing process of globalisation, by 2005 there were 193 countries (Alesina and Spolaore 2005). As of 1995, 87 countries had less than million people, 58 had less than 2.5 million, and 35 countries had less than 500,000 inhabitants. By 2005, more than half of the world's countries had less than 6 million inhabitants.

Thirdly, the arguments of Alesina and Spolaore (2005) also predict that the greater regional variation in preferences, and also regional variations in income within a country, the greater will be the pressure for fragmentation. On one hand, in terms of the preference heterogeneity of the geographically or economically peripheral regions, this pressure comes from the sense of political, cultural and economic isolation and a perceived lack of influence and marginalisation in national affairs. At the same time, where significant interregional fiscal transfers operate from wealthy to poorer regions, pressure for fragmentation of the state can also come from the economic centre. In addition, in an environment where the economic centre has little appetite for the fragmentation of the state, such secession activity can also be viewed as a rational strategy for extracting rents and transferring these from the centre to the periphery, as with the case of Spain and the UK. Evidence in favour of national fragmentation pressure emanating from the economic periphery comes from observations of Scottish, Catalan, Basque, Quebec, and Slovak nationalism, while national fragmentation pressure emanating from the economic centre comes from observations of Northern Italy, Belgium and the Czech Republic.

However, there are also other observations which cast doubt on the arguments and empirical observations raised by Alesina and Spolaore (2005). Alesina and Spolaore's arguments are really asking questions about institutions, and in particular, institutions concerning governance and trade. Yet, recent work increasingly suggests that there are no simple ideal institutional typologies for countries wanting to grow, and this is particularly so in the case of developing countries (Rodrik 2007). Moreover, the impacts of institutional arrangements including border arrangements will themselves also depend heavily on both the economic and political geography (Collier 2006; World Bank 2009). Here, the arguments of Krugman (1991), Fujita et al. (1999), Collier (2006), Venables (2006), Fujita (2007, 2008) and the World Bank (2009) all point to the critical role of both agglomeration economies and geographical proximity and accessibility in fostering national growth. The most successful newly-industrialising countries are those large countries which also contain large cities (McCann 2009a) as these countries are able to achieve home market scale effects and agglomeration economies which are not possible for small countries. In contrast, according to these economic geography arguments, the very countries which are most vulnerable in the current phase of globalisation and increasing openness are almost all small countries, precisely because of a lack of economies of scale, agglomeration and geographical accessibility (Collier 2006; World Bank 2009). In terms of scale, fifty-eight of the countries which comprise the bottom billion of the global population are small. These fifty-eight countries have a combined income of less than that of India and most are actually declining in wealth in both absolute as well as in relative terms (Collier 2006). This however, is not a new reality. For example, the micro-state model of the German confederation of 35 monarchies and four free cities 1815-1866 became obsolete by the mid 19 century, primarily due to the falling costs of distance and increasing regional trade (Easton 2007). As such, modern

notions of nationalism and the large nation-state mainly arose after, and partly in response to, the nineteenth century trends in globalisation.

The Alesina and Spolaore arguments in favour of smallness in an integrating world therefore appear to be largely at odds with much economic geography theory applied to today's developing countries and also to many historical observations in the developed parts of the world economy. Instead, they seem to be really only appropriate to small countries which are already rich, such as small European states plus a few exceptional cases such as Singapore and New Zealand. As such, at this stage something still appears to be missing, in that we need to ask - how do countries become rich, and how do the interregional variations in income which drive Alesina and Spolaore's hypotheses arise in the first place? Economic geography arguments imply that the optimal size of a country cannot be divorced from the issue of the size and role of cities contained within the country. Indeed, any cartographic border changes, whether towards a smaller or larger national size, will obviously change the relationship between the size of a country and the size of its cities. However, there may also be rather more fundamental and substantive changes to these relationships which take place. As we will see in the following sections, this relationships have been changing over different eras of globalisation as part of a longstanding historical process.

PRELIMINARY CONCLUSION 1: *The optimal size and role of the nation state cannot be divorced from the economic geography question of the optimal size and role of the city.*

3. Cities and Urbanisation

During the early Middle Ages, major cities were non-existent in western Europe. In Charlemagne's coronation year of 800, the only cities in western Christendom with more than 30,000 inhabitants were Rome (50,000), Naples, (30,000) and Verona (30,000). However, large settlements were few and far between across all areas of Europe. While the Eastern Empire was dominated by Constantinople (250,000), only one other city had more than 35,000 inhabitants (Thessalonica 40,000) (Chandler 1987). A similar picture also emerges in Moslem Europe, the largest city of which was Cordova (160,000), and whose second city was Seville with 35,000 (Chandler 1987). By the turn of the first millennium Baghdad was the largest city in the world, and with 1.2 million inhabitants (Modelska 2003), and as the dominant city of the Moslem world it was also the global centre of technology and learning. Baghdad was three times as large as the next largest city, Cordova, which with 450,000 inhabitants (Chandler 1987; Modelska 2003) had grown to become the largest city in Europe. It was only during the later Middle Ages, and in particular at the end of the twelfth century, that urbanization in northern and western Europe really started, and continued apace through the thirteen to fifteenth centuries, a period characterised nowadays as the transition between the late Middle Ages and the early Renaissance. During this transition period, various city-states grew to economic pre-eminence such as Venice, Florence, Lisbon and Antwerp (Alesina and Spolaore 2005), as well as the development of the Hanseatic League in Northern Europe. The rise of each of these city-states was also associated with rapid wealth-creation. By the early fourteenth century, Venice's budget was approximately equal to that of Spain, and only 20% less than the whole of France (Alesina and Spolaore 2005), while its population of 110,000 was second only in Europe to that of Paris, which at 228,000 (Chandler 1987), was the capital of the largest country in Europe. The flourishing of cities as centres of commerce in fifteenth century Italy and the Low Countries lead to rapid urbanisation in these regions. As we see in Table 1, by the end of the fifteenth century, the Low Countries and Italy were by far the most urbanised parts of western Europe. In these

regions, the proportion of the total population which lived in cities of over 10,000 was more than twice that of any other part of western Europe.

Table 1 Urbanization and Industrialisation Indices

During the sixteenth century, in terms of westward colonial expansion to the Americas after 1492, Spanish expansion proceeded rapidly throughout the sixteenth century, with increasing movements of people, goods and precious metals (Findlay and O'Rourke 2007). After Cabral's discovery of Brazil in 1500 Portugal also rapidly expanded its sugar-producing colony in South America (Findlay and O'Rourke 2007). The late sixteenth century and early seventeenth century was the era when the Dutch Republic embarked on its first major wave of colonial expansions. Portugal and the Dutch Republic vied for supremacy in the trade routes to the East around the Cape of Good Hope (Findlay and O'Rourke 2007). The Dutch Republic set up colonies in South Africa and the East Indies, and also set up a trading post with Japan, at Deshima Island outside of Nagasaki. At the same time, the Portuguese developed trading posts and ports in India (Goa), southern Africa and also set up trading posts with China at Macao in 1557 and Japan at Nagasaki in 1571 (Findlay and O'Rourke 2007). Meanwhile, the Spanish developed the first trade routes with the East across the Pacific, between the New World and Asia, after claiming The Philippines in 1542, although effective occupation only began from 1564 onwards (Findlay and O'Rourke 2007).

In the sixteenth century the urbanization processes in Italy stalled, and it would appear that this was related to the fact that during this period the Italian states did not benefit from the expanding trade and resource-acquisition opportunities afforded by colonial expansion. In contrast, during the sixteenth century both Spain and Portugal undertook significant colonial expansions, and this was associated with increasing urbanisation in both countries. Increasing urbanisation is also observed for the Dutch Republic during its seventeenth century period of colonial expansion (Ferguson 2008). In each case, major cities emerged as the commercial centres of these expanding colonial systems. Amsterdam was the hub of the expanding Dutch empire, while Lisbon emerged as the hub of Portuguese colonial expansions. In terms of Spanish territory, at the beginning of the sixteenth century, while Paris remained Western Europe's largest city with 245,000 inhabitants, it was now closely rivalled by Naples with 224,000 inhabitants (Chandler 1987). More noticeably, in 1600, along with Seville, Milan and Palermo, the kingdom of Spain now also contained five of the ten western European cities with over 100,000 inhabitants, the others being London, Lisbon, Venice, Prague and Rome (Chandler 1987). However, by 1700, the century-long rise of the Dutch Republic and the growth of Dutch Trade had resulted in Amsterdam emerging as the third largest western European city, after London and Paris (Table 2), and the Low Countries as the most densely urbanised regions of western Europe (Table 1). By 1700, these three cities were the home locations of the East India and West India companies of England, Netherlands and France (Findlay and O'Rourke 2007). Following the original founding of the VOC Dutch East India Company in 1602 (Ferguson 2008), these trading companies emerged as the first major joint stock-issuing multinational corporations and it was these organisations that spearheaded the internationalisation processes of the three major European nations.

Table 2 The World's Largest Cities in 1700

In Table 2 we see that the largest fifteen cities in the world in 1700 ranged in population from Constantinople (Istanbul) at 700,000 to Lisbon at 188,000. Nine of the world's fifteen largest cities were in Asia, with five being located in western Europe, as well as Constantinople at the crossroads of Europe and Asia. The two largest cities of western Europe, namely London and Paris, were almost identical in size. However, Table 2 also demonstrates that the major cities of Europe in 1700 were largely of the same order of magnitude as the largest cities in other parts of the world. This may appear surprising given that the populations and economies of China and India were far larger than for any other countries. Yet, clues as to why the European and Asian cities were of the same order of magnitude comes from the fact that the national per capita GDP of the dominant European cities' own countries, was already of the order of two to four times that of the major Asian economies.¹ In 1700, productivity in The Netherlands was almost twice that of any other country. This suggests that while the size of a major city appears to be partly related to size of the country in which it is located, the city size also appears to be related the productivity of the country in which it is located.

Table 3 The World's Largest Cities in 1800

The eighteenth century was the era during which Great Britain had undergone the first phase of the industrial revolution, particularly after 1750, with rapid industrialisation, capitalisation and urban-rural migration. As we see in Table 1, by 1800, Britain was the most industrialised country in the world. Meanwhile, the extent of urbanisation in England, Wales and Scotland had also grown to a much greater degree than any European country apart from the Low Countries of The Netherlands and Belgium, and to a far greater extent than France. The result of this was that by 1800 London had become the second largest city in the world, and some 57% larger than western Europe's second largest city, Paris. As we see in Table 3, by 1800, six of the world's largest fifteen cities were now located in western Europe, although the list of European cities in the global city rankings had changed somewhat. Most notably, Moscow and Vienna were by then both members of the world's largest fifteen cities. The growth of these cities during the eighteenth century coincided with the growth of Russian Empire under Peter the Great and Catherine the Great, and the growth of the Habsburg Monarchy, respectively.

Table 4 The World's Largest Cities in 1850

The period between 1800 and 1850 was a period of increasing urbanisation and industrialisation in both north western Europe and the United States. As we see in table 1, by the middle of the nineteenth century, the levels of industrialisation in the UK were more than double that of any other nation. The result of this was that UK per capita GDP was the highest in the world in 1850 and London was by then the world's largest city (Table 4). Paris was also by now the third largest city in the world, and for the first time cities in North America, most notably New York, appear in the list of the world's largest fifteen cities, although the level of industrialisation in the US at this stage was still only equivalent to France (Findlay and O'Rourke 2007). The overall rate of growth of the largest cities, however, was increasing. Of the world's largest cities in 1850, during the fifty years between 1800 and 1850, ten out of the world's largest fifteen cities had experienced faster growth than their equivalent ranked city in 1800 had experienced during the previous hundred years

¹ Pomeranz (2000) argues that the labour productivity gap between the European and Asian economies was very much lower than the Maddison (2006, 2007a,b) figures would imply. However, these disagreements do not alter the basic argument of this paper.

between 1700 and 1800. Yet, by 1850, only six of the world's fifteen largest cities were in Asia. These changes in the scale of the major cities therefore also point to a geographical shift in the nature of urbanisation. In particular, the change in global city rankings between 1800 and 1850 reflects the fact that rapid industrialisation was taking place in the European and North American economies in comparison to the major Asia economies which remained largely rural.

Table 5 The World's Largest Cities in 1900

The era with the fastest growth of industrialisation was the second half of the nineteenth century up to the eve of WWI. During the fifty years leading up to WWI, while the levels of industrialisation in UK and France had doubled, in the USA and Germany they had increased six-fold. Between 1820 and 1913 these enormous increases in the levels of industrialisation were also associated with rapidly increasing inequality between the different parts of the world, with the rich industrialised Atlantic economies plus British off-shoots pulling away from the rest of the world (Findlay and O'Rourke 2007).

This period of enormous industrialisation also coincides with the era of the most rapid period of urbanisation. As we see in table 1, the global urbanisation rates had tripled during the nineteenth century. By comparing Table 5 with Table 4, we see that during the fifty years between 1850 and 1900, eleven out of the world's largest fifteen cities had experienced faster total growth than their equivalent ranked city in 1850 had experienced between 1800 and 1850. The world's largest cities now reflected the economies with both the highest levels of per capita productivity and also productivity growth. As we also see in Table 5, by 1900, twelve out of the world's fifteen largest cities were now either in western Europe or the United States. The fastest growing major city in the world was Chicago, which grew from 100,000 in 1858 to over 1.7million in 1900. Moreover, even the largest city in the rest of the world (Tokyo) was now located in Asia's highest per capita productivity economy. Apart from the Beijing which was actually contracting, the only major exception to these general patterns in the nineteenth century was that of the Indian cities of Lucknow, Mumbai, and Kolkata, each of which were transshipment points, ports, as well as military garrisons for the British East Indian Company. As such, the growth of these cities can be understood in relation to the enormous growth of the British Empire during the nineteenth century.

Table 6 The World's Largest Cities in 1925

The evidence presented so far regarding from the late Middle Ages right up to the eve of WWI all points to a clear positive link between industrialisation, trade, growth and urbanisation. Not surprisingly therefore, by 1925, as the dominant city of the world's dominant economy, New York had emerged as the world's largest city (Table 6). Moreover, by now fourteen of the world's largest fifteen cities were located either in Europe, USA or Japan. Only Buenos Aires, which was the world's fastest-growing major city in the early part of the twentieth century, was outside of these regions, and this too was located in a rich country. In 1925, all of the world's largest cities were in the richest and largest economies.

However, the urbanisation growth rates of the largest cities as a whole had slowed down slightly during the first quarter of the twentieth century. Of the world's largest cities in 1925, during the twenty-five years between 1900 and 1925, only four out of the world's largest fifteen cities had experienced faster total growth than the equivalent ranked city in 1900 had experienced during the previous fifty years between 1850 and 1900. This slowing down of

the urbanisation growth rates of the largest cities also continued through the depression and war era of the 1930s and 1940s (Table 7). Of the world's largest cities in 1950, between 1925 and 1950, only six out of the world's largest fifteen cities had experienced faster growth than their equivalent ranked city in 1925 had experienced between 1900 and 1925. Apart from the rapid growth of Los Angeles, in terms of the industrialised countries, the overall global city rankings therefore remained relatively stable between 1925 and 1950. This slowing down of the rate of urbanisation growth was also associated with a massive global contraction of trade and foreign investment (Crafts 2004). In the inter-war years, all major economies increasingly re-oriented their trade primarily to within the sphere of their own colonial systems (Findlay and O'Rourke 2007). Urbanisation had always been closely associated with industrialisation, and as economic growth and trade fell, so therefore did the growth of urbanisation. The period characterised by the Depression and the Second World War can in many ways can be considered as marking the end of the first major phase of global urbanisation, which from 1750 to 1950 had been dominated by Europe and North America. This initial phase of urbanisation-industrialisation had lead to an increase in the global number of urban dwellers from fifteen million to over 400 million, and an increase in the global urbanisation index from 10% to 52% (UNFRPA 2008). The immediate post-WWII period can be regarded in many ways as marking the start of the second phase of global urbanisation (UNFPA 2008). Since 1950, not only has the urbanisation rate increase globally, but this second phase of global urbanisation has also been qualitatively quite different in many ways to the first phase. In particular, this second phase of globalisation since 1950 has been dominated by the rise of urbanisation in developing countries.

Table 7 The World's Largest Cities in 1950

During the post WWII Bretton-Woods era, the growth in urbanisation once again picked up. In 1950 there were globally sixty-seven cities with over one million inhabitants (Chandler 1987), whereas by 1975 there were one hundred and ninety urban agglomerations with over one million inhabitants (Chandler 1987). The US accounted for twenty-five of these million-plus agglomerations, western Europe accounted for thirty-four, and Warsaw-pact Europe accounted for fifteen such agglomerations (Chandler 1987). The proportion of the US population living in cities increased at a higher rate in the post-war era than during the inter-war period (Leven 1999). However, while most cities continued to grow during this period, there were some industrial cities which actually declined in population during this era as manufacturing exhibited an urban-rural drift. In Europe this was particularly noticeable in the traditional manufacturing heartlands of the UK (Fothergill et al. 1985) and Germany (Mackensen 1999), while in both the US (Glaeser 2005) and Europe (Sassen 2006) many of the very largest cities saw actual population declines in the core parts of the agglomerations as people moved out to more suburban locations. This decentralisation tended to be associated with ever-increasing commuting distances into the urban centres.

This post-war period also saw the emergence for the first time of rapid urbanisation in developing countries. By 1975 over seventy-five of the one hundred and ninety urban agglomerations with over one million inhabitants were from the so-called Third World countries (Chandler 1987), with seven cities in developing countries, namely Mexico City, Sao Paulo, Buenos Aires, Rio de Janeiro, Cairo, Shanghai and Kolkata, all amongst the world's top fifteen cities (Table 8). Amongst world's largest fifteen cities, between 1950 and 1975, eleven of these mega-cities had experienced faster growth than their equivalent ranked city in 1950 had experienced between 1925 and 1950.

Table 8 The World's Largest Cities in 1975

Between 1975 and 2000 the global process of urbanisation had accelerated. By the year 2000, there were over one hundred and forty cities globally with populations of over two million inhabitants, and nineteen cities with populations over ten million (Le Gales 2002). Moreover, by 2008, at 3.3 billion, the number of people living in urban areas across the world for the first time passed 50% of the global population (OECD 2007; UNFPA 2008), and this process of increasing urbanisation was common to both the industrialised and the industrialising world.

In the developed world, the total urban population in 2005-2006 was estimated to be of the order of 800 million, in other words approximately one quarter of the global urban population of 3.2 billion (World Bank 2008). By 2007 53% of the OECD population lived in urban areas, and this figure rises to almost 80% if less densely-populated intermediate urban areas are included (OECD 2007). The proportion of the population living in urban areas in high income countries increased from 71% to 73% between 1990 and 2005 (World Bank 2008), and by 2002 the OECD contained seventy-eight metropolitan urban regions with over 1.5 million inhabitants. The United Nations expects the urban population of the developed world to increase between 2000 and 2030 by some 16% from 870 million in 2000 to 1.01 billion in 2030 (UNFPA 2008).

Table 9 The World's Largest Cities in 2000

In the developing world, the rate of urbanisation was even more dramatic. By 2005 the developing world's urban population of 2.4 billion accounted for approximately three-quarters of the global urban population (World Bank 2008; UNFPA 2008). The proportion of the population in the low and middle income countries of the developing world which lived in urban areas had increased from 37% to 44% between 1990 and 2005, while during the same period the proportion of the population in developing countries living in cities of over one million inhabitants had increased from 14% to 17% (World Bank 2008). As we see in Table 9, by 2000, ten of the world's largest fifteen cities were from the developing world, and this tendency towards mega-cities in the developing world was not specific to one or two countries, in that these ten cities were located in eight different countries. The recent annual growth of the urban population in low and middle income countries in the developing world between 1990 and 2005 was 2.6% while that high income countries was only 1.1% (World Bank 2008). However, all the evidence suggests that the rate of urbanisation in the developing world will increase even faster relative that that of the developed world. United Nations' predictions suggest that the global urban population will increase to 4.9 billion by 2030, of which 3.9 billion will be in the developing world (UNFPA 2008). As such, the level of urbanisation in the developing world will increase by 60% between 2000 and 2030, which is some 3.75 times greater than the urbanisation rate in the developed world over the same period. Moreover, this unprecedented urbanisation is not simply a result of population growth, in that over the same period, the global rural population is expected to actually decrease (UNFPA 2008). Between 1950 and 2030, the total urbanisation index of the developing world will increase from 18% to 56% (UNFPA 2008), with the majority of this increasing urbanisation taking place in Asia and Africa. By then, Asia and Africa will account for 80% of the global urban population (UNFPA 2008). The mega-cities of the developing world pose major challenges in terms of poverty reduction, environmental degradation, health care, and housing. These are enormous issues in their own right and we do not enter into these complex debates in this particular paper. For our purposes it is

sufficient to note that the rise of urbanisation and mega-cities in the developing world has been one of the two major features of the second phase of global urbanisation.

There is also another new feature of the current phase of global urbanisation which is rather different to the first phase of global urbanisation, and this feature is related primarily to the case of cities in the industrialised world. Between 1700 and 1950 the global city rankings became increasingly dominated by the largest and most productive national economies. Indeed, by 1925 all of the world's largest fifteen cities were located in high income economies. There appeared to be a longstanding direct relationship between urban scale, national productivity and the scale of the national economy. This simple relationship appears to have broken down somewhat between 1950 and 2000, in that the majority of the world's largest cities are no longer located in the world's most productive economies.

It is still very much the case, however, that the world's most productive cities are currently located in the world's most productive economies. Fourteen of the world's fifteen highest per capita productivity cities are located in the USA, with London ranked at thirteenth being the only top-fifteen city located outside of the world's most productive economy (Table 10). Indeed, the twenty-three largest urban areas of the USA all rank in the top twenty-seven most productive cities in the world. The next fifty-five of the world's highest productivity cities are all located in the high income countries (OECD 2007), including Taiwan, Israel, Hong Kong and Singapore. Therefore, in order to examine the role played by these high productivity cities in the modern economy we can calculate their relative productivity with respect to their own national average levels of productivity. Table 9 present these results for both US cities and also non-US cities in the OECD.

Table 10 The World's Most Productive Cities in 2002-2004

As we see in Table 10, the majority of the world's highest productivity cities are not what the OECD (2007) classifies as 'mega-cities' of over 7 million inhabitants. In fact, of the world's seventy-five highest productivity cities (including Singapore, Hong Kong and cities in Taiwan and Israel), 29 are what the OECD (2007) classifies as 'small metro areas' of less than 3 million inhabitants; 32 are what the OECD (2007) classifies as 'medium to large metro areas' of between 3 and 6.99 million inhabitants; and only 14 are mega-cities of at least 7 million inhabitants. Excluding the top twenty-three cities in the US and therefore focusing just on the rest of the world, of the world's most productive 52 non-US cities, 21 are small metro areas of less than 3 million inhabitants; 20 are what the OECD (2007) classifies as 'medium to large metro areas' of between 3 and 6.99 million inhabitants; and only 11 are mega-cities of at least 7 million inhabitants. For OECD cities of over 1.25 million inhabitants, although it is statistically significant, there is only a very weak cross-sectional link between city per capita productivity and city population, which if anything, is slightly negative (OECD 2007). This appears to be related to the effect of the very large cities. For cities of over six million inhabitants, there is a weak but statistically significant negative cross-sectional relationship between city per capita productivity and city population. On the other hand, for cities of less than ten million, the positive relationship between city per capita productivity and city population is both statistically significant and strong (OECD 2007). As such, amongst OECD cities there appears to be something of a $\cap$ -shaped relationship between city per capita productivity and population scale. Observation of Table 9 suggests that if the largest cities from developing countries were also to be included in such cross-sectional estimations, then clearly the effect of population scale will be very much more negative amongst mega-cities than is the case with just the OECD cities. Part of the problem

here is that it is not clear which cities such be included in cross-sectional estimations. Pooled cross-sectional samples of cities from different countries will provide different overall pictures. In order to see this we can consider Table 11.

Table 11 The Highest Productivity Cities in the OECD

Table 12 The Highest Non-US Relative Productivity Cities in the OECD

Table 11 lists the top fifteen per capita productivity US cities and also the top fifteen non-US OECD cities, and indicates their city per capita productivity relative to the national average productivity for the countries in which they are located. Obviously the US rankings remain unchanged, but the non-US rankings differ significantly when measured relative to their national productivity levels. In Table 12 we repeat this exercise after excluding all US cities. The first three columns of Table 12 also exclude cities located in the former transition economies, as well as in Mexico and Turkey. The second three columns include all OECD countries. If we consider the first three columns of Table 12 we see that twelve of the cities are the same as those in the second three columns of Table 11. However, the top fifteen cities in terms of relative per capita productivity in the first three columns of Table 12 are smaller on average than the top fifteen absolute productivity non-US cities. If we now consider the second three columns of Table 12, however, we see that the rankings change dramatically, which are now dominated by cities in the poorer nations of the OECD, some of which are very large cities indeed. Ten out of the top fifteen relative productivity cities are located in either former transition-economy countries or developing country members of the OECD. Using this type of relative ranking also suggests that the most entrepreneurial cities in the developing world are also all large cities (Acs et al. 2008). As such, the productivity advantages of very large cities, appear to be relatively more important for lower income than for rich countries economies.

Although the relationship between city size and productivity is nowadays not so straightforward for rich countries, there is still clearly a very important role for large cities in the industrialised world in terms of driving productivity (Rosenthal and Strange 2004). Yet, it may be that other characteristics of the city are also just as important as scale, and much recent research suggests that key centres of knowledge (Caniels 2000), creativity (Florida 2005) and innovation (Acs 2002). Amongst the rich countries, twelve out of the fifteen most entrepreneurial cities are small to medium sized cities (Acs et al. 2008), while eleven out of the world's fifteen most competitive cities are small to medium sized (Corporation of London 2008). Over recent decades, more cities in the developed world have actually shrunk in size than the number of cities that have grown (UN-HABITAT 2008). As such, the $\cap$ -shaped relationship between city per capita productivity and population scale may have actually shifted to the left slightly, as well as changed shape, as labour out-migration from cities specialised in declining industries gives rise to the growth of other cities specialised in growing sectors. For advanced economies today, knowledge, creativity, innovation and connectivity, appear to be far more important for productivity than simply scale, with the result that across the OECD higher income cities are actually outgrowing lower income cities, irrespective of population scale (OECD 2007).

These findings all suggest that there have been qualitative changes in the role of cities in the industrialised world which favour the competitive advantages associated with cities being centres of knowledge. As Porter (1990) points out, however, it is not regions which compete but firms located in regions. As such, the clues as to why particular cities are highly

productive lie in the types of firms which are located there. For firms which invest heavily in knowledge assets, in order to generate the required returns to their knowledge investments, many of the knowledge-based firms located in such cities must capture markets which extend well beyond the borders of their own country. Traditionally, these returns were generated by exports. However, one of the key features of the current phase of globalisation is that there is now an increasing premium associated with face-to-face contact (McCann 2008), and this implies that the global engagement facilitated by direct international investment is becoming relatively far more important than exporting as a means of global engagement. As such, the relationship between cities, countries, and globalisation is therefore increasingly dependent on the role of multinational firms as conduits and facilitators of such global engagement. This is the third issue to be discussed.

PRELIMINARY CONCLUSION 2: In the developed world urban scale is no longer the unambiguous indicator of either national or city performance, as used to be the case, whereas in developing countries urban scale is a much better indicator of economic performance. The optimal scale of cities in advanced economies appears to be largely similar to the optimal scale in the early twentieth century.

4. Multinational Firms, Economic Integration and Global Cities.

Globalization is not a new phenomenon, in that the process of investment internationalisation has been taking place over several centuries (Steger 2003). However, the date at which the processes of globalisation began is debateable, and there are various possible departure points which we may point to as being critical junctures in this longstanding process (McCann 2008). Early developments along the road to globalisation include: the invention of double-entry book-keeping and the banking systems which emerged in the fifteenth century Italian city-states of Florence, Venice and Sienna; the invention of the joint-stock company in The Netherlands in the early seventeenth century; the growth of underwriting and insurance markets in the seventeenth century financial markets London; the advent of industrialisation in eighteenth century Britain; and the subsequent industrialisation of other parts of the world (Ferguson 2008). Each of these particular technological or institutional developments has been associated with increasing urbanisation, and the links between trade, growth and urbanisation at various stages in history have also both challenged, and in many ways also, defined the notion of a state, and therefore the concept of what it is to be a country.

As we have seen, globalisation processes in the sense of the rise of global capitalism, initially emerged between the seventeenth and early nineteenth centuries and were spearheaded by the first multinational corporations of the Dutch, British and French East and West India companies. From the early seventeenth century through to the early twentieth century, large multi-plant and multinational manufacturing organisations operated almost entirely within the confines of their own national colonial systems. However, from the nineteenth century onwards, the rise of UK and US merchant banks such as Rothschild, Barings and JP Morgan, slowly transformed capitalism from a mercantilist colonial system into a genuinely global market-based system which transcended national colonial systems (Ferguson 2008). These developments in the financial markets were then slowly also mirrored in the manufacturing economy with the rise of British and then US multinational manufacturing firms, most of which began expanding outside of their own national and colonial systems during the first few decades of the twentieth century (Jones 2005). The role which multinational enterprises (MNEs) played in earlier phases of globalisation therefore started to change in the early twentieth century from being largely within a broadly colonial type of trans-national system,

to a more genuinely international role (Jones 1996; Chandler and Mazlish 2005). Yet, this process of internationalisation was largely stalled by two world wars and the intervening global depression of the 1930s. The ratio of world trade to global GDP fell during the period 1929-1950, while the ratio of foreign assets to global GDP declined from 1914 onwards, and was not attained again until 1980 (Crafts 2004). As such, much of the twentieth century was actually characterised by long periods of anti-globalization. The result is that for much of the twentieth century, economic growth has been dominated by internal growth within individual nation-states. Even today, at a global scale, domestic private investment still dominates foreign direct investment by approximately a four to one ratio, and in developing or transition countries these ratios are often significantly higher than this. As such, it might be argued that it is domestic investment issues rather than international investment issues which are critical to understanding contemporary growth (World Bank 2005). However, the situation is far more complex than this, because in the current phase of globalisation, international investment issues play an increasingly important role in a country's domestic performance. These transformations have been made possible because the most recent phase of globalisation since the late 1970s and early 1980s has been characterised by enormous improvements in both transportations and communications technologies, dramatic increases in the openness of international capital and labour markets (Venables 2006), and the development of areas of international economic integration in which many nation-specific institutional structures are to differing degrees harmonised and merged between countries (McCann 2008, 2009a). The period since the late 1970s and early 1980s has therefore been characterised by the re-globalisation of trade and international investment (Findlay and O'Rourke 2007). Even more recently, however, since 1990 the opening up of the transition economies has brought some 260 million new workers, China some 760 million new workers, and India another 440 million new workers, into the global labour market (Venables 2006). As such, one major difference between the current phase of globalization and previous phases is simply in terms of the order of magnitude (Crafts 2004; MacGillivray 2006). On the other hand, another difference is in terms of the role played by multinational enterprises (MNEs) in the globalisation process. Multinational enterprises (MNEs) now play a critical role in the current phase of globalisation which is completely different to earlier eras of globalisation and two notable examples serve to highlight this point. Firstly, currently over half of all Chinese manufactured exports are accounted for by foreign-owned multinational firms (Scheve and Slaughter 2007), and secondly, overseas-owned multinational firms account for two-thirds of all sales of the Indian ICT sector (Scheve and Slaughter 2007). These observations suggest that the trade performance of these rapidly-emerging countries is also intrinsically related to the international investment decisions of multinational enterprises (MNEs). This is confirmed by the fact that East Asia, with China at its core, had a share of global income of 20.3% in 2005 which was less than its share of global GDP (World Bank 2007), and the reason for this discrepancy is that there are huge outflows of profits from East Asia to other parts of the world due to the enormous levels of multinational foreign direct investment (FDI) in this part of the world.

The evidence suggest that unlike in earlier eras of globalisation up to the First World War, multinational firms now play a critical role which is largely outside of the national or colonial spheres of influence of their parent countries. The reason for this is that the technological and institutional changes outlined above nowadays make it easier than ever for MNEs to invest in different countries and to engage in cross-border trade within their own corporate structures (McCann 2008, 2009a). MNEs are therefore best-placed to take advantage of the increasing global economic inter-connectedness precisely because of their specific capabilities in the arena of international investment and the cross-border coordination of commercial activities.

This point regarding the centrality of MNEs in the modern era of globalisation may initially appear to be somewhat tautological or circular, in that while MNEs are best-placed to take advantage of globalisation, at the same time, the very firms which in many ways are driving globalisation, themselves tend to be MNEs. However, the argument is rather more subtle than this and is not tautological for two reasons. Firstly, many of the institutional and technological development initially driving the current phase of globalisation were largely independent of MNEs. For example, the enormous institutional changes associated with the opening up of China, India and the former Warsaw Pact countries was not primarily related to the behaviour of MNEs per se, but to the failure of planned economic systems in relation to the whole of the capitalist system, with its associated elements including varying degrees of democracy and freedom of the press. Similarly, many of the major technological advances now driving globalisation were not all initially developed by MNEs, the most notable being the software developed by Tim Berners-Lee which gave rise to the world-wide-web, as well as the software originally developed by both Microsoft and Google, neither of which were originally MNEs. Secondly, although MNEs are spearheading many aspects of globalisation, this process itself has several aspects to it. In particular, many of the firms which were already MNEs by the late 1980s were in an ideal position to take advantage of the new globalising opportunities, and many have done. However, at the same time, the institutional and technological changes between the late 1980s and the early 1990s allowed many more firms for the first time to become MNEs, and these newly-emerging MNEs are also driving much of the process of globalisation as well as the longstanding MNEs.

There is overwhelming evidence for the importance of MNEs in the current phases of globalisation. At the end of the 1960s there were approximately only 7,000 MNEs in the global economy, and the ownership of these firms was accounted for almost entirely by just fifteen countries. In 2000 there were an estimated 63,000 MNEs in the global economy accounting for some 690,000 foreign affiliates (UNCTAD 2000); by 2002 there were an estimated 64,000 MNEs in the global economy (UNCTAD 2003), by 2004 an estimated 70,000 MNEs (UNCTAD 2005), by 2005 an estimated 77,000 MNEs with 770,000 foreign affiliates, and by 2006 an estimated 78,000 MNEs in the global economy with some 780,000 foreign affiliates (UNCTAD 2007). As such, the number of MNEs in the global economy has increased by more than eleven-fold in four decades, with the number of MNEs in the global economy increasing at a rate of approximately 1000-2000 per annum, while the number of MNE foreign affiliates has been increasing by 10,000-20,000 per annum.

Over recent decades, the levels of output, trade and employment which are associated with multinational firms have also increased much more rapidly than the growth of global trade (McCann and Mudambi 2005). During the 1980s and 1990s, both the gross product of international production and also the gross sales of foreign affiliates increased by much faster than either global GDP or global exports. The gross product from foreign affiliates in 1980 was approximately 5% of global GDP, whereas it is now of the order of 10% of global GDP. The value of sales from foreign affiliates was twice that of global exports in 1999 (UNCTAD 2000), and by 2002 the ratio had increased to two and a quarter to one (UNCTAD 2003). The 78,000 multinational firms now operating in the global economy currently account for an estimated \$4.8trillion in value-added and \$4.7trillion in exports (UNCTAD 2007). These figures reflect that fact that foreign direct investment has been growing at approximately twice the speed of world trade, which itself has grown at twice the rate of world income. The result is that foreign direct investment grew by almost six-fold between 1970 and 1999

(Bobonis and Shatz 2007), with 30-40% of US trade now accounted for by intra-firm trade flows within multinational firms (Lai and Zhu 2006). Overseas investment by multinational firms is now the largest single component of worldwide stocks of foreign investment (McCann and Mudambi 2004). In 1980 FDI inflows were only 2% of global fixed capital formation, whereas by 1999 they accounted for 14% of global fixed capital formation (UNCTAD 2000). Moreover, successful foreign direct investment (FDI) tends to generate further FDI. Much of the recent surge in FDI has been a result of multinational firms reinvesting profits from existing FDI into further foreign investments, with as much as 30% of global FDI flows are of this nature (UNCTAD 2007). Given that the scale of the global economy is currently over \$45trillion (World Bank 2007) and global exports are \$14.1trillion (UNCTAD 2007), multinational firms therefore currently account for over 10% of global GDP, approximately one third of global exports, and 12.6% of global domestic fixed capital formation (UNCTAD). Meanwhile, in terms of employment, the 780,000 foreign affiliates of MNEs also currently employ an estimated 73 million workers. This number has not only tripled since 1990 (UNCTAD 2007), but increased by some 20 million from 53 million (UNCTAD 2003) since just 2002. The total number of workers employed in foreign affiliates now represents some 3% of the global workforce (UNCTAD 2007).

The enormous growth in the number of MNEs during the current phase of globalisation has also been accompanied by major changes in both the composition and the modes of FDI. The service sector has been the fastest growing component of the global economy, increasing from 61% of the global economy in 1990 to 69% in 2005 (World Bank 2007). A reflection of this is that in 1970 services accounted for one quarter of total global FDI (UNCTAD 2004), by 1990, services accounted for almost one half of total global inward FDI (UNCTAD 2004, 2007), whereas by 2005, services accounted for almost two thirds of global inward FDI (UNCTAD 2007). In contrast, manufacturing's share of global FDI inflows has fallen from 41% in 1990 to approximately 30% (UNCTAD 2007) today, with the balance accounted for by share of global inward FDI into primary industries, which is currently little more than 6% (UNCTAD 2004). In terms of the modes of FDI, the number of greenfield FDI projects in total increased globally by 13% to some 11,800 projects in 2005, of which manufacturing accounted for 54% of these projects, the service sector accounting for 42%, and primary industries accounting for 4% (UNCTAD 2007). Yet, while greenfield investments are the popular notion of FDI, in the current phase of globalisation FDI is increasingly dominated by mergers and acquisitions (M&As). M&As now account for two-thirds of all FDI inflows (UNCTAD 2007). Mergers and acquisitions are the major mode of international market entry for all forms of service sector FDI, and by the end of the 1990s service industries accounted for over 60% of all international mergers and acquisitions (UNCTAD 2004). Therefore, much of the explanation for the increasing dominance of M&As as the principal mode of FDI entry into foreign markets is due to the faster growth of the service industry in the global economy, relative to other sectors (World Bank 2007).

Although the current phase of globalisation has witnessed a rapid growth in the number of MNEs and MNE foreign affiliates, at the global scale, however, there is also tremendous concentration of resources and outputs in a relatively small number of MNEs. Of the global total of 78,000 MNEs, the top 500 multinationals account for over 90% of the world's stock of FDI, and nearly 50% of global trade (Rugman 2005). Indeed, just the largest 100 MNEs alone account for 10% of the foreign assets of MNEs, 17% of their foreign sales, and 13% of the total employment in affiliates of MNEs (UNCTAD 2007). The largest MNEs are concentrated in industries such as finance, automobiles, pharmaceuticals,

telecommunications, electronics, power, and petroleum, and the rankings and composition of the top 100 global firms have remained relatively stable over the last decade. In terms of the critical issue of knowledge generation discussed in the previous section, the largest MNEs make an overwhelming contribution to global knowledge generation. In 2005 the 700 largest R&D expenditure MNEs were estimated to account for 46% of all global R&D expenditures, and 69% of global private sector business R&D expenditure (UNCTAD 2005). More than half of these 700 firms are in just the three sectors of IT hardware, automotive, and pharmaceuticals or biotechnology (UNCTAD 2007), and over 80% of these firms come from just five countries: US, Japan, Germany, UK and France (UNCTAD 2005). As such, the largest MNEs play a critical role in the global levels of knowledge generation, innovation and knowledge transfer.

The result of all these developments is that the global economy is increasingly driven by the scale effects of large multinational companies, and processes of technological change and the ability to exploit knowledge assets mean that both the absolute and relative economic impacts of these companies increases with their size and with globalisation.

Apart from the overwhelming role of MNEs in driving globalisation the second notable aspect of the current globalisation process is the importance of geographical proximity. Whereas for many centuries European countries had relatively very little mutual trade and investment by modern standards, today's bilateral trade and bilateral investment stocks between groups of countries such as the US, Canada and EU (Krugman 2007) or between Japan and the other East Asian economies (UNCTAD 2007), are very much greater than what would be predicted simply on the basis of the scale of the two economies. As such, in a globalising world, geographical proximity appears to be becoming ever more important for multinational cross-border investment (McCann 2008). Moreover, the economic geography of cross-border investment behaviour also demonstrates a very specific logic, in that the spatial patterns of such investments as a whole are concentrated in the 'super-regions' from which the multinational firms emerge, and also the knowledge-related investments in particular, are concentrated in certain key 'global cities' within these super-regions.

On the first point regarding the geographical concentration of multinational investment, there is a crucial link between the patterns of investment and sales by multinationals and the trade blocs and areas of integration from which these multinationals emerge. This is because multinational firms, rather than being completely global, are actually overwhelmingly regional, in the sense that their sales, investments and R&D are dominated by the same 'super-regions' or trade blocs in which their parent companies are located (Rugman 2000, 2005). For example, if we take the case of the three major global 'super-regions' of US-Canada, EU and East Asia, we find that the average same-regional sales share of the world's top 500 MNEs, is over 70% (Rugman 2005). As such, the geographical origins of global R&D reflect almost exactly the geographical origins of FDI outflows. Moreover, these trends of 'global-regionalising' (Rugman 2000, 2005), rather than simply 'globalising' investment patterns, are being further promoted by cross-border institutional changes within super-regions. The number of preferential trade agreements between countries doubled between 2000 and 2006 (UNCTAD 2007), while the number of international investment agreements (IIAs) between countries, which includes both bilateral investment treaties (BITs) and double taxation treaties (DDTs), increased from 900 in 1980 to just over 3800 in 1999 (UNCTAD 2000), and had reached almost 5,500 by 2006 (UNCTAD 2007). The most noticeable aspect of the impact of these bilateral agreements, however, is that geographical proximity is becoming increasingly important for trade and FDI (UNCTAD 2000, 2007). The

geographical patterns of principally, double taxation treaties (DTTs), and secondarily, bilateral investment treaties (BITs), closely resembles the cross-border patterns of FDI (UNCTAD 2003). The most striking case of this is that of the EU. In terms of bilateral inward investment stocks, in 1995, 17 of the top 50 pairs of countries were from Europe, whereas by 2005, this number had increased to 22 (UNCTAD 2007). In terms of the global economy, the major outcome of these institutional changes which have promoted the advantages of geographical proximity has been the increasing relative importance of the super-regions within the global economic system. By 2005, the three largest super-regions of NAFTA (\$14.72 trillion), the European Union (EU) (\$13.29 trillion), and South and East Asia (\$10.06 trillion), all had roughly comparable size economies (World Bank 2007), each accounting for 32.6%, 29.4% and 22.3% of global world income, respectively. In total these three super-regions therefore account for 84.3% of global income (World Bank 2007), and their share of global trade had increased from 70% in 1970 to 83% of global trade in 2000 (Fujita 2007a). As such, while these super-regions are increasingly dominating global output, global R&D and global trade, they are also increasingly dominated by the trading relationships of the multinational firms emanating from these super-regions. These observations therefore suggest that multinational firms play a crucial role in facilitating knowledge flows between countries, and this is particularly important for countries within the same global super-regions.

On the second point regarding the importance of particular city-regions within the trade blocs, following all of our previous arguments, the location behaviour of MNEs would also appear to be critical in explaining why particular cities are knowledge centres. Indeed there is much evidence that this is the case and this evidence comes from the economic geography literature on 'global cities' (Sassen 1994; 2002; Taylor 2004), which examines the role played by particular cities and city-regions as the principal location bases for globally connected firms. The analysis of global cities suggests that in the current phase of globalisation, the links between a city and other parts of the global economy are a key determinant of the city-region's performance. In this particular geographical literature, which draws heavily on sociological approaches, the importance and influence of a city in the global economic system is discussed in terms of the extent of its global 'connectivity' (Sassen 2002) whereby 'connectivity' refers not only to the various aspects of the knowledge and information exchanges which take place between particular locations, but also to the discretionary decision-making power to act on those knowledge exchanges. As such, global connectivity may be manifested via a variety of different mechanisms such as corporate headquarter functions, corporate decision-making linkages, human capital mobility patterns, trade linkages, transport linkages, financial linkages, and asset management roles (Taylor 2004; Sassen 2006).

For example, if we take one particular aspect of this notion of connectivity, namely that of the relationship between the location of major corporate headquarter functions and the spatial structure of global intercontinental airline linkages, recent evidence from European regions suggests that controlling for endogeneity bias, the supply of direct intercontinental flights is found to be a major determinant of corporate headquarter location decisions (Bel and Fageda 2008). While proximity to large markets and specialist suppliers is also important as expected, the size of the city has little if any explanatory power, and the size of the city relative to the country is not at all significant. As such, in the modern European context urban scale and national scale alone appear to be much less important as location determinants for key corporate knowledge functions than the structure of global airline networks (Bel and Fageda 2008).

Following the connectivity arguments, the reasons for these findings are that the spatial network structure of global airline system (Grubestic et al. 2008, 2009) determines the geographical patterns of knowledge flows embodied in particular high human capital individuals with the discretionary power to act on that knowledge. More specifically, the spatial network structure of global airline system determines the ease and frequency (McCann 2007) with which business and corporate decision-makers are able to engage in direct face-to-face contact with similar decision-makers in other locations (McCann 2008; Aguilera 2008). As such, the implication of these arguments is that global hub airport functions are critical for facilitating the types of higher-order knowledge flows which result in investment decisions being made, and greater proximity to such infrastructure should increase the likelihood of investment being forthcoming in those regions. Empirical evidence in support of these arguments comes from Button et al. (1999) and Wickham and Vecchi (2008).

This example serves to highlight the difference between simply ‘connectedness’, defined in terms of the architecture of transport and communications infrastructure, and the much broader concept of ‘connectivity’, which is a behavioural concept incorporating the ability of individuals and firms to make investment decisions at particular locations. In the international business and international management literatures the importance of these connectivity mechanisms is more or less taken for granted (Dunning 2000), yet amongst most economists and even amongst many geographers there are still many who give little credence to these issues.

Table 13 Global City Rankings

In order to provide an index of this much broader concept of connectivity it is possible to apply weighting measures and algorithms to data on these various connectivity linkage characteristics such as corporate headquarter functions, corporate decision-making linkages, human capital mobility patterns, trade linkages, transport linkages, financial linkages, and asset management roles (Taylor 2004; Taylor et al. 2008). This allows us to rank cities according to their degrees of global connectivity. Both the global-city centres of commerce rankings (Mastercard 2008) and also the rankings of global financial centres (Corporation of London 2008) are calculated in this way, and they therefore provide composite indicators of the level of global connectivity of different cities viewed from different perspectives. Not surprisingly, there is a very close correspondence between the level of global connectivity of the cities via its multinational corporations and its GDP per capita. Of the top 50 most productive cities in the world, 35-five of them are in the top fifty of the global-city centres of commerce rankings (Mastercard 2008). If we were also to include the highest productivity non-OECD cities of Tel Aviv, Taipei, Singapore and Hong Kong², then the number would rise to 39 out of the top 50 most productive cities in the world are also in the top 50 globally connected cities. In terms of the global financial centres, ignoring small tax havens³, including Hong Kong and Singapore, 30 out of the top 37 global financial centres are among the world’s 50 most productive cities. Of the ten largest cities from the newly-industrialising world which from Table 9 are all amongst the 15 largest cities in the world, 9 are amongst the world’s top 70 worldwide centres of commerce (Mastercard 2008), and 2 are also amongst the world’s top 37 global centres of finance (Mastercard 2008).

² For our purposes we can regard Singapore and Hong Kong as city-states

³ Of which there are thirteen in the top fifty world financial centres

This striking correspondence between the worldwide centres of commerce rankings (Mastercard 2008), the global financial centre rankings (Corporation of London 2008), and the world city-productivity rankings (OECD 2006), is consistent with the argument that the cities with the highest levels of global connectivity, are also largely the world's most productive cities. Moreover, these observations are also entirely consistent with the argument that the performance of these global cities is largely related to the scale of the global engagement of the companies located there, and in particular, to the globally competitive multinational firms located there. That is not to say that small and medium sized companies are not important for growth, nor does this imply that agglomeration is not important. On the contrary, small entrepreneurial start-ups are critical for innovation and growth, and agglomeration is crucial for promoting their success (Acs 2002). However, our arguments also imply that in the current era of globalisation the probability of success for small and medium sized firms will be higher in the very city-regions which are the most globally-connected. Evidence from Sweden (Andersson et al. 2009) shows that the export propensities of non-MNEs is not only higher for those firms located in larger and denser cities, but in addition is also correlated with the degree of MNE activity in that city. Urban scale is only part of the story. Global connectivity is also a critical part of the story, and one which is largely overlooked by both urban economists, institutional economists, and trade modellers.

PRELIMINARY CONCLUSION 3: *In the current era of globalisation, the performance of a city depends on the global connectivity of the city, which in turn depends on the global engagement and performance of the multinational firms located in the city. In addition, globalisation is more accurately understood as global regionalism, in which the relationship between cities, nations and multinational investment is increasingly associated with proximity and cross-border investment linkages within the same super-regions.*

5. Are Cities more Important than Countries Cities or Vice Versa?

On the basis of our historical analysis and our three preliminary conclusions it is now possible to reconsider the original question - in terms of economic performance, is it the scale effects of countries or cities which are relatively more important? As we indicated at the beginning of the paper, there are two features to the answer to this question.

The first feature of the answer to this question is that it depends on the time period we are interested in. In the late Middle Ages, prosperous cities and states were often synonymous entities. However, ever since then, the growth of urbanisation has been intrinsically associated with both increasing industrialisation and also the growth of the national market. As such, over time, city-states and micro-states gradually gave way to the emerging nation states, which spurred the early stages of globalisation via their colonial ventures, and the modern notion of a nation state is largely a nineteenth and twentieth century product of these historical processes. During the major first phase of urbanisation which lasted from around 1750 right up to the eve of WWII, global urbanisation processes were dominated by the industrialisation processes of the high income economies. The result was that by the early twentieth century, the world's leading economies contained all of the world's largest cities. As such, during this period there had emerged a fairly direct relationship between urban scale and the performance of the economy, and this relationship emerged at the same time as the modern notion of a nation state was also emerging. City agglomeration economies were the internal engine driving each of the individual national economies, whose raw material requirements were provided for by their respective colonial arenas. As such, for two centuries

both the size of the city and the country were equally important for productivity. However, the direct relationship between city size and national performance started to change in the middle of the twentieth century. In the post WWII era, urbanisation in terms of population scale has increasingly become dominated by the developing world, and this dominance has become particularly marked in the last three decades. Urban productivity, on the other hand, is now relatively much less dominated by urban scale than in previous eras. Although cities have grown in absolute scale all over the world, most of the world's most productive cities are nowadays classed as either medium or large size cities, rather than as mega-cities. The optimum size for many cities seems nowadays to be largely equivalent to the scale of the world's largest cities in the early part of the twentieth century. Moreover, the fact that this is so both in the US as well as in other OECD countries also suggests that this outcome is not necessarily related to the size of the country. Therefore, over the last sixty or seventy years there appears to have been a fundamental change in the previously fairly direct relationship between city size, city productivity and the performance of the national economy.

These observations bring us to the second feature of the answer to our original question. In the current era of globalisation the performance of a country nowadays appears to be largely related to the performance of the city-regions located within it, and the performance of the city-regions depends primarily on the scale of the global engagement of the firms located within the city-region. In a world of falling trade barriers, falling spatial transactions costs, and increasingly permeable national borders, the global connectivity of cities is critical rather than simply the scale of cities. The global connectivity of cities is what allows global companies to exploit their knowledge resources, and the global performance of the multinational firms located within the city is what drives the prosperity of the global cities. The scale of a city-region is therefore no longer critical in that larger cities are not necessarily more productive than smaller cities as they were up to the early part of the twentieth century. Rather, the scale of the global engagement and connectedness of the MNEs within the global network of cities is now critical. Cities which are too small to provide the scale of international transportation infrastructure necessary be part of these global networks will be unable to sustain global companies in the long term. Yet, infrastructure alone is not the answer, as there does appear to be a minimum threshold of approximately 1.5-2 million people in order for a city-region to achieve sufficient economies of scale to be globally competitive. For economic geographers, the reason is that a minimum population scale is required in order to maintain the diversity and variety of knowledge-inputs which is sufficient to sustain and nurture the local presence of global companies in the city-region (Dunning 2000). In contrast, city-regions which are smaller than this threshold level would be unable to act as a host location for global companies in the long run due to insufficient local knowledge resources, even if sufficient transportation infrastructure is available. Yet, while national performance depends primarily on a nation's city-regions, whose performance in turn depends on the scale of the global engagement of the multinational firms located there, the geographical investment behaviour of these firms also means that increasing economic integration between adjacent countries will continue in the long run. The increasing correspondence between the scale of mutual trade flows, mutual investment flows and geographical proximity between countries will encourage global regionalism, as groups of countries located in the same parts of the world develop stronger interrelations.

6. Final Thoughts

As we have seen, the relationship between the scale effects of countries and cities has changed over time. Early developments of the nation state were primarily driven by military

power (Pomeranz 2000; Findlay and O'Rourke 2007), in which mutual trade between adjacent nations was relatively very limited, as countries sought to develop their own independent empires. Firm and city growth was therefore a matter which was largely internal to the individual nation-empire-state. Today, the situation is reversed. Modern transportation and communications technologies and the ability to exploit knowledge assets globally mean that the performance of a country depends on its city-regions, whose performance in turn depends on the scale and performance of its multinational firms. The direction of causality is therefore increasingly reversed from previous historical eras in that the performance of global companies affects the city-region economies which in turn drive the national economy. Obviously national macroeconomic, fiscal and institutional policies are still important. However, the broad thrust of this paper suggest that the individual nation-state is in many ways becoming weaker than ever as an arbiter of its own destiny, and this weakness is magnified the smaller is the nation and the less globally connected are its cities. As such, the conclusions of Alesina and Spolaore (2005) which support fragmentation in favour of cultural heterogeneity only make sense if we assume that the fragmenting regions in question either already contain, or are in close proximity to, such global cities. Increasing independence and fragmentation without such city-regions becomes very problematic because the major effect is actually to *increase* institutional barriers to trade.

A case in point here is New Zealand, the country which in many ways is the exception which proves the rule. New Zealand is a small country with a strong sense of national identity and very flexible governance systems. It is institutionally one of the best countries in the world, with some of the lowest trade barriers, open, transparent and deregulated markets, high level of social capital, one of the world's most entrepreneurial societies, and contains the world's most entrepreneurial city (McCann 2009b). In the logic of Alesina and Spolaore (2005) it is a model society. Yet, in spite of all of these ideal institutional features, in the current era of globalisation as country New Zealand is simply too small. As we have argued in this paper, the reason is that the issue of the optimal size of a country cannot be divorced from the question of the location of the country and also the degree of connectivity of the dominant city-regions in the country. In the case of New Zealand the country is too small precisely because it is too geographically isolated, the result of which is that it is largely a cul-de-sac within the global airline system, and therefore does not contain any genuinely global city. In fact, it is unique amongst the longstanding OECD countries in that its level of global connectivity is actually falling relative to the rest of the world as multinational firms increasingly relocate higher-order operations to Australia. This is exactly in accordance with the expectations of Krugman and Venables (1995). Therefore, in direct contrast to the arguments of Alesina and Spolaore (2005), the logic of the arguments presented in this paper suggest that New Zealand ought to consider much greater political integration with Australia (McCann 2009b), in order to *increase* the size of the country, and a similar logic might apply to the case of the relationship between Iceland and the EU.

The recent global financial crisis has also revealed an additional non-geographical aspect to the issue of the optimal size of nations. Specifically, the fortunes of the global economy have depended almost entirely on the coordinated decisions implemented by the groupings of large countries, which themselves contain most of the world's global cities. The small countries are largely powerless to influence these global processes, but can be severely and adversely affected by them, as is with the case of Iceland, Ireland and Singapore. In this sense both national scale and international coordination are seen to be critical precisely because the global market transmission mechanisms mediated by international business networks and multinational firm linkages are too powerful for individual states, and particularly small

states, to control. In many ways, the current features of globalisation therefore imply that the role of the individual nation-state is diminishing and the importance of super-national institutions, or even larger countries, is increasing (Beck 2000). Whether the current global financial crisis will change any of the geographical relationships described in this paper in the long-run remains to be seen. However, unless there is a major trend towards global trade protectionism, which while being possible is unlikely (Krugman 2008), there is no reason to assume that the general arguments outlined here will be affected in any significant way. The only change may be in terms of the global rankings of cities, where some commentators (Ferguson 2008) see a major shift in favour of Asia.

Returning to our original question - in terms of economic performance, is the scale of a country more important than the scale of a city or is the scale of city more important than the scale of a country? - the arguments in this paper imply that in the current era of globalisation, Krugman's emphasis on home-market and agglomeration effects (World Bank 2009) is a far more realistic explanation of national economic performance than the smallness arguments of Alesina and Spolaore (2005). Without any serious consideration of economic geography the Alesina and Spolaore (2005) arguments are reduced to a cultural-institutional twist on various fiscal federalism debates. Meanwhile, the fact that multinational investment patterns are characterised by global-regionalism in which knowledge-related investments are concentrated in global cities, suggests that globalisation has a far greater geographical logic to it than flat-earth proponents such as Friedman (2007) assume (McCann 2008). The relationship between the nation-state, the city-region and the multinational firm is the context (Storper 2009) in which globalisation processes operate, and it is a context which has not only been seen to have evolved over long historical periods, but one which has also changed radically even in the last two decades. Our knowledge of these relationships is still very limited (OECD 2008), not least because the relationships between MNE FDI activity and tax policy is so complex (OECD 2007a) in a rapidly globalising world (OECD 2007b). As John Dunning pointed out in his last ever publication (Dunning 2009), in order to better understand current globalisation processes, a much greater integration of the behavioural analysis of international business and multinational firms (Navaretti and Venables 2004) with the insights of economic geography is required, and this will require us to rethink many of our models (McCann and Mudambi 2004, 2005).

References

- Acs, Z.J., 2002, *Innovation and the Growth of Cities*, Edward Elgar, Cheltenham
- Acs, Z.J., Bosma, N., and Sterberg, R., 2008, *The Entrepreneurial Advantage of World Cities: Evidence from Global Entrepreneurship Monitor Data*, Working Paper SCALES, University of Utrecht and Netherlands Ministry of Economic Affairs
- Aguilera, A., 2008, "Business Travel and Mobile Workers", *Transportation Research A*, 42, 1109-1116
- Alesina, A., and Spolaore, E., 2003, *The Size of Nations*, MIT Press, Cambridge MA
- Beck, U., 2000, *What is Globalization?*, Polity Press, Cambridge
- Bel, G., and Fageda, X., 2008, "Getting there Fast: Globalization, Intercontinental Flights and Location of Headquarters", *Journal of Economic Geography*, 8, 471-495
- Blum, B.B., and Goldfarb, A., 2006, "Does the Internet Defy the Law of Gravity", *Journal of International Economics*, 70.2, 384-405
- Bobonis, G.J., and Shatz, H.J., 2007, "Agglomeration, Adjustment, and State Policies in the Location of Foreign Direct Investment in the United States", *Review of Economics and Statistics*, 89.1, 30-43
- Button, K., Lall, S., Stough, R., and Trice, M., 1999, "High-Technology Employment and Hub Airports", *Journal of Air Transport Management*, 5, 53-59
- Caniels, M.C.J., *Knowledge Spillovers and Economic Growth: Regional Growth Differences across Europe*, Edward Elgar, Cheltenham
- Chandler, T., 1987, *Four Thousand Years of Urban Growth: An Historical Census*, The Edwin Mellen Press, Lampeter, UK
- Chandler, A.D., and Mazlish, B., 2005, *Leviathans: Multinational Corporations and The New Global History*, Cambridge University Press, Cambridge
- Cheshire, P.C., and Gordon, I.R., 1995, (eds.), *Territorial Competition in an Integrating Europe*, Avebury, Aldershot
- Chisholm, M., 1990, *Regions in Recession and Resurgence*, Unwin Hyman, London
- Collier, P., 2006, *The Bottom Billion: Why the Poorest Countries are Failing and What Can be Done About It*, Oxford University Press, Oxford
- Corporation of London, 2008, *The Global Financial Centres Index 3*, London
- Crafts, N., 2004, "Globalization and Economic Growth: A Historical Perspective", *The World Economy*, 27.1, 45-58
- Delamaide, D., 1994, *The New Superregions of Europe*, Dutton, Penguin Books, New York

Dunning, J.H., 2000, (ed.), *Regions, Globalisation, and the Knowledge-Based Economy*, Oxford University Press, Oxford

Dunning, J.H., 2009, "Location and the Multinational Enterprise: John Dunning's thoughts on receiving the *Journal of International Business Studies* 2008 Decade Award", *Journal of International Business Studies*, 40.1, 20-34

Easton, B., 2007, *Globalisation and the Wealth of Nations*, Auckland University Press, Auckland

Ferguson, N., 2008, *The War of the Worlds: Twentieth Century Conflict and the Descent of the West*, Allen Lane, London

Ferguson, N., 2008, *The Ascent of Money: A Financial History of the World*, Allen Lane, London

Findlay, R., and O'Rourke, 2007, *Power and Plenty: Trade, War, and the World Economy in the Second Millennium*, Princeton University Press, Princeton

Fothergill, S., Kitson, M., and Monk, S., 1985, *Urban Industrial Decline: The Causes of Urban/Rural Contrasts in Manufacturing Employment Change*, HMSO, London

Fujita, M., 2007, (ed.), *Regional Integration in South East Asia from the Viewpoint of Spatial Economics*, Palgrave, London

Fujita, M., Krugman, P., and Venables, A.J., 1999, *The Spatial Economy: Cities Regions and International Trade*, MIT Press, Cambridge MA

Grubestic. T.H., Matisziw, T.C., and Zook, M.A., 2008, "Global Airline Networks and Nodal Regions", *GeoJournal*, 71, 53-66

Grubestic. T.H., Matisziw, T.C., and Zook, M.A., 2009, "Spatio-Temporal Fluctuations in the Global Airport Hierarchies", *Journal of Transport Geography*, 17, Forthcoming

Jones, G., 1996, *The Evolution of International Business: An Introduction*, Routledge, London

Jones, G., 2005, *Multinationals and Global Capitalism: From the Nineteenth to the Twenty-First Century*, Oxford University Press, Oxford

Krugman, P., *Geography and Trade*, MIT Press, Cambridge MA

Krugman, P., 2007, "The 'New' Economic Geography: Where Are We?", in Fujita, M., *Regional Integration in East Asia from the Viewpoint of Spatial Economics*, Palgrave, Basingstoke

Krugman, P., 2008, "The Great Illusion", *New York Times*, 14.08.08

Krugman, P., and Venables, A.J., 1995, "Globalization and the Inequality of Nations", *Quarterly Journal of Economics*, 110.4, 857-880

Lai, H., and Zhu, S.C., 2006, "US Exports and Multinational Production", *Review of Economics and Statistics*, 2006, 88.3, 531-548

Le Gales, P., 2002, *European Cities*, Oxford University Press, Oxford

MacGillivray, A., 2006, *A Brief History of Globalization*, Robinson, London

Maddison, A., 2006, *The World Economy. Volume 1: A Millennial Perspective Volume 2: Historical Statistics*, OECD Organisation for Economic Cooperation and Development, Paris

Maddison, A., 2007a, *Contours of the World Economy 1-2030: Essays in Macro-Economic History*, Oxford University Press, Oxford

Maddison, A., 2007b, *Chinese Economic Performance in the Long Run Second Edition Revised and Updated 960-2030AD*, OECD Organisation for Economic Cooperation and Development, Paris

Mastercard, 2008, *Worldwide Centers of Commerce Index*, www.mastercardworldwide.com

McCann, P., 2008, "Globalization and Economic Geography: The World is Curved, Not Flat", *Cambridge Journal of Regions, Economy and Society*, 1.3, 351-370

McCann, P., 2009a, "Globalisation, Multinationals and the BRIICS Countries", in Lattimore, R., and Safadi, R., (eds.), 2009, *Globalisation and Emerging Economies*, OECD, Paris, Forthcoming

McCann, P., 2009b, "Economic Geography, Globalisation and New Zealand's Productivity Paradox", *New Zealand Economic Papers*, 43.3, Forthcoming

McCann, P., and Mudambi, R., 2004, "The Location Decision of the Multinational Enterprise: Some Theoretical and Empirical Issues", 2004, *Growth & Change*, 35.4, 491-524

McCann, P., and Mudambi, R., 2005, "Analytical Differences in the Economics of Geography: The Case of the Multinational Firm", 2005, *Environment and Planning A*, 37.10, 1857-1876

Modelski, G., 2003, *World Cities -3000 to 2000*, Faros 2000, Washington DC

Navaretti, G.B., and Venables, A.J., 2004, *Multinational Firms in the World Economy*, Princeton University Press, Princeton

OECD, 2006, *Competitive Cities in the Global Economy*, Organisation for Economic Cooperation and Development, Paris

OECD, 2007a, *International Investment Perspectives: Freedom of Investment in a Changing World*, Organisation for Economic Cooperation and Development, Paris

OECD, 2007b, *Tax Effects on Foreign Direct Investment: Recent Evidence and Policy Analysis*, OECD Tax Policy Studies No.17, Organisation for Economic Cooperation and Development, Paris

OECD, 2008, *The Internationalisation of Business R&D: Evidence, Impacts and Implications*, Organisation for Economic Cooperation and Development, Paris

Pomeranz, K., 2000, *The Great Divergence: China, Europe and the Making of the Modern World Economy*, Princeton University Press, Princeton

Porter, M.E., 1990, *The Competitive Advantage of Nations*, Free Press, New York

Rodriguez-Pose, A., 2002, *The European Union: Economy, Society, and Polity*, Oxford University Press, Oxford

Rodrik, D., 2007, *One Economics Many Recipes*, MIT Press, Cambridge MA

Rosenthal, S.S., and Strange, W.C., 2004, "Evidence on the Nature and Sources of Agglomeration Economics", in Henderson, V., and Thisse, J-F., (eds.), *Handbook of Urban and Regional Economics Vol 4*, North-Holland, Amsterdam

Rugman, A., 2000, *The End of Globalization*, Random House, New York

Rugman, A., 2005, *The Regional Multinationals*, Cambridge University Press, Cambridge

Sassen, S., 2001, *The Global City*, Princeton University Press, Princeton NJ

Sassen, S., 2002, (ed.), *Global Networks: Linked Cities*, Routledge, London

Sassen, S., 2006, *Cities in a World Economy*, Pine Forge Press, Thousand Oaks

Scheve, K.V., and Slaughter, M.J., 2007, "A New Deal for Globalization", *Foreign Affairs*, 34-47, July-August

Scott, A.J., 1998, *Regions and the World Economy*, Oxford University Press, Oxford

Scott, A.J., 2001, (ed.), *Global City-Regions: Trends, Theory, Policy*, Oxford University Press, Oxford

Simmie, J., 2004, "Innovation and Clustering in the Globalized International Economy", *Urban Studies*, 41.5-6, 1095-1112

Steger, M.B., 2003, *Globalization: A Very Short Introduction*, Oxford University Press, Oxford

Storper, M., 2009, "Regional Context and Global Trade", *Economic Geography*, 85.1, 1-20

Taylor, P.J., 2004, *World City Network: A Global Urban Analysis*, Routledge, London

Taylor, P.J., Evans, D.M., and Pain, K., Pain, 2008, "Application of the Interlocking Network Model to Mega-City Regions: Measuring Polycentricity Within and Beyond City-Regions", *Regional Studies*, 42.8, 1079-1093

UNCTAD 2000, *World Investment Report: Cross-border Mergers and Acquisitions and Development*, United Nations Conference on Trade and Development, United Nations, New York and Geneva

UNCTAD 2003, *World Investment Report: FDI Policies for Development: National and International Perspectives*, United Nations Conference on Trade and Development, United Nations, New York and Geneva

UNCTAD 2004, *World Investment Report: The Shift Toward Services*, United Nations Conference on Trade and Development, United Nations, New York and Geneva

UNCTAD 2005, *World Investment Report: Transnational Corporations and the Internationalization of R&D*, United Nations Conference on Trade and Development, United Nations, New York and Geneva

UNCTAD 2006, *World Investment Report: FDI from Developing and Transition Economies: Implications for Development*, United Nations Conference on Trade and Development, United Nations, New York and Geneva

UNCTAD 2007, *World Investment Report: Transnational Corporations, Extractive Industries and Development*, United Nations Conference on Trade and Development, United Nations, New York and Geneva

UNFPA, 2007, *State of the World's Population: Unleashing the Potential of Urban Growth*, United Nations Population Fund, New York

UN-HABITAT, 2008, *State of the World's Cities Report 2008/09*, United Nations-HABITAT Programme, Nairobi

Venables, A.J., 2006, "Shifts in Economic Geography and their Causes", *Federal Reserve Bank of Kansas City Economic Review*, 91.4, 61-85

Wickham, J., and Vecchi, A., 2008, "Local Firms and Global Reach: Business Air Travel and the Irish Software Cluster", *European Planning Studies*, 16.5, 693-710

World Bank, 2003, *Sustainable Development in a Dynamic World: Transforming Institutions, Growth, and Quality of Life*, Washington DC

World Bank, 2003, *Doing Business 2008*, Washington DC

World Bank, 2005, *World Development Report 2005: A Better Investment Climate for Everyone*, Washington DC

World Bank, 2007, *2007 World Development Indicators*, Washington DC

World Bank, 2008a, *World Trade Indicators 2008: Benchmarking Policy and Performance*, Washington DC

World Bank, 2008b, *2008 World Development Indicators*, Washington DC

World Bank, 2009, *World Development Report 2009: Reshaping Economic Geography*, Washington DC

Table 1 Urbanization and Industrialisation Indices

1500 Urban Index	1600 Urban Index	1700 Urban Index (Industry Index 1750)	1800 Urban Index (Industry Index in 1800)	1890 Urban Index (Industry Index in 1860)	(Industry Index 1913)
Belgium 21.1	Netherlands 24.3	Netherlands 33.6 (9) ⁴	Netherlands 28.8 (10)	England & Wales 61.9 (64)	USA (126)
Netherlands 15.8	Italy 15.1	Belgium 23.9 (9)	England & Wales 20.3 (16)	Scotland 50.3 (64)	UK (115)
Italy 12.4	Portugal 14.1	England & Wales 13.3 (10)	Belgium 18.9 (10)	Belgium 34.5 (28)	Belgium (88)
Spain 6.1	Spain 11.4	Italy 13.2 (8)	Scotland 17.3 (16)	Netherlands 33.4 (28)	Switzerland (87)
France 4.2	Belgium 8.8	Portugal 11.5	Italy 14.6 (8)	Germany 28.2 (15)	Germany (85)
England & Wales 3.1	France 5.9	France 9.2 (9)	Spain 11.1 (7)	Spain 26.8 (11)	Sweden (67)
Germany 3.2	England & Wales 5.8	Spain 9.0 (7)	France 8.8 (9)	France 25.9 (20)	France (59)
Portugal 3.0	Germany 4.1	Scotland 5.3 (10)	Portugal 8.7	Italy 21.2 (10)	Canada (46)
Scotland 1.6	Scotland 3.0	Germany 4.8 (8)	Ireland 7.7 (10)	Ireland 17.6 (64)	Austria (32)
Switzerland 1.5	Switzerland 2.5	Scandinavia 4.0 (7)	Germany 5.5 (8)	Switzerland 16.0 (26)	Italy (26)
Scandinavia 0.9	Scandinavia 1.4	Ireland 3.4 (10)	Scandinavia 4.6 (8)	Scandinavia 13.2 (15)	Spain (22)
Ireland 0.0	Ireland 0.0	Switzerland 3.3 (7)	Switzerland 3.7 (10)	Portugal 12.7	Russia (20)
Western Europe 5.8	Western Europe 7.9	Western Europe 9.5	Western Europe 10.2	Western Europe 29.6	
China 3.8	China 4.0	China n.a. (8)	China 3.8 (6)	China 4.4 (4)	China (3)
Japan 2.9	Japan 4.4	Japan n.a. (7)	Japan 12.3 (7)	Japan 16.0 (7)	Japan (20)

Source: Maddison (2007); Findlay and O'Rourke (2007)

Urban (Urbanisation) Index: Population living in cities of at least 10,000 inhabitants as a Percentage of Total Population (Maddison 2007 p.43)

Industry (Industrialisation) Index: Per Capita Levels of Industrialisation UK in 1900 = 100 (Findlay and O'Rourke 2007 p.323)

⁴ Industry indices for The Netherlands are those for Belgium; for England and Wales, Scotland and Ireland are those of the UK as a whole; for Scandinavia are those for Sweden.

Table 2 The World's Largest Cities in 1700

1700	City Population 000s	Country Population 000s	GDP \$000s⁵	GDP per Capita \$
Istanbul (Constantinople)	700			565 (0) (Other Asia average)
Edo (Tokyo)	688	27,000	15,390	570 (9.6)
Beijing (Peking)	650	138,000	82,800	600 (0)
London	550	8,565	10,709	1250 (28.3)
Paris	530	21,471	19,539	910 (17.2)
Ahmadabad	380	165,000	90,750	550 (0)
Osaka	380	27,000	15,390	570 (9.6)
Isfahan	350			565 (Other Asia average)
Kyoto	350	27,000	15,390	570 (9.6)
Hangzhou (Hangchow)	303	138,000	82,800	600 (0)
Amsterdam	210	1900	4047	2130 (54.2)
Naples	207	13,300	14,630	1100 (0)
Guangzhou (Canton)	200	138,000	82,800	600 (0)
Aurangabad	200	165,000	90,750	550 (0)
Lisbon	188	2000	1638	854 (10.4)
World		603,410	371,369	615 (3.7)

Sources: City Population Data (Chandler 1987); Country Population, GDP and GDP per Capita Data (Maddison (2006)

⁵ All GDP and GDP per capita \$ values are given in 1990 Geary-Khamis Dollars (Maddison 2006).

Table 3 The World's Largest Cities in 1800

1800	City Population 000s (% growth 1700-1800)	Country Population 000s 1820 (% growth 1700- 1820)	GDP \$000s 1820 (% growth 1700- 1820)	GDP per Capita \$ 1820 (% growth 1700- 1820)
Beijing (Peking)	1100 (69.2)	381,000 (276)	228,600 (276)	600 (0)
London	861 (56.5)	21,239 (247)	36,232 (338)	1706 (36.4)
Guangzhou (Canton)	800 (400)	381,000 (276)	228,600 (276)	600 (0)
Tokyo (Edo)	685 (0)	31,000 (14.8)	20,739 (34.7)	669 (17.3)
Istanbul (Constantinople)	570 (-18.5)	25,147 (West Asia)	15,269 (West Asia)	607 (West Asia) (0)
Paris	547 (3.2)	31,250 (14.6)	35,468 (182)	1135 (24.7)
Naples	430 (208)	20,176 (15.2)	22,535 (54)	1117 (15.4)
Hangzhou (Hangchow)	387(27.7)	381,000 (276)	228,600 (276)	600 (0)
Osaka	383 (0)	31,000 (14.8)	20,739 (34.7)	669 (17.3)
Kyoto	377 (108)	31,000 (14.8)	20,739 (34.7)	669 (17.3)
Moscow	248 (217)	54,765 (264) (USSR)	37,678 (232)	688 (12.6)
Soochow	243 (173)	381,000 (276)	228,600 (276)	600 (0)
Lucknow	240 (400)	209,000 (26.6)	111,417 (26.6)	533 (-3.1)
Lisbon	237 (26)	3297 (64.8)	3043 (85.7)	923 (12.7)
Vienna	231 (220)	3369 (34.7)	4104 (65.2)	1218 (18.6)
World		1,041,092 (72.5)	694,442 (86.9)	667 (8.4)

Sources: City Population Data (Chandler 1987); Country Population, GDP and GDP per Capita Data (Maddison (2006)

Table 4 The World's Largest Cities in 1850

1850	City Population 000s (% change 1800-1850)	Country Population 000s (% change 1820- 1850)	GDP \$000s (% change 1820- 1850)	GDP per Capita \$ (% change 1820-1850)
London	2320 (269)	27,181 (27.9)	63,342 (74.8)	2330 (36.5)
Beijing (Peking)	1648 (49.8)	412,000 (8.1)	247,200 (8.1)	600 (0)
Paris	1314 (240)	36,350 (16.3)	58,039 (63.6)	1597 (40.7)
Guangzhou (Canton)	875 (9.3)	412,000 (8.1)	247,200 (8.1)	600 (0)
Istanbul (Constantinople)	785 (37.7)	30,286 [1870 West Asia] (20.4)	22,468 [1870 West Asia] (47.1)	742 [1870 West Asia] (31.3)
Tokyo (Edo)	780 (13.8)	32,000 (18.5)	25,393 [1870] (22.4)	737 [1870] (10.1)
New York	645 (1023)	23,580 (236)	42,583 (426.6)	1806 (43.6)
Mumbai (Bombay)	575 (410)	235,800 (12.8)	134,882 [1870] (21.1)	533 [1870] (0)
St. Petersburg	502 (228)	73,750 [USSR] (34.6)	83,646 [1870] (52.7)	943 [1870] (37.1)
Berlin	446 (259)	33,746 (35.9)	48,178 (79.6)	1428 (32.6)
Hangchow (Hangchow)	434 (12.1)	412,000 (8.1)	247,200 (8.1)	600 (0)
Vienna	426 (84.4)	3950 (17.2)	6519 (58.8)	1650 (35.5)
Philadelphia	426 (626)	23,580 (236)	42,583 (426.6)	1806 (43.6)
Liverpool	422 (555)	27,181 (27,181 (27.9))	63,342 (74.8)	2330 (36.5)
Naples	414 (-3.8)	24,460 (21.2)	33,019 (46.5)	1350 (20.8)
World [1870]		1,270,014 (21.9)	1,101,369 (58.6)	867 (29.9)

Sources: City Population Data (Chandler 1987); Country Population, GDP and GDP per Capita Data (Maddison (2006)

Table 5 The World's Largest Cities in 1900

1900	City Population 000s (% change 1850-1900)	Country Population 000s (% change 1850- 1900)	GDP \$000s (% change 1850- 1900)	GDP per Capita \$ (% change 1850-1900)
London	6480 (279)	41,155 (51.4)	184,861 (291)	4492 (92.7)
New York	4242 (657)	76,391 (323)	312,499 (734)	4091 (226)
Paris	3330 (253)	40,598 (11.7)	116,747 (201)	2876 (80)
Berlin	2707 (606)	54,388 (61.2)	162,335 (336)	2985 (209)
Chicago	1717 [1858- 1900] (1717)	76,391 (323)	312,499 (734)	4091 (226)
Vienna	1698 (398)	5973 (51.2)	17,213 (264)	2882 (74.6)
Tokyo	1497 (91.9)	44,103 (37.8)	52,020 (204)	1180 (60.1)
St. Petersburg	1439 (286)	124,500 [USSR] (68.8)	154,049 (84)	1237 (31.1))
Manchester	1435 (348)	41,155 (51.4)	184,861 (291)	4492 (92.7)
Philadelphia	1418 (332)	76,391 (323)	312,499 (734)	4091 (226)
Birmingham	1248 (424)	41,155 (51.4)	184,861 (291)	4492 (92.7)
Moscow	1120 (300)	124,500 [USSR] (68.8)	154,049 (84)	1237 (31.1)
Beijing (Peking)	1100 (-33.2)	400,000 (-3.0)	218,074 (-11.8)	545 (-9.2)
Kolkata (Calcutta)	1085 (262)	284,000 (20.4)	170,466 (26.4)	599 (12.4)
Boston	1075 (514)	76,391 (323)	312,499 (734)	4091 (226)
World [1913]		1,791,020 (41.0)	2,704,782 (246)	1510 (74.2)

Sources: City Population Data (Chandler 1987); Country Population, GDP and GDP per Capita Data (Maddison (2006)

Table 6 The World's Largest Cities in 1925

1925	City Population 000s (% change 1900-1925)	Country Population 000s (% change 1900- 1925)	GDP \$000s (% change 1900- 1925)	GDP per Capita \$ (% change 1900-1925)
New York	7774 (83.2)	116,284 (52.2)	730,545 (233)	6282 (53.5)
London	7742 (19.5)	45,059 (9.48)	231,806 (25.4)	5144 (14.5)
Tokyo	5300 (354)	59,522 (86.0)	112,209 (216)	1885 (59.7)
Paris	4800 (44.1)	40,610 (11.7)	169,197 (44.9)	4166 (44.8)
Berlin	4013 (48.2)	63,166 (87.2)	223,082 (37.4)	3532 (18.3)
Chicago	3564 (208)	116,284 (52.2)	730,545 (233)	6282 (53.5)
Ruhr	3400 (443)	63,166 (87.2)	223,082 (37.4)	3532 (18.3)
Buenos Aires	2410 (299)	10,358 (221)	40,597 (233)	3919 (53.5)
Osaka	2219 (228)	59,522 (86.0)	112,209 (314)	1885 (18.3)
Philadelphia	2085 (47)	116,284 (52.2)	730,545 (216)	6282 (53.5)
Vienna	1865 (9.8)	6582 (10.2)	22,161 (233)	3367 (204)
Boston	1764 (64.1)	116,284 (52.2)	730,545 (28.7)	6282 (53.5)
Moscow	1764 (57.5)	158,983 (27.2)(USSR)	231,886 [1928] (50.5)	1370 [1928] (10.)
Manchester	1725 (20.2)	45,05 (9.48)9	231,806 (25.4)	5144 (14.5)
Birmingham	1700 (36.2)	45,059 (9.48)	231,806 (25.4)	5144 (14.5)

Sources: City Population Data (Chandler 1987); Country Population, GDP and GDP per Capita Data (Maddison (2006)

Table 7 The World's Largest Cities in 1950

1950	City Population 000s (% change 1925-1950)	Country Population 000s (% change 1925- 1950)	GDP \$000s (% change 1925- 1950)	GDP per Capita \$ (% change 1925-1950)
New York	12,463 (60.3)	152,271 (30.9)	1,455,916 (99.3)	9561 (52.2)
London	8860 (14.4)	50,127 (11.2)	347,850 (50.1)	6939(34.8)
Tokyo	7000 (32.1)	83,805 (40.8)	160,966 (43.4)	1921 (1.9)
Paris	5900 (22.9)	41,829 (3.0)	220,492 (30.3)	5271 (26.5)
Shanghai	5407 (360)	546,815 (13.8)	239,903 (10.0)	439 (-21.9)
Moscow	5100 (289)	179,571 {USSR] (12.9	510,243 (220)	2841 (207)
Buenos Aires	5000 (207)	17,150 (65.6)	85,524 (210)	4987 (27.2)
Chicago	4906 (37.6)	152,271 (30.9)	1,455,916 (99.3)	9561 (52.2)
Ruhr	4900 (44.1)	68,375 (8.2)	265,354 (18.9)	3881 (9.9)
Kolkata (Calcutta)	4800 (345)	359,000 (12.2)	222,222 (30.3)	619 (-11.4)
Los Angeles	3986 (347)	152,271 (30.9)	1,455,916 (99.3)	9561 (52.2)
Berlin	3707 (-7.7)	68,375 (8.2)	265,354 (18.9)	3881 (9.9)
Osaka	3341 (50.6)	83,805 (40.8)	160,966 (43.4)	1921 (1.9)
Philadelphia	2900 (39.1)	152,271 (30.9)	1,455,916 (99.3)	9561 (52.2)
Mexico City	2872 (372)	28,485 (53.3)	67,368 (223)	2365 (73.1)
World (1950)		2,524,324	5,329,719	2111 (40) (1913-1950)

Sources: City Population Data (Chandler 1987); Country Population, GDP and GDP per Capita Data (Maddison (2006)

Table 8 The World's Largest Cities in 1975

1975	City Population 000s (% change 1950-1975)	Country Population 000s (% change 1950- 1975)	GDP \$000s (% change 1950- 1975)	GDP per Capita \$ (% change 1950-1975)
Tokyo	23,000 (328)	111,573 (33.1)	1,265,661 (786)	11,344 (590)
New York	17,150 (37.6)	215,973 (41.8)	3,516,825 (241)	16,284 (70.3)
Osaka	15,500 (464)	111,573 (33.1)	1,265,661 (786)	11,344 (590)
Mexico City	11,339 (395)	60,828 (213)	312, 998 (465)	5146 (216)
Moscow	10,700 (209)	254,519 [USSR] (41.7)	1,561,399 (306)	6135 (216)
London	10,500 (18.5)	56,215 (12.1)	665,984 (91.4)	11,847 (225)
Sao Paulo	10,041 (451)	108,824 (204)	455,918 (510)	4190 (257)
Paris	9400 (59.3)	52,758 (26.1)	699,106 (317)	13,773 (261)
Los Angeles	8960 (225)	215,973 (41.8)	3,516,825 (241)	16,284 (70.3)
Buenos Aires	8498 (69.9)	26,082 (52.1)	211,850 (247)	8122 (62.8)
Cairo	8400 (305)	36,952 (74.3)	52,501 (272)	1421 (56.1)
Rio de Janeiro	8328 (290)	108,824 (204)	455,918 (510)	4190 (251)
Shanghai	8000 (47.9)	916,395 (67.6)	800,876 (339)	874 (99.1)
Kolkata (Calcutta)	7875 (64.0)	607,000 (69.1)	544,683 (245)	897 (44.9)
Seoul	7500 (483)	35,281 (69.2)	111,548 (695)	3162 (411)
World		4,065,408	16,644,898	4094 (93.9)

Sources: City Population Data (Chandler 1987); Country Population, GDP and GDP per Capita Data (Maddison (2006)

Table 9 The World's Largest Cities in 2000

2000	City Population⁶ 000s (% change 1975-2000)	Country Population 000s (% change 1975- 2000)	GDP \$000s (% change 1975- 2000)	GDP per Capita \$ (% change 1975-2000)
Tokyo	29,896 (30.0)	126,737 (13.6)	2,589,320 (204)	20,431 (80.0)
New York	24,719 (44.1)	270,561 (25.2)	7,394,598 (210)	27,331 (67.8)
Seoul	20,674 (275)	46,898 (30.7)	624,582 (559)	13,317 (421)
Mexico City	19,081 (68.3)	98,553 (62.0)	655,910 (209)	6665 (29.5)
Sao Paulo	17,396 (73.2)	169,897 (56.0)	926,918 (203)	5459 (30.2)
Manila	16,740 (310)	79,376 (78.5)	181,886 (201)	2291 (12.9)
Los Angeles	15,807 (76.4)	270,561 (25.2)	7,394,598 (210)	27,331 (67.8)
Mumbai	15,769 (223)	991,691 (63.3)	1,803,172 (3.31)	1818 (202)
Djakarta	15,086 (284)	207,429 (58.9)	628,753 (3.2)	3031 (201)
Osaka	15,039 (-3.0)	126,737 (13.6)	2,589,320 (204)	20,431 (80.0)
Delhi	13,592 (309)	991,691 (63.3)	1,803,172 (3.31)	1818 (202)
Kolkata	12,619 (60.2)	991,691 (63.3)	1,803,172 (3.31)	1818 (202)
Buenos Aires	12,297 (44.7)	36,235 (39.2)	334,314 (57.8)	9219 (13.2)
Shanghai	11,960 (49.5)	1,252,704 (36.6)	4,082,513 (509)	3259 (372)
Cairo	11,633 (38.4)	66,050 (78.7)	140,546 (339)	2128 (89.8)
World [1998]		5,907,680 (45.3)	33,725,631 (202)	5709 (39.4)

Sources: City Population Data (Chandler 1987; Le Gales 2002); Country Population, GDP and GDP per Capita Data (Maddison (2006)

⁶ The figures reported here are for conurbations, and come from GEOPOLIS database, rather than just city administrative boundaries. Therefore, New York City (five boroughs) has only 7.549m, the greater New York area has 18.7m (OECD 2006), and the total New York conurbation (including Philadelphia) has over 24million inhabitants. Similarly, depending on the source used and methods of defining urban areas, London city has only 7.4m inhabitants (OECD 2006) but the London conurbation has a population of 8.5 m according to the *World Urbanization Prospects* (2008) [<http://esa.un.org/unup/p2k0data.asp>], a population of over 9.66m according to GEOPOLIS, or a population of 11.22m according to the *World Gazetteer* (www.world-gazetteer.com). See Venables (2007).

Table 10 The World's Most Productive Cities in 2002-2004

US Cities	City Pop⁷ Millions	City Per Capita Productivity (US \$000 PPP)	Non US OECD Cities	City Pop Millions	City Per Capita Productivity (US \$ PPP)
San Francisco	4.2	62.3	London	7.4	46.2
Washington DC	5.1	61.6	Paris	11.2	42.7
Boston	4.4	58.0	Dublin	1.6	38.9
Seattle	3.2	54.4	Vienna	2.2	37.6
Minneapolis	3.1	53.0	Stockholm	2.2	36.7
New York	18.7	52.8	Stuttgart	2.7	36.4
Denver	2.3	50.8	Milan	7.4	35.6
Philadelphia	5.8	50.5	Lyon	1.6	35.2
Dallas	5.7	50.1	Munich	6.1	35.2
Atlanta	4.7	47.8	Oslo	1.7	35.0
Houston	5.2	47.4	Sydney	4.2	35.0
San Diego	2.9	46.8	Brussels	3.8	35.0
Chicago	9.4	45.6	Toronto	4.7	34.9
Los Angeles	12.9	45.3	Helsinki	1.8	34.0
Detroit	4.5	44.0	Frankfurt	5.6	33.6

Sources: OECD (2007 pp.38-40); World Bank (2008)⁸

⁷ The city population figures here are from the OECD metropolitan database (OECD 2007) and differ slightly from the urban definitions employed in Table 8.

⁸ Combining the OECD (2007) metropolitan productivity data with PPP national productivity data at current prices (World Bank 2008) would also rank Singapore as the 30th highest productive city in the world, below Stuttgart and above Milan, and Hong Kong as the 48th highest productivity city in the world, below Auckland and above Hamburg.

Table 11 The Highest Productivity Cities in the OECD

US Cities	City Population⁹ Million	Relative Productivity	Non US OECD Cities	City Population Million	Relative Productivity
San Francisco	4.2	1.72	London	7.4	1.59
Washington	5.1	1.70	Paris	11.2	1.53
Boston	4.4	1.60	Dublin	1.6	1.18
Seattle	3.2	1.50	Vienna	2.2	1.27
Minneapolis	3.1	1.46	Stockholm	2.2	1.29
New York	18.7	1.45	Stuttgart	2.7	1.34
Denver	2.3	1.40	Milan	7.4	1.29
Philadelphia	5.8	1.39	Lyon	1.6	1.26
Dallas	5.7	1.38	Munich	6.1	1.30
Atlanta	4.7	1.32	Oslo	1.7	0.95
Houston	5.2	1.31	Sydney	4.2	1.07
San Diego	2.9	1.29	Brussels	3.8	1.19
Chicago	9.4	1.26	Toronto	4.7	1.08
Los Angeles	12.9	1.25	Helsinki	1.8	1.19
Detroit	4.5	1.21	Frankfurt	5.6	1.24

Sources: Calculations based on OECD (2007 pp.38-40); OECD (2008); World Bank (2008)

⁹ The figures here are from the OECD metropolitan database (OECD 2007 pp.38-40) and differ slightly from the urban definitions employed in Table 8.

Table 12 The Highest Non-US Relative Productivity Cities in the OECD

Non US OECD Cities Excluding Former Transition Economies, Mexico and Turkey	City Population Millions	Relative Productivity	Non US OECD Cities (All OECD countries)	City Population Millions	Relative Productivity
London	7.4	1.59	Warsaw	3.0	1.99
Paris	11.2	1.53	Monterrey	3.2	1.98
Lisbon	2.7	1.39	Istanbul	11.4	1.60
Auckland	1.2	1.34	London	7.4	1.59
Stuttgart	2.7	1.34	Budapest	2.8	1.59
Milan	7.4	1.31	Paris	11.2	1.53
Munich	6.1	1.30	Prague	2.3	1.51
Stockholm	2.2	1.29	Mexico City	18.4	1.49
Vienna	2.2	1.27	Izmir	3.4	1.46
Lyon	1.6	1.26	Ankara	4.0	1.41
Frankfurt	5.6	1.24	Guadalajara	3.5	1.39
Madrid	5.6	1.24	Lisbon	2.7	1.39
Rome	3.7	1.21	Puebla	2.1	1.36
Brussels	3.8	1.19	Auckland	1.2	1.34
Helsinki	1.8	1.19	Stuttgart	2.7	1.34

Sources: Calculations based on OECD (2007 pp.38-40); OECD (2008); World Bank (2008)

Table 13 Global City Rankings

Global City	2004 Pop 000s ¹⁰	2008 Global City Index	Global Financial Centre	Pop 000s	2008 Global Financial Centre Index
London	7400	79.17	London	7400	795
New York	18,700	72.77	New York	18,700	786
Tokyo	34,200	66.60	Hong Kong	7000	695
Singapore	4000	66.16	Singapore	4000	675
Chicago	9400	65.24	Zurich	2500	665
Hong Kong	7000	63.94	Frankfurt	5600	642
Paris	11,200	63.87	Geneva	450	640
Frankfurt	5600	62.34	Tokyo	34,200	628
Seoul	23,500	61.83	Sydney	4200	621
Amsterdam	7500 ¹¹	60.06	Boston	4400	618
Madrid	5600	58.34	San Francisco	4200	614
Sydney	4200	58.33	Dublin	1600	613
Toronto	4700	58.16	Paris	11,200	612
Copenhagen	2400	57.99	Toronto	4700	610
Zurich	2500	56.86	Washington	5100	597

Sources: Global City Index (Mastercard 2008); Global Financial Centre Index (Corporation of London 2008); City Populations (OECD 2007); World Bank 2008)¹²

¹⁰ Population data comes from the OECD metropolitan database (OECD 2007 pp.38-40). The data for Amsterdam is that of the Randstad, and the data for London is only the area within the London city boundaries and does not include the whole London commuting area (OECD 2007).

¹¹ Randstad

¹² Combining the OECD (2007) metropolitan productivity data with PPP national productivity data at current prices (World Bank (2008) would also rank Singapore as the 30th highest productive city in the world, below Stuttgart and above Milan, and Hong Kong as the 48th highest productivity city in the world, below Auckland and above Hamburg.