

Cities and National Economic Growth: A Reappraisal

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Summary. The idea that cities are sources of economic growth, generally associated with Jane Jacobs, has gained ground in the scholarly literature in recent years. This essay proposes a review of the arguments for and against the Jacobs hypothesis. Much of the debate centres on the existence of dynamic agglomeration economies. It is difficult, it is argued, to rigorously test the relationship between agglomeration and economic growth. Part of the problem stems from the difficulty of distinguishing factors that allow cities to capture a greater share of national economic growth from those that allow cities to add to national economic growth. It is argued that the socioeconomic processes that explain economic growth operate primarily at the national/societal level and not at the city level.

My purpose is to show that cities are also primary economic organs (Jacobs, 1969, p. 6).

Development is a process of continuously improving in a context that makes injecting improvisations . . . feasible. Cities . . . create that context. Nothing else does (Jacobs, 1984, p. 155).

The city is not only the place where growth occurs . . . , but also is the engine of growth itself (Duranton, 2000, pp. 291–292).

Large cities have been and will continue to be an important source of economic growth (Quigley, 1998, p. 137).

Agglomeration can be considered the territorial counterpart of economic growth (Fujita and Thisse, 2002, p. 389).

The idea that cities are sources of economic growth has gained ground in recent years.

The pioneer of this viewpoint is, without a doubt, Jane Jacobs (1969, 1984). As the above quotes suggest, she is no longer alone. A growing number of scholars are moving in the same direction, fuelled in large part by the insights of what some call the ‘new economic geography’ (with its emphasis on agglomeration economies) and ‘new growth theory’¹ (with its emphasis on increasing returns). Not unsurprisingly, the idea has found favour with advocacy groups (mayors’ associations, city federations, etc.) and others involved in urban affairs. The UNCHS (2004) website calls cities “engines of national prosperity”. The prospectus for the Development Planning Unit’s graduate programme (University College, London) states that “(cities) are recognised as engines of economic development and growth for regions and countries” (Bartlett, 2004).

This article focuses on the link between cities and *national* economic growth, the

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reason for which will become clearer as I proceed. In the scholarly literature, the relationship between *cities* (a concept I shall define more precisely shortly) and *national economic growth* is often implicit. The term *economic growth* (also to be defined shortly) is often used without an adjective. As I shall attempt to explain further on, cities can only be said to be contributing to economic growth (generically defined) if they contribute to national economic growth. I propose here a review of the state of our knowledge on the link between cities and economic growth. I shall not undertake a technical critique of the numerous econometric studies in the literature (of which Glaeser and Henderson are among the most prolific contributors: see references). But rather, I propose, for lack of a better term, to concentrate on the big picture via a reappraisal of the role of cities in economic development. As I shall attempt to show, the evidence that cities *cause* economic growth is inconclusive. My bias is historical, focusing on the relationship between the presence and/or emergence of cities and long-term economic growth.

Restating the Question. Cities: A Cause or Product of Economic Growth?

Following Kuznets (1968, p. 6), economic growth is defined as a long-term sustained increase in real per capita incomes or product. The positive relationship between urbanisation (and to some extent, city size) and per capita incomes is irrefutable, as we shall see. However, the link with *growth* in incomes is less clear. The direction of causation lies at the heart of the debate. Are *cities* active agents in the economic growth process as the quote from Jacobs (1969) suggests (does the emergence of urban agglomerations *cause* incomes to rise in the long run?) or, rather, are they an *outcome* of national economic growth, the result of an adjustment process similar to other structural shifts? The evidence suggests, I shall argue, that the latter is more likely.

Much of the ambiguity surrounding the relationship between cities and economic

growth stems from the sometimes-unclear use of the word *city*, which can have both a generic and a political/administrative meaning. Unless stated otherwise, I shall employ the word 'city' in its generic meaning: an urban agglomeration or urban area, irrespective of political boundaries.²

I begin this overview with the positive links between cities and economic development. I then turn to the question of why the positive relationship between cities and GDP (or income) per capita, although clearly established, does not necessarily allow one to infer that cities (agglomeration) cause economic growth.

The Positive Link between Cities and Economic Growth

The evidence of a positive link between cities (urban areas) and economic development is overwhelming. An abundant literature has accumulated demonstrating the positive relationship between urban areas (specifically, their share of national populations) and levels of national economic development. Numerous studies have, time and again, confirmed the positive relationship between per capita income and urbanisation levels (Fay and Opal, 2000; Jones and Koné, 1996; Lemelin and Polèse, 1995; Tolley and Thomas, 1987). Other studies have repeatedly demonstrated the disproportionate contribution of urban areas to national income and product (Ciccolla, 1999; Prud'homme, 1997; Petersen, 1991; Weiss, 2001; World Bank, 1991). Others again have demonstrated the positive link between productivity and the agglomeration of economic activity in cities (Ciccone and Hall, 1996; Glaeser, 1994, 1998; Henderson, 1988, 2003; Krugman, 1991; Rauch, 1993; Quigley, 1998).

The evidence is summarised in Figures 1 and 2, and Table 1. Thus, greater São Paulo accounted for 8.6 per cent of Brazil's population, but generated 36.1 per cent of national GDP. For all nations, the contribution of urban areas to GDP or income³ is greater than their share of the national population (all ratios are above 1.0: last column in Table 1). And

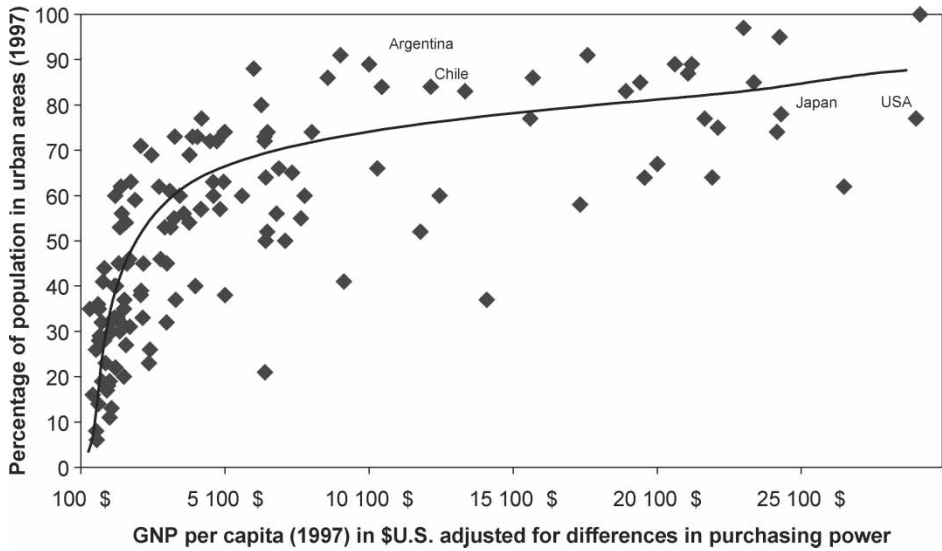


Figure 1. GNP per capita and urbanisation levels. *Key:* Each dot represents a nation.

in all cases the contribution of larger urban centres is proportionally greater. Thus, the ratio for greater New York is higher than that for all US cities. In sum, cities, especially bigger cities, mean higher productivity and higher per capita incomes. The results in Table 1 hold for nations with different economic systems and histories (note the results for Russia and China) and thus cannot simply be explained by what some would

call the unequal development patterns of (capitalist) free market economies. Manifestly, there is something in the very nature of urban agglomerations that contributes positively to higher incomes.

Agglomeration Economies

To explain the higher productivity of (non-agricultural) firms in urban settings, we must

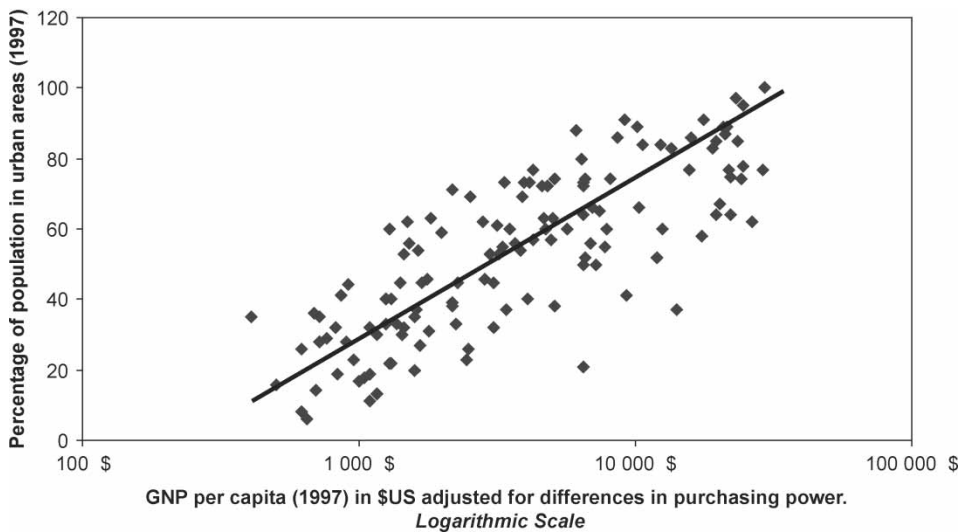


Figure 2. GNP per capita (logarithmic scale) and urbanisation levels. *Key:* Each dot represents a nation. *Source:* World Bank (1999).

Table 1. The economic importance of cities

Urban area (Agglomeration)	Nation	Percentage share of national total		
		Population (A)	GNP or Income (B)	Ratio B/A
São Paulo	Brazil	8.6	36.1	4.20
Buenos Aires	Argentina	35.0	53.0	1.51
Santiago de Chile	Chile	35.6	47.4	1.33
Lima	Peru	28.1	43.1	1.53
Guayaquil	Ecuador	13.1	30.1	2.30
Mexico	Mexico	14.2	33.6	2.37
All cities	Mexico	60.1	79.7	1.33
San Salvador	El Salvador	25.8	44.1	1.71
Port au Prince	Haiti	15.1	38.7	2.56
All cities	Haiti	24.2	57.6	2.38
Casablanca	Morocco	12.1	25.1	2.07
Abidjan	Ivory Coast	18.1	33.1	1.83
Nairobi	Kenya	5.2	20.1	3.87
All cities	Kenya	11.9	30.3	2.55
Karachi	Pakistan	6.1	16.1	2.64
All cities	India	19.9	38.9	1.95
Shanghai	China	1.2	12.5	10.42
Manila	Philippines	12.1	25.1	2.07
Bangkok	Thailand	10.9	37.4	3.43
All cities	Turkey	47.1	70.1	1.49
Budapest	Hungary	18.0	35.0	1.98
Moscow	Russia	5.8	10.9	1.88
New York (CMSA)	US	7.5	10.1	1.34
Chicago (CMSA)	US	3.2	3.8	1.17
All MSA's	US	80.0	85.0	1.06
Toronto	Canada	14.2	17.3	1.22
Montreal	Canada	11.4	11.5	1.01

Note: Results are for years within the range 1975–2001, depending on the source.

Sources: Ciccolla (1999), de Mattos, (1999), *The Economist* (1997), PRISMA (1996), Prud'homme (1997), Weiss (2001), World Bank (1991) as well as the author's calculations based on national accounts and census data, specifically for the US and Canada.

turn to the concept of 'agglomeration economies', which will be familiar to most readers. The concept goes back to early writings on industrial location (Isard, 1956; Hoover, 1948; Weber, 1909) and is now a standard element in urban and regional economics. In simple terms, agglomeration economies refer to the productivity gains derived from the geographical clustering of firms and people. For a particular firm, the gains derived from being located in an urban area can have various sources: scale economies due to greater market size (within close range); lower infrastructure costs (spread over a greater number of users); lower information and transaction

costs because of the greater range and facility of face-to-face contacts; more flexible and rapid input relationships, given the diversity (and proximity) of potential suppliers; lower training and recruitment costs due to the presence of a large and diversified labour pool.

Agglomeration economies are very heterogeneous and their precise mix and importance will be different for different firms and at different points in time. Duranton and Puga (2001) have shown that firms will be drawn to different city sizes at different points in the product life-cycle. For firms in different industrial sectors, the trade-off between the gains and the costs of agglomeration

(primarily congestion, land and labour costs) will in part determine the size of the urban area they locate in, which in turn helps to explain why not all industry will concentrate in one single (huge) agglomeration (Henderson, 1997). A distinction is traditionally made in the literature between industry-specific 'localisation' economies, also called MAR (Marshall, Arrow, Romer) scale economies, on the one hand, and more broadly based 'urbanisation' economies, on the other. The first applies to the productivity gains derived from the clustering of similar industries, while the second refers to the gains derived from location in a diversified (necessarily larger) urban area.

Evidence in favour of both types of agglomeration economies is not lacking: the work of Henderson (1997, 2003) focuses on the former, while the positive effects of urban diversity and size have been the focus of work by Duranton and Puga (2002), Glaeser (1994, 1998) and Quigley (1998). Much of the theoretical literature in the 'new economic geography' focuses on a better understanding of the microeconomic foundations of agglomeration economies (see for, example, Fujita and Thisse, 2002; Glaeser, 2000; Huriot and Thisse, 2000). Rosenthal and Strange (2001) identify three fundamentals: labour market pooling, input sharing and knowledge spillovers, to which I shall return. The mix may vary over time and over industries, but there is no lack of evidence that such economies do indeed exist.

There is no reason to believe that agglomeration economies are less important today than they were in the past. Indeed, the evidence suggests that the weight of agglomeration economies (especially urbanisation economies) is growing, sparking ever-greater geographical concentrations of economic activity, a result in part of the shift in national economic structures towards knowledge-intensive industries (Duranton and Puga, 2002; Gaspar and Glaeser, 1998; Glaeser, 1998; Quigley, 1998; Polèse and Shearmur, 2004). Glaeser (1994, 2000) argues that cities facilitate 'knowledge spillovers'; that is, the positive externalities that arise from

the coming together of (educated) people who exchange and share ideas, often via informal networks. The concept of knowledge spillovers, although its roots go back in time, is at the heart of much of the new work on agglomeration economies. Many readers will be aware of the (now) famous quote from Alfred Marshall, who may be considered the father of the notion of agglomeration economies

The mysteries of the trade become no mysteries; but are, as it were, in the air (A. Marshall, 1890; quoted in Glaeser, 1994, p. 9).

Going back in history, agglomeration may be viewed as a necessary corollary of the development of functioning market economies. Cities allow goods, ideas and people to come together for purposes of exchange and production, in turn allowing society to reap the gains from trade and specialisation. It is difficult to imagine a modern market economy without markets (i.e. market *places*). Indeed, it can be argued that this is the (economic) essence of the city. Most cities and towns first arose as market centres, centres of distribution and finance, well before the advent of the modern industrial era.

Dynamic Agglomeration Economies and Endogenous Growth

Agglomeration economies, while explaining higher productivity (in cities) at a given moment in time, do not necessarily explain *growth*. The idea that agglomeration might also stimulate economic growth can be said to have its roots, at least in part, in two intellectual traditions: a well-established historical tradition of urban research and a more recent theoretical current, largely fuelled by urban economists, which focuses on the possible dynamic effects of knowledge spillovers.

A long tradition of scholarship exists that examines the role of cities in history as fountainheads of civilisation (however defined), social transformation and ultimately economic growth, among which the classic works of Pirenne (1925) on the medieval city and,

nearer to us, Bairoch (1988) and Hall (1999). Jane Jacobs (1969, 1984) in part draws on this research tradition in support of her argument that cities, historically, initiate economic growth. To quote her again (Jacobs, 1984, p. 151) “improvements in rural productivity ... cannot be feasible without prior city development”. It has become common practice for urban economists to refer to a new subset of agglomeration economies as ‘Jacobs economies’ (see—for example, Henderson, 2003, p. 1); that is, *dynamic agglomeration economies*, which spring from the cross-fertilisation of ideas and the diversity that come with city life. Jacobs (1969, 1984) argues that cities are *the* essential medium by which ideas circulate and new ideas spring forth: interaction between people in cities promotes innovation, continually pushing up productivity. Understandably, Jacobs places great importance on the design and planning of cities to make them people-friendly, so that they may fulfil their role as places where (productive) innovations originate and are applied.

The evidence that agglomeration and city life (beyond the village level) produce behavioural and cultural change is strong, the subject of urban sociology and anthropology: changing family structures, falling birth rates, lower religious practice, etc. The old German adage, harking back to medieval times, “*Stadtluft macht Frei*” (City air makes you free) nicely captures the perceived liberating influence of city life. It is difficult to argue with the observation that cities, since the beginning of recorded history, have been centres of artistic creation, drawing in the most talented and creative minds of their times: Athens, Venice, Vienna and Paris spring to mind.

Closer to our epoch, an abundant literature has accumulated demonstrating the sensitivity of innovation and technologically advanced activities to agglomeration (Audretsch and Feldman, 1996; Braczyk *et al.*, 1998; Hall, 2000; Maillat, 1998). There is also growing evidence of knowledge spillovers and, as a corollary, that innovation is sensitive to agglomeration (Glaeser *et al.*, 1992, 1995; Duranton and Puga, 2002). Knowledge spillovers are, almost by definition, a central

element in Jacobs economies (or dynamic urbanisation economies). In both cases, the emphasis is on the innovation and productivity-enhancing effects (externalities) of agglomeration and city life. Quoting Glaeser *et al.*

Knowledge spillovers are particularly effective in cities where communication between people is most extensive ... If proximity facilitates the transmission of ideas, then we should expect knowledge spillovers to be ... important (Glaeser *et al.*, 1992, pp. 1126–1127).

This echoes Jacobs’ emphasis on diverse and people-friendly cities.

Once we posit the existence of knowledge spillovers, the obvious inference is that agglomeration (especially the agglomeration of talented and educated individuals) should have dynamic effects. Several studies, in addition to those mentioned, have confirmed the positive relationship between the initial stock of human capital and subsequent city growth (in population, employment or income): Glaeser *et al.*, 1995; Moody and Wang, 1997; Simon, 1998; Simon and Nardinelli, 1996. It is at this juncture that (the new) economic geography and endogenous growth theory meet.⁴ The dynamic effects of human capital accumulation and associated knowledge spillovers lie at the heart of endogenous growth theory (Cortright, 2001; Easterly, 2002; Lucas, 1988, 1990, 2001; Romer, 1986, 1994). Endogenous growth theory’s major insight (and it is indeed an important idea) is that the law of diminishing returns does not necessarily hold for human capital, precisely because of the existence of knowledge spillovers. The marginal productivity of human capital does not fall with the addition of more units. Quite the contrary: the productivity of a skilled worker increases if he (or she) is in an environment where he (or she) can interact with other educated workers. Being near other talented individuals increases individual productivity. And where else can this occur but in cities? In other words, the continuing agglomeration of human capital produces increasing returns.

As the name implies, the principle of increasing returns, means that returns to capital (specifically, human capital) increase as the stock of capital increases. Returns to capital are high where capital is already abundant (Easterly, 2002, p. 150). This is consistent with the evidence (recall Table 1) and goes a long way towards explaining why the talented and educated continue to flock to large cities. To quote Lucas (1988, p. 39) "What can people be paying Manhattan or downtown Chicago rents for, if not for being near other people?". This intellectual fusion of endogenous growth theory and economic geography has given rise to a set of models that explicitly posit (dynamic) growth effects for agglomeration, as illustrated by the quotes from Duranton (2000) and Fujita and Thisse (2002) at the outset of this essay (see also Pavilos and Wang, 1996). Such models, in sum, take it as a given (a postulate) that agglomeration causes growth.

Agglomeration and Economic Growth: A Difficult Relationship to Test

The evidence, we have seen, that agglomeration and thus also urbanisation, at least beyond some minimum threshold, are necessary concomitants of social change and economic growth is strong, as is the evidence that the accumulation of human capital stimulates growth. But, is this sufficient to conclude that agglomeration *per se* produces economic growth? The arguments in favour of a direct causal link between cities (agglomeration) and economic growth are intellectually appealing. But, the empirical testing of dynamic agglomeration economies remains problematic. Henderson (2003), looking at manufacturing activity in US cities over a 30-year period, finds no evidence of dynamic urbanisation economies.

However, even were one to find a positive relationship between urbanisation economies (measured, say, by the degree of industrial diversification) and subsequent city growth, this would not resolve the issue. One might simply be explaining the redistribution of economic activity within national space,

towards larger and more diversified cities. Would one really be explaining economic growth? The question sends us back to *national* economic growth. If cities do not contribute to *national* economic growth, can they be said to be contributing to growth at all (increasing the size of the pie)? If they do not, then models that explain city growth are, in effect, identifying the factors that allow cities to capture a greater share of national growth, which is useful; but they are not explaining economic growth.

In terms of endogenous growth theory, the issue is appropriate spatial scale: that is, the scale at which economic growth can be considered an endogenous process.⁵ At what spatial scale do the social processes and causal relationships implicit in endogenous growth theory operate: the city, the region, the nation? In the following sections, I shall argue that the appropriate scale is the nation;⁶ that the conditions that allow urban areas to be centres of innovation are primarily determined by national attributes. Agglomeration or urbanity, for lack of a better term, might be among those attributes. But, how does one go about measuring the relationship between 'agglomeration', as a national attribute, and economic growth?

Rigorously testing the relationship between cities (agglomeration) and national economic growth may be impossible. It is difficult to imagine a national variable that fully captures the concept of agglomeration (or city) as understood by Jacobs and others. Absolute city size is of little use, since more populous nations will, by definition, house larger cities (imagine Shanghai in Denmark). If one wishes to compare nations, one has little choice but to use urbanisation levels (as in Figures 1 and 2), an admittedly imperfect indicator. In Figure 3, data similar to those used in Figures 1 and 2 are presented, but with per capita GDP growth from 1960 to 2002 (in constant 1995 US\$) on the X axis.⁷ The Y axis measures urbanisation levels in 1960. The data are for 95 nations for which consistent time-series data were available; 1960 was the earliest year for which World Bank data were found (World Bank, 2004).

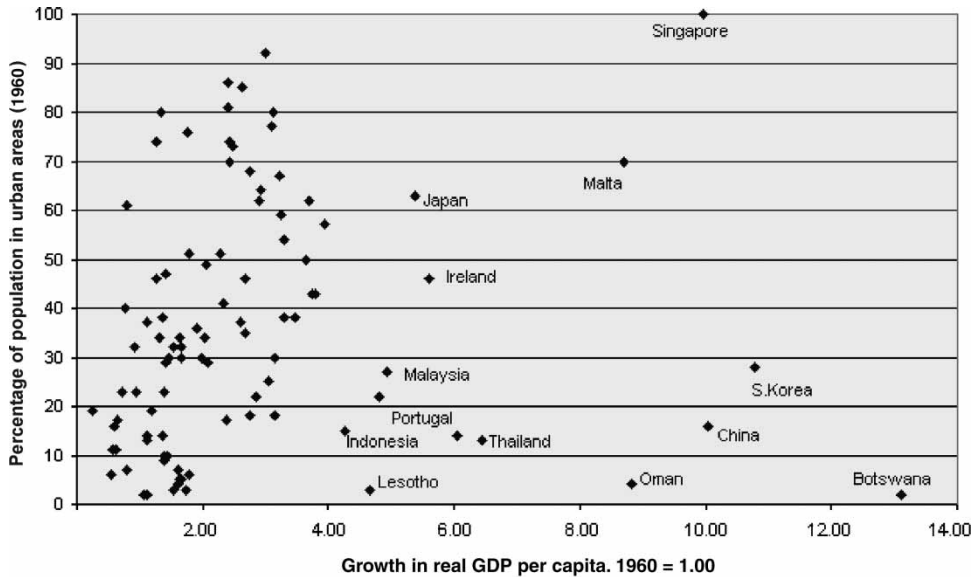


Figure 3. Growth in real GDP per capita, 1960–2002, and urbanisation levels in 1960. Key: Each dot represents a nation.

The results shown in Figure 3 are straightforward. No significant relationship is observable between urbanisation levels at the beginning of the period (1960) and subsequent growth in GDP per capita. Regressions were also done with 1965 and 1970 as starting-points. In all cases, the R^2 value was in the 1 per cent range or lower and failed to meet the significance criterion. Fay and Opal (2000) also find that urbanisation levels are poor predictors of growth. Looking at the outliers on Figure 3 (i.e. nations with above average growth), it is difficult to find any common denominator: Botswana, South Korea, Malta, Singapore, China, Oman ... Admittedly, Figure 3 cannot be said to be a rigorous test of the relationship between 'cities' and economic growth. But, it is difficult to argue that a strong urban heritage or way of life (however defined) is a common characteristic of the star performers. Looking at Europe, the two best performers, Ireland and Portugal, were initially very rural societies with no urban heritage comparable with, say, northern Italy or the Low Countries (although this is somewhat less true for Portugal).

In the next sections, I shall discuss why the city–economic growth link remains problematic and why the causal relationship is more likely to point in the opposite direction.

Rethinking the Link between Cities and Economic Growth

As in most of the writings in urban economics, we have defined 'city' to mean agglomeration. However, the use of the word 'city', which remains the most widely used term (see references), creates an ambiguity, to which I now turn.

Cities: Places or Primary Economic Organs?

Krugman (1996) draws an essential distinction between cities or urban areas as policy-making units and cities as *places* for production and exchange. The concept of 'agglomeration economies' refers, by definition, to urban agglomerations (to *places*), but which need not necessarily correspond to administrative or political units. Only in rare cases do urban agglomerations correspond to

political units, whatever they are called depending on national nomenclatures: municipalities, cities, communes, etc. However, in many languages (at least in English, French and Spanish), the word 'city' can have both meanings. It can refer to a political-administrative unit, as in the City of Paris, and also, in its generic usage, to an urban area. A resident of the suburbs of Paris, when asked "What city are you from?" may well answer Paris, even if he (or she) lives beyond the administrative boundaries of the City of Paris.

The double meaning of city is a source of confusion. In the German adage quoted earlier, referring to the historically liberating effects of cities, the word 'city' is implicitly used to designate both a generic entity (an urban place) *and* an administrative-political unit. This use is valid in its historical context. In the Middle Ages and during the Renaissance, 'cities' (i.e. urban places) in Germany, Italy and other parts of western Europe often had separate charters, creating distinct institutional environments, which facilitated trade and economic activity. Cities were organised as independent corporations with, in essence, their own constitutions.⁸ By contrast, Russia at the time had no corporate towns on the Western model, no municipal law and no maxims such as 'City air makes you free' (Heer, 1962, p. 100), which may in part explain why Russia was less successful, later, in promoting economic growth.

It is only valid to use the two meanings interchangeably where 'cities' (i.e. urban areas, agglomerations) also refer to distinct institutional environments, which significantly impact economic behaviour. This is clearly not the case for most cities today, with minor exceptions such as the city-state of Singapore and perhaps Hong Kong. In most nations today, the role of 'cities' (political-administrative definition) is limited to the delivery of local public services. The overall legal and institutional environment, which governs economic relationships, is largely defined by national legislation and state/provincial legislation in federations. Almost a century ago, Howe (1915) bemoaned

that American cities had been stripped of power and responsibility. The US case is by no means unique.

Implicit in the Jacobs-type view of the city as a primary economic organ (to use her terms) is the proposition that cities, by their very nature, offer a distinct social environment that will nurture innovation, experimentation and, ultimately, economic growth. But, for this proposition to hold, two conditions must be met: the institutions that impact economic behaviour must encompass the agglomeration; and, the institutions must be fundamental in defining economic relationships and behaviour. Neither condition holds in the vast majority of cases today. As noted earlier, local authorities seldom match agglomeration boundaries and their responsibilities are limited. True metropolitan governments are a rarity. In sum, agglomerations do not, in general, constitute distinct social entities, with relevant policy-making environments. This leaves the possible *pure* gains from agglomeration, to which we now turn.

In Search of the Foundations of Economic Growth

A full review of the economic growth literature falls beyond the scope of this essay. In parallel with endogenous growth theory, interpretations that emphasise what, for lack of a better term, we may call soft factors (culture, values, trust, etc.) have gained ground in recent years. Fukuyama (1995), Landis (1998) and OECD (2001) stress, respectively, the role of trust, culture and social capital. Acemoglu *et al.* (2001) and Easterly and Levine (2002) emphasise the role of institutions and their origins, in turn in part grounded in geography and history. Understanding the foundations of long-term economic growth will continue to preoccupy social scientists. It is my contention that agglomeration is not one of those foundations.

What determines the upper limits of agglomeration economies? I suggest that, at any given moment, it is the national institutional environment which largely

determines the rate of economic growth and, ultimately, the gains from agglomeration. I use the term 'institutional environment' as a catch-all that captures the effects of history, culture and other factors on policy-making and on the functioning of the state. I suggest that national macroeconomic policies, institutions and culture remain the prime factors in explaining relative levels of economic development of nations and peoples, and thus also of the economic performance of cities. In support of my case, I shall attempt to show that even the most local public actions and services are inextricably intertwined with the broader institutional context.

The ability to interact 'productively' is a core component of agglomeration economies: urban places where people can securely congregate to trade, communicate and work. Some hundred years ago, before the concept was coined, Howe observed

The city can only live by co-operation, by co-operation in a million unseen ways. Without co-operation for a single day a great city would stand still (Howe, 1915, p. 4).

Howe then goes on to describe the myriad new public services, hitherto unfamiliar, needed to make a 'modern' city work. The provision of those services pre-supposes the existence of a functioning state (national, regional, local), an institutional environment where people are accustomed to paying taxes and where those that spend tax revenues are accountable (or, at least, acceptably honest). Stated differently, the full realisation of the economic benefits of urbanisation and agglomeration require fundamental institutional changes for which some societies are better prepared than others.

Hence, it is largely the state and its regulatory framework, I suggest, that set the upper limits on the gains from agglomeration. Without national institutions that work, the productive potential of urban places will remain limited. Admittedly, what Olson (2000, p. 175) calls spontaneous markets will arise in cities in the absence of a functioning public sector. The vitality of the informal

sector in many cities of the developing world bears witness to this. However, these are limited markets where the costs of doing business are high, due in large part to the absence (or deficiency) of a wide range of what economists call public goods: contract enforcement, regulation of financial institutions and land markets, property rights, public safety, macroeconomic stability, etc.⁹

Urban services, agglomeration economies, and the state. Numerous studies have documented the positive relationship between economic performance and local public services and infrastructures (see Arsen, 1997; Aschauer, 1993, 2000; Bidder and Smith, 1996; Crihfield and McGuire, 1997; Kessides, 1992, 1996; Lall *et al.*, 2001; Lobo and Rantisi, 1999; Munnell, 1992; Wang, 2002). The link between infrastructure and agglomeration economies is not difficult to comprehend. If an urban place suffers from continued power blackouts and water shortages, productivity will fall, bringing down the upper limit of agglomeration economies. As a corollary, other studies have documented the negative impacts of inferior public services on productivity (see Bjorvatn, 2000; Freire and Polèse, 2003; Lee, 1992; Lee *et al.*, 1999; Lee *et al.*, 1996; Reinikka and Svenson, 1999). For the individual firm—for example, power blackouts translate into production hours lost or a higher unit cost of power due to the necessity of running a private generator. Lee *et al.* (1999) note the negative impacts on business start-ups.

Although many infrastructures can *in principle* be provided by the private sector, efficient private provision generally requires a strong (national) regulatory environment. Many infrastructures are natural monopolies (especially those with network characteristics) or entail social and economic externalities (notably water and sanitation) and thus require public supervision to ensure proper service provision. Concessions must be negotiated, supervised and monitored. Private infrastructure investment is sensitive to the overall macroeconomic climate. Investors will not come forward unless there is some

assurance that contracts will be respected and monetary stability maintained.

The dividing line between what is local, regional and national varies from one nation to another. In one nation, water may be a national responsibility (whether privately or publicly provided), while it may be municipal in another. Legislation at the national level (or state level in federations) will largely define the political-administrative structures by which cities are governed. In most nations, local levels of government or administration (municipalities, towns, special purpose agencies, etc.) are creatures of senior levels of government. Policies affecting transport (petrol taxation, highway construction, etc.) are often decided at the state or national level. In most cases, urban public service provision will involve more than one level of government. For example, ensuring the fluid movement of vehicles in the city might involve the municipal government (traffic control), the regional government (road construction and maintenance) and the national government (vehicle licensing and taxation).

The link with the state is most evident for pure public goods. The dependence of agglomeration economies on pure public goods is not difficult to illustrate. The movement of people and goods within cities requires roads, streets, sidewalks, public lighting, public order and traffic control. Many urban services are pure public goods that *cannot* be privately provided. The private sector can build roads, streets, lampposts, parks, police stations, fire stations, traffic lights, etc. Government can sub-contract services such as road maintenance, street cleaning and even policing and fire fighting. However, in all cases the public sector must in the end pay the sub-contractor, establish the regulations that govern the service and monitor outcomes. The regulations and pricing systems (taxes, permits, etc.) that govern both public and private transport are a responsibility of the state. Again, the private sector may well *build* roads and highways, but the state must decide *where* they go and establish the institutional framework that oversees them. The point of all this is: most

urban services are complex public goods, which will not be adequately provided unless the overall institutional context allows it.

Cities as mirrors of national cultures. The ability of cities (places) to stimulate 'productive' behaviour will, in the end, depend on many factors. An environment with a flawed financial system (and thus high interest rates), where there is neither trust in public officials nor respect of contracts, will not be conducive to productive interaction. Glaeser (1994) notes that agglomeration and associated information spillovers also have their downside. Proximity, in the absence of adequate social cohesion, can facilitate criminal behaviour. Proximity can make social divisions more visible, sparking violence. Simon (2000) makes a similar point for US cities, stressing the ensuing negative effects on local politics. Agreed, cities promote interaction and the flow of ideas, but there is no assurance that these will *necessarily* translate into desirable (growth-enhancing) behaviour. The possibility of negative knowledge spillovers cannot be excluded. In sum, social and economic relationships in the city will largely reflect the society to which they belong. Violent societies will breed violent cities.

Kessides (2004), referring to the results of the 2003 World Economic Forum global survey of firms (which rates 12 business environment variables), notes that the ratings do not show significant differences between average firm responses sorted by city versus those by country, suggesting that within each country the national business environment dominates perceived differences across cities. If corruption—for example, is high in nation *x*, it will be rated high across all cities. Going back to the foundations of economic growth, Greenfield (2001) is perhaps the most ardent exponent of the importance, in history, of national attributes, arguing that national values, ideals and collective perceptions are essential elements in orientating social action and individual behaviour towards 'capitalist' pursuits. If the national value system and institutional environment

are not conducive to such behaviour, Greenfield (2001) argues, then growth will not follow, even in the presence of (global) technological progress. In sum, cities will be productive in productive national environments.

Cities as Products of Economic Growth

I have argued that the conditions that allow cities to be productive (beyond the pure gains from agglomeration) are largely grounded in national attributes and institutions. Proponents of the Jacobs hypothesis might respond that it is, precisely, cities (as primary organs) that shape national cultures and institutions. Let us return to the relationship between urbanisation and economic growth. Figure 3 suggested that the relationship is weak, at least in recent times. But, let us explore the issue further, going back in history and looking more closely at specific cases.

Cities (Agglomeration) without Growth

A second look at Figure 1 confirms that relatively high levels of urbanisation are not sufficient to ensure First World levels of economic welfare. This is most evident in the Southern Cone nations of Latin America (Argentina, Chile, Uruguay) with levels of urbanisation above 80 per cent, yet with real per capita incomes about a third that of the US. These nations are not, it appears, drawing the full benefits of agglomeration. Also, urban size does not appear to ensure First World levels of GDP per capita. Staying in Latin America, greater São Paulo and Mexico City are about three times the size of the largest Canadian agglomeration (Toronto), but with real per capita incomes for their respective nations about a third that of Canada. This suggests that economic growth in the past has been slower in the former than the latter. In other words, dynamic agglomeration economies, assuming they exist (specifically their spread effects to the rest of the nation) are not necessarily an automatic complement of high urbanisation levels or large city formation. How should one view such results?

Fay and Opal (2000) note that the answer lies, in part, in the shape of the curves. The positive relationship between urbanisation and GDP per capita is very strong when GDP per capita is shown on a logarithmic scale (the R^2 for Figure 2 is 82.0), a very robust relationship, repeatedly confirmed over time (Jones and Koné, 1996; Lemelin and Polèse, 1995; Tolley and Thomas, 1987). However, on a normal scale, the relationship takes on the form of a lopsided 'L' (Figure 1). The urbanisation curve rises steeply at lower income levels, eventually to flatten out after about \$5000 (real GDP per capita) in the 60–90 per cent urbanisation range. Indeed, the vast majority of nations with a GDP per capita above this income threshold show urbanisation levels above 50 per cent. Fairly high levels of urbanisation are attained at relatively low income levels. The pure gains from urbanisation (more accurately, from agglomeration) appear to diminish rapidly above a certain threshold. Income gains derived from further urbanisation, and perhaps also city size, must necessarily diminish at some point. Once urbanisation levels of 70 per cent or higher are attained, it is to be expected that increased urbanisation *per se* will contribute little to GDP growth. Thus, it is not surprising that urbanisation levels are poor predictors of changes in national income (recall Figure 3).

Historical analyses over longer periods are difficult because of data problems. Also, wars, boundary changes and other upheavals make historical comparisons almost impossible. No two nations are ever truly comparable. That being said, I have compiled income and urbanisation trends for Canada and Argentina over a 100-year period¹⁰ (Figures 4 and 5). The choice of Argentina may seem odd given its chronic economic underperformance, but that is precisely the point I wish to make: Argentina's economy evolved differently from that of Canada despite a similar starting-point, specifically in terms of its initial urban attributes. In 1890, Argentina's urbanisation level was slightly below that of Canada, but Buenos Aires was already larger than Canada's

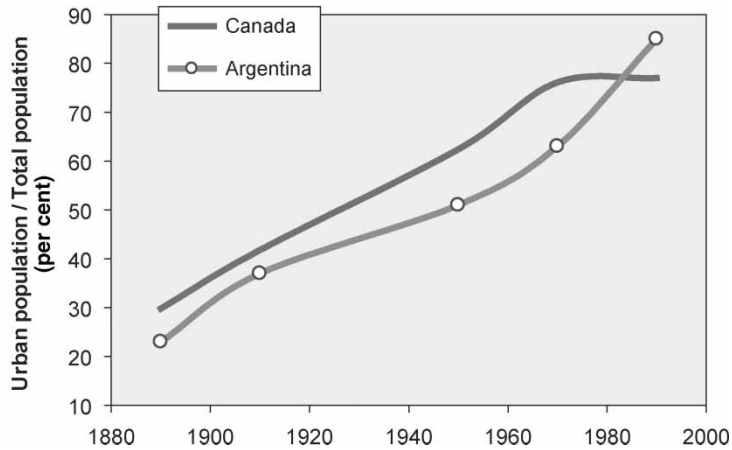


Figure 4. Urbanisation levels in Canada and Argentina, 1890–1990.

largest metropolis (Montreal), and undoubtedly as cosmopolitan.¹¹ The two nations share an early history of agricultural export-lead growth (roughly from 1880 to 1929) and start from a comparable income base: Argentina's income per capita was roughly 82 per cent that of Canada's in 1890.

Over the subsequent 100 years, the two nations largely followed the same path with respect to urbanisation. But the curves diverge on income, with Canada rapidly distancing itself from Argentina. It is difficult to attribute Canada's faster income growth

to higher urbanisation (bar perhaps a small fraction of it, given Canada's slightly higher initial levels). Argentina's urbanisation rate has accelerated since 1980 (overtaking Canada) while real incomes fell, suggesting that urbanisation (or city size) might have exerted a negative influence on income growth, an equally dubious inference.¹² However, one wishes to interpret the trends, Argentina's advanced level of urbanisation (for the time) and the presence of a large metropolis were not *sufficient* conditions, it appears, to trigger a process of sustained real

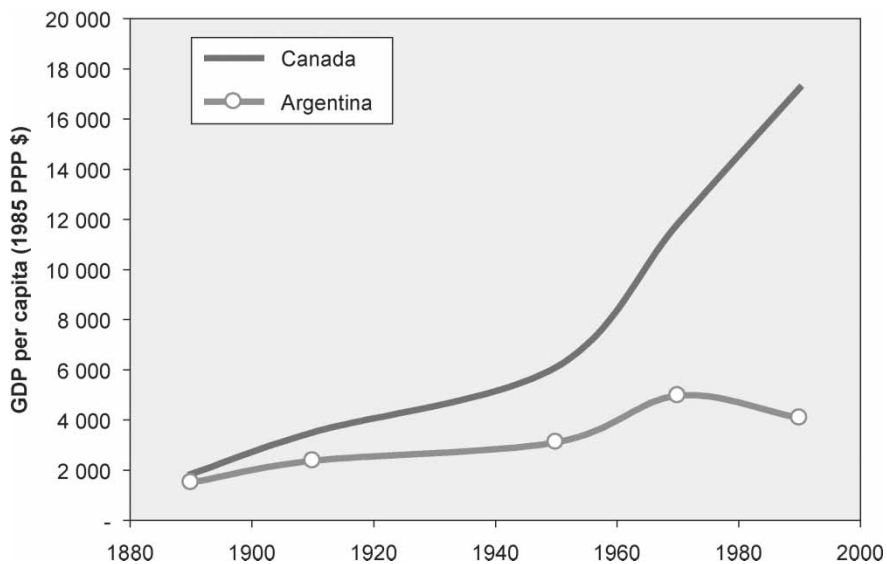


Figure 5. GDP per capita in Canada and Argentina, 1890–1990 (in 1985 PPP US\$).

income growth comparable with that of Canada.

On the growth impact of particular cities, especially large cities, we can go back further in time. The emergence of large urban centres during earlier epochs was not necessarily followed by periods of sustained economic growth. Great pre-industrial cities such as Alexandria, Rome or Mexico City (Tenochtitlán), to take only these examples, emerged in the past without triggering a process of sustained economic growth for their respective societies. Greenfeld (2001) notes that the great trading and financial centres of the Renaissance (Florence, Augsburg, Antwerp, etc.) were all located on the European continent, yet the industrial revolution took off in England, a comparative economic backwater before 1500. By the same token, urban economic decline is not an uncommon phenomenon. Many of the great merchant cities of the Middle Ages (Bruges, Siena, etc.) later fell into decline, despite their initial economic success (Heer, 1962).

Among the most interesting cases in the history of urbanisation without sustained growth is that of the Netherlands at the end of its so-called Golden Age (roughly from 1500 to 1675). At the time, Holland was the richest nation in Europe, with a per capita income above that of England. By 1675, the urban share of the population had reached a surprising 45 per cent, a percentage that England would not attain until 1850 (Greenfeld, 2001, p. 82). However, this period of prosperity and urbanisation terminated in decline. De Vries and van der Woude (1997; cited in Greenfeld, 2001) estimate that the total income of the Netherlands experienced a significant decline after 1650. Per capita income, they calculate, was lower in 1740 than in 1650. By the same token, urbanisation levels fell, to 42 per cent in 1750 and 38 per cent in 1815 (Greenfeld, 2001, p. 86). Most Dutch cities had ceased to grow. In sum, a high level of urbanisation and sophisticated urban life (Amsterdam during the Golden Age was the financial capital of the world and arguably also the most cosmopolitan city) were not sufficient conditions, in the

Dutch case, to ensure sustained growth. On this point, it is worth quoting Greenfeld

If England could achieve a modern economy without rates of *urbanisation*, occupational specialisation, or capital available for investment at levels comparable to those of the Netherlands at the time of their primacy, this means that none of the conditions are essential for determining the modern character of an economy (Greenfeld, 2001, p. 83; emphasis added).

None of the above negates the truth that cities have throughout history been centres of creativity, places on which the most talented and entrepreneurial will converge. Much of the recent writing on the pivotal role of cities stresses this attribute (Florida, 2002a, 2002b; Hall, 1999, 2000). This is, arguably, the historical function of cities, especially the largest: to act as gathering places for 'the best and the brightest' of the time. The 'creative classes' (to use Florida's term) will, during any period in time, gather in selected urban centres, which will become the chief centres of intellectual ferment. However, this does not necessarily make cities engines (primary organs) of national economic growth. The Dutch experience suggests that urban concentration follows growth, and not the other way around. As national economies grow, firms and individuals will naturally congregate in urban places for all the reasons explained under the heading of agglomeration economies. How then should one view the role of cities in the economic growth process?

Cities as Adjustment Mechanisms

The evidence that non-agricultural production is more efficiently achieved in urban settings is irrefutable, recalling our discussion of agglomeration economies. Thus, the classical textbook explanation of why urbanisation occurs remains valid (see, for example, O'Sullivan, 2000, pp. 85–103; Mills and Hamilton, 1994, pp. 433–458; and Polèse and Shearmur (2005, pp. 12–33). Rooted in what is sometimes called the two-sector

model of economic growth (for one of the earliest interpretations, see Baumol, 1967), the argument can be summarised thus: as labour productivity rises (a necessary concomitant of rising incomes), including in agriculture, labour will be pushed out of agriculture to goods and service-producing sectors. This occurs even if labour productivity in agriculture grows no faster than in the rest of the economy because relative (global) demand for food products will decline as incomes rise, an expression of ‘Engel’s Law’, which states that the share of household income spent on food falls as household income rises. Figure 6 shows the historical trend for the US.

The result is predictable. As incomes and productivity rise together with an ever-falling demand for labour in agriculture, relative wages and employment opportunities will fall in the countryside compared with wages and employment opportunities in urban places, setting in motion a rural exodus which will continue as long as the wage (productivity) disparity remains. Thus, the higher income levels in urban places (compared with rural places) implicit in the results in Table 1 can be interpreted as the result not only of agglomeration economies, but also of an on-going and as yet incomplete rural–urban migratory process.¹³ Labour, taken as a whole, is *still* more productive (i.e. will generate higher incomes) in urban places than in rural places. Urbanisation will continue as long as the difference persists.

The movement of labour from rural to urban places is an adjustment (to changes in demand) not different, in essence, from a transfer of labour, say, from textiles to electronics. Thus, the positive contribution of urbanisation to GDP growth is essentially ‘allocational’; the expression of a more efficient allocation of resources, resulting from a shift in resources from less to more productive locations.¹⁴

Thus portrayed, the shift from countryside to city is essentially reactive, the reflection of a territorial reallocation of labour (and capital) in response to conditions at a particular moment in time. A given level of urbanisation, with accompanying higher levels of real income in urban places, tells us that further income gains might be obtained by shifting more labour and capital to urban places. *It does not tell us, once all the allocational gains have been realised, that the new territorial allocation of labour and capital will in turn ensure a further period of sustained growth.*

Cities as Captors of National Economic Growth

Attempts to verify the existence of dynamic Jacobs-type agglomeration economies necessarily look at cities. Jacobs-type economies, if present, will cause particular cities to grow. As we have seen, measuring such dynamic agglomeration economies remains problematic. However, even if evidence of their

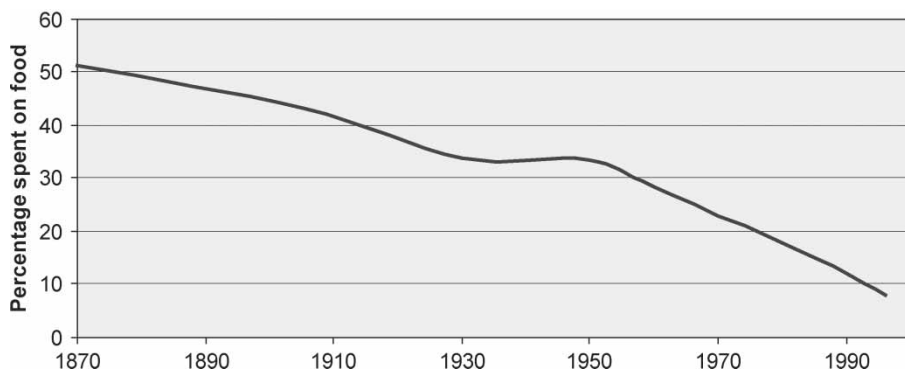


Figure 6. Percentage of household expenditure spent on food in the US, 1870–2000. Sources: World Bank (1998, 2002); Baudhuin (1966).

presence were found this would still not, I have argued, constitute proof of a link with national economic growth. The results would tell us that, for the nation and time-period studied, certain initial city attributes (diversity, proportional presence of 'creative' individuals, etc.) are associated with urban economic growth. Such models, I suggest, may simply be identifying the attributes of cities which, during a given epoch, have been most successful in capturing the fruits of national economic growth.

Let me take this argument one step further, and consider the implications for the distribution of economic activity among cities. At any moment in time, industries and talent will be regrouping over space; different-sized and different-located cities will play different roles as the national economy evolves. Dumais *et al.* (1997), Duranton and Puga (2001, 2002) and Henderson (1997, 2003) have made important contributions to our understanding of the spatial dynamics of location. As national economies grow, as economic structures change and as products go through various life cycles, production will, simply put, move through various stages, where each stage involves a new location. The most complex, diversity-dependent, products will (in accordance with Jacobs-type economies) originate in the largest and the most diverse cities of the time. As a product becomes more standardised (especially in manufacturing), production will increasingly move to medium-sized cities (although not too far), sensitive to classical (MAR) localisation economies.

This cycle of movement and spatial readjustment will continue as long as the national economy is growing. Depending on the prevailing technological wave, the results will be different in terms of winners and losers. The recent information-technology-led cycle of growth (approximately from 1993 to 2001 in North America) appears, on the whole, to have favoured the largest and most diversified cities. This is not surprising when one considers the attributes of places that facilitate the production of the products whose demand increased most rapidly: broadcasting,

software design, producer services, air-travel, entertainment, multimedia, etc. Nor is it surprising that cities that harboured a high proportion of educated individuals did best, given the personal attributes of workers in information-intensive industries. But, predicting which cities will (at any moment) capture the largest share of national growth is not the same as predicting which nations will grow.

On the Role of City Size and of Particular Cities

A growing body of evidence has accumulated suggesting that national urban hierarchies (i.e. urban size distributions) are very stable over time (see Davis and Weinstein, 2002; Eaton and Eckstein, 1997; Guérin-Pace, 1995; Sharma, 2003). Guérin-Pace (1995) notes that the ratio of the population of greater Paris to that of the next city, Lyon (about seven to one), has remained stable over nearly two centuries. Duranton and Puga (2001) contrast the observed stability of urban size distributions with the high rate of establishment turnover in France and the US. Others again have noted the stability over time of *relative* industrial structures by city size (see Henderson, 1997; Kim, 1995; Polèse and Shearmur, 2004). What these studies suggest, when set against the preceding sections, is that urban hierarchies act as a system of captors of economic growth to which growing firms are attracted or in which they spring up. Similar-sized cities will attract (or nurture) similar functions, depending on the nation's stage of development. The largest urban places are most instrumental in facilitating information spillovers (Glaeser, 1994); thus, activities most sensitive to information spillovers will spring up (and grow) there. It is also in the largest cities in each national hierarchy that the rate of firm creation in newly emerging industries will be the highest (what Duranton and Puga, 2001, call 'nursery cities'); that is their role.

Thus, one would *expect* Reykjavik (population about 120 000), Iceland's largest city, to show the highest concentration of information-intensive industries and the highest

rate of knowledge-intensive business start-ups in the nation. By the same token, one would expect greater Paris to play a similar role within France. Paris is about 100 times larger than Reykjavik. Yet, I suspect that Reykjavik generates about the same real GDP per capita.¹⁵ For both cities, one can safely predict, given their position at the top of their respective national urban hierarchies, that their GDP/population share ratios are above unity,¹⁶ recalling Table 1, probably in the 1.1–1.5 range.¹⁷ In other words, it is not absolute city size that matters, but relative city size within a given nation. This is yet another way of stating that it is the national context, not city size *per se*, that primarily sets the upper limits of a city's productivity at any given moment. If agglomeration *per se* (city size) were truly a significant independent variable, explaining productivity differences, one would expect Paris to generate a much higher GDP per capita than Reykjavik.

A corollary of the above is that cities (i.e. their sizes) adapt to national conditions and not the other way around. The Japanese case is especially convincing. Davis and Weinstein (2002) document the underlying stability of Japan's economic geography over 1000 years. Their examination of Nagasaki and Hiroshima is particularly instructive. The almost total destruction of these two cities at the end of World War II resulted, as would be expected, in a downward shift in their place within the Japanese urban hierarchy. But, some 20 years later, both had again reclaimed their historical rank in the national urban hierarchy. In other words, the pattern of location of economic activity in Japan is the reflection of fundamental geographical constraints (topography, climate, coastlines, etc.), which do not change over time. Technology may alter some of the constraints: advances in medicine and sanitation underlie the growth of southern Florida (Miami) and air conditioning the rise of the US Southwest (Phoenix, etc.). But here again, growth was determined by exogenous factors.

All this suggests that the principle of cumulative causation (increasing returns) is subject to countervailing forces when applied to

cities, although it may hold for nations as a whole. Cities—i.e. their size, will in time fall into order in accordance with the national urban hierarchy. At this point, it is useful to recall Henderson's (1997) demonstration of why cities of different sizes arise in an economic landscape.¹⁸ Stated differently, urban hierarchies will 'naturally' develop in a growing economy, in order to accommodate the full range of economic activities with different urban-size needs, at different stages of development. It follows, if the argument is correct, that not too much should be made of the success of particular cities during particular epochs; that is, if the objective is the explanation of long-term sustained economic growth.

In sum, as national economies grow, economic activities will 'naturally' distribute themselves among various-sized cities. The nation's economic geography will evolve within the bounds of its inherited urban hierarchy, showing the usual regularities (i.e. rank–size distribution) and changing only very slowly over time, barring a major upheaval. One would expect greater change in more recently settled nations such as the US and Canada than in older nations (such as Japan, France) where economic geography has deep historical roots. The precise mix of urban places will be different in each nation, the national 'stage', so to speak, on which economic development is played out. If I may be forgiven for stretching this metaphor further, the stage is not the engine that propels the drama. But, a well-designed and a well-managed stage-set is essential if the play is to be a success.

Conclusion and Public Policy Considerations

I have argued that it is difficult, if not impossible, to demonstrate rigorously that cities (agglomeration *per se*) cause economic growth. The proposition cannot be rejected outright, but the evidence, I suggest, is weak. At an analytical level, part of the problem stems from the quasi impossibility of distinguishing between factors that allow

given cities to capture a greater share of national economic growth and those that allow cities to add to national economic growth. If one cannot disentangle the two, then most of the econometric studies (in search of dynamic agglomeration economies), cited in this paper, may simply be measuring the former. At a more conceptual level, I have argued that the fundamental socioeconomic processes that explain long-term economic growth primarily operate at the national/societal level, and not at the city level. The reason for this, I have argued, is that cities (agglomerations) do not constitute distinct institutional environments. National attributes and institutions set the upper limits of agglomeration economies, at any given moment.

Glaeser, Lucas, Romer and others are undoubtedly correct in arguing that cities (agglomeration) facilitate communication, the exchange of ideas and knowledge spillovers. But, the issue is causation. Roads, the telephone and the Internet also facilitate communication, but few would argue that roads *cause* long-term economic growth, although good roads are essential for economic growth.¹⁹ It is as difficult to imagine sustained economic growth without cities (agglomeration) as it is without roads. But, the presence *per se* of cities (or roads) is not a sufficient condition to generate long-term economic growth. The agglomeration of people and firms in cities is but one of the many concomitants of economic growth. Life would be much easier, certainly for policy-makers, if it were possible to generate economic growth by promoting the agglomeration of people and industry.

Agglomeration and Public Policy

In the end, the value of any theory or proposition, at least in the social sciences, rests on its ability usefully to inform public policy. The primary shortcoming, arguably, of the Jacobs 'engine of growth' hypothesis and the more recent theoretical constructs that build on it (see quotes at the outset of this paper) is that they are difficult to translate into effective public policies. The track record

of agglomeration-oriented economic growth strategies is not good. Parr (1999a, 1999b) provides an excellent analysis of the rise and fall of growth-pole strategies.

The notion that economic growth can be deliberately jump-started by steering the location of industry remains popular. In recent years, the literature on clusters (see notably Porter, 1996, 2000) implicitly posits that fostering the concentration of related industries will stimulate economic growth. However, cluster-based strategies are, in many respects, the opposite of the Jacobs approach, since they are founded on the virtues of specialisation, rather than on broad-based agglomeration economies, founded on the virtues of diversity and cross-fertilisation, central to the Jacobs hypothesis. Cluster-based strategies are not at issue here. In any case, cluster-based strategies are necessarily partial, place-specific and period-constrained. No industry grouping will go on growing forever. The Jacobs perspective, we have seen, is much broader, rooted in the posited growth-enhancing effects of cities (agglomeration) and city life *per se*.

Obviously, creating a favourable environment that allows people to exchange ideas and firms to interact is a good thing. Basic infrastructures, street lighting, sewage treatment, traffic control, public safety and all the rest, are essential if urban areas are properly to fulfil their role as places where firms can locate and grow. However, we have seen that the emergence in the past of great cities, including diverse and cosmopolitan cities (probably well-run at the time), was not necessarily followed by sustained periods of innovation, creativity and national economic growth. As Hall (2000) admits, the conditions that make a particular city 'creative' at a given moment in history are perhaps not amenable to a universal theory.²⁰

The author is not necessarily happy with this conclusion. Deep down, I would prefer that Jane Jacobs were right. I much prefer pedestrian-oriented cities with active street-lives and harmonious architecture, and would very much like to believe that these attributes

stimulate economic growth. But, there is little evidence that economic performance (specifically, national economic performance) and urban aesthetics are linked. A rigorous relationship between urban quality of life, if it could be measured, and economic performance is difficult to demonstrate. To take but one indicator (admittedly partial), homicide rates are systematically lower in Canadian metropolitan areas than in US metropolitan areas of comparable size, but this has not prevented American cities, and the United States in general, from generating higher per capita incomes. Most casual observers would probably agree that cities in western Europe (Dutch, French, Italian, etc.) are, on the whole, more people-friendly, more conducive one might think to knowledge spillovers (recall the quote from Glaeser *et al.* 1992), than most US cities; but this has not necessarily translated into correspondingly higher incomes (or growth) for the nations involved. Cities, I have argued, are a reflection of the societies into which they were born. This is as true for economic relationships as it is for social relationships, and probably also for aesthetic preferences.

Does all this mean that how cities are planned and governed are of little importance? By no means. Cities (urban places) are important not because they are unique engines of economic growth, but because it is increasingly *in* urban places that people live and that economic activity takes place. Making urban places as efficient and as liveable as possible are necessary public policy objectives. I want the city I live in to be safe, have clean air, pleasant parks and a vibrant cultural life. These things are worthwhile, even if a link with economic growth cannot be rigorously demonstrated. Finally, public investments in particular cities to make them more efficient places to do business (to interact, to trade and to innovate) *can* contribute to national economic growth, but so will investments in health, education and infrastructures in general and so will appropriate national macroeconomic and monetary policies.

Notes

1. Also called endogenous growth theory (the name we shall use), with Lucas (1988, 1990, 2001) and Romer (1986, 1994) among the most well-known contributors.
2. In the US case, the most commonly used equivalent would be Metropolitan Statistical Areas (MSAs) as defined by the Bureau of the Census. However, MSAs only refer to urban areas with population above 100 000 and their limits are in part defined by county boundaries. A more appropriate unit is the Bureau of the Census concept (less well known) of 'Urban Area', which covers all urbanised areas and urban clusters with populations above 2500. Definitions will vary among national statistical agencies.
3. In Table 1, the percentages in column 4 (B) can refer to GDP, GNP or national income. In general, spatial variations are less for income than for product. However, this does not alter the basic relationship illustrated in Table 1.
4. Why 'endogenous'? Because in endogenous growth models, technological change, the principal source of long-term productivity growth, is endogenously generated, spurred by the continued accumulation (and interaction) of human capital.
5. The issue of spatial scale also arises for agglomeration economies. As Parr (2002) points out, the spatial reach of agglomeration economies is often left undefined.
6. The word 'nation' is used here in its broadest sense, meaning both a sovereign state and/or an identifiable people with its own culture (in its anthropological meaning) and institutions. The reasons for this definition will become clear shortly.
7. The idea for Figure 3 came from an anonymous reviewer, whom I should like to thank.
8. Heer (1962, p. 82) notes that elements of Venetian constitutional practice were absorbed in the constitutions of many US states where they have survived in altered form.
9. Public goods, in the language of economists, refer to goods and services that will not be provided by the private sector, in large part because (all) users cannot be billed for the service.
10. The income data are drawn from Landis (1998, Table 20.1, p. 325).
11. At the time, the two cities played similar roles in their respective national economies: the chief points of entry for European immigrants and the chief ports for (Prairies,

Pampas) grain exports to the rest of the world.

12. Bairoch (1992) is not far from making this inference, in part because of the institutional and macroeconomic strains the management of big cities can place on developing societies.
13. Note that the ratios in Table 1 are generally higher for developing nations, an indication that the gains from rural–urban migrations are highest during the early stages of growth. Recall the discussion on the L-shaped curve (Figure 1).
14. Denison-type growth models generally attribute only a small percentage (generally in the order of 5 per cent, more or less) of recorded growth in per capita income to rural–urban movements (Denison, 1967, 1985).
15. In 2000, France and Iceland registered almost the same GDP per capita (PPP adjusted); respectively, \$24 400 and \$24 800 (World Bank, 2002).
16. The value of the ratio will in part reflect the degree to which the adjustment process described earlier is complete and thus the degree to which a spatial reallocation of labour (towards the city in question) would potentially add to GDP.
17. Recall that the ratios for developed nation cities generally fall below 1.5.
18. Henderson's demonstration is especially interesting because it applies to manufacturing, unlike more classic Christallarian models, which essentially apply to the service sector.
19. The construction of a new road can, of course, facilitate economic growth by generating trade, specialisation, and scale economies. However, this is a one-time effect, analogous to the gains from rural–urban migration. There is no assurance that once these gains have been fully realised that further economic growth will follow. The focus of this essay, let us recall, is on sustained economic growth: recall the Kuznets (1968) definition.
20. Florida (2002a, 2002b), is not so humble. Simply put, Florida argues that if a city has the appropriate attributes ('cool cities' in Florida's parlance) needed to attract what he calls the 'creative class', growth will follow. However, it is not clear, even accepting Florida's premise, whether this is a strategy for grabbing a bigger slice of the national pie or of increasing the pie. If it is the former, then surely there must be an upper limit to the number of cool cities able to increase their share of the national pie.

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