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Agglomeration and growth: a dialogue between economists and geographers

Gilles Duranton* and Michael Storper**

Abstract

This special issue contains papers by both economists and geographers on agglomeration and growth. In this introduction, we first provide a brief sketch of recent developments in the interaction between economists and geographers. We then propose some contextual background to make it easier for geographers to approach the economics papers of this issue and conversely. Finally, specific areas of overlapping interests to the two disciplines are also highlighted.

1. Introduction

From the time that economists started again to be interested in geographical issues in the early 1990s and until fairly recently, the relationships between economists and geographers were rather simple. Within geography, the interest of economists was greeted by much scepticism (e.g. Martin, 1999a, 1999b), and by some with interest but also with reservations (e.g. Scott, 2004). The debate later on evolved on how best (not) to engage with economists (Amin and Thrift, 2000, and the subsequent debate in Antipode, 2001). On their side, economists mostly chose not to respond to the criticisms (Brakman and Garretsen, 2003; Overman, 2004, are exceptions) and went on to pursue their work as usual. It is fair to say that intellectual exchange between the two disciplines was minimal.

With the aim of fostering interactions between the two ‘camps’, several initiatives were launched. First, came the *Handbook of Economic Geography* edited by Clark et al. (2000), which contains mirror chapters by economists and geographers on range of issues of mutual interests. To maintain this momentum, this *Journal* was subsequently created in 2001 with a dual board composed of economists and geographers. One of the risks is that economists and geographers keep publishing in what is turning to be a successful common outlet but focus their attention on contributions within their own discipline.

This special issue is part of what could be viewed as a ‘third-generation’ initiative where economists and geographers would physically meet and talk.¹ The *Journal* sponsored a special session at the annual conference of the Association of American

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1 In the same spirit, a conference sponsored by the European Science Foundation took place in October 2003 in London with a programme composed of both economists and geographers. This conference led to the publication of a special issue of *Environment and Planning A* (2006).

Geographers in 2004 in Philadelphia. In practical terms, the session was organised around a specific theme (agglomeration and growth) with economics and geography papers. The economics papers were then discussed by the 'geography editor' of this special issue and vice versa. The main idea behind this is that it was better to talk about particular themes (which may be broadly construed like 'agglomeration and growth' in our case) to avoid undue emphasis on sterile discussions about why the other 'camp' is wrong and uses inappropriate methodologies.

The participants played by the rules and if attendance at the session is anything to go by, it was a huge success. Among the papers presented at the session, three appear in this special issue. The papers by Ottaviano and Peri; Glaeser, Gyourko and Saks; and Ezzleblacher and Rigby all deal, albeit in very different ways, with agglomeration and geographically-uneven growth. Each of them also touches other topics, which are of mutual interest to both economists and geographers. In the rest of this introduction, we identify and discuss briefly a list of 'issues' where economists and geographers have some mutual interest.

2. Human diversity and local amenities

Ever since the pioneering work of Roback (1982), economists have been convinced that local amenities can influence local economic outcomes in all sorts of subtle ways. A location with good amenities will be more attractive. In turn, this will raise land prices. But then higher land prices will affect the choices made by firms regarding factor usage. In turn, this can affect the local composition of economic activity (away from land intensive activities) and local wages (which will also capitalise these amenities). Over the years, many studies carried out by economists have tried to quantify the effects of different types of amenities, from good weather to pollution or crime (see Gyourko et al., 1999, for a review of this literature). This literature has produced a rich set of estimates about, for instance, how much residents are willing to pay to live in a safer neighbourhood or a cleaner city.

In the first paper of this issue, Ottaviano and Peri draw on this line of thought to assess the effects of migrants in US cities. Their main argument is that the foreign population in a city can be viewed as a positive (or negative) amenity on the consumption side (through for instance the presence of ethnic restaurants and shops) as well as a positive or negative amenity on the production side (if foreigners have skills and abilities that differ from the natives). Their main finding is quite surprising: migrants in US cities tend to be primarily a productive amenity and increase the wage of locals. The effects are rather large and robust to a number of robustness tests.

Ottaviano and Peri bring significant innovation to the question of diversity, because instead of searching for the effects of immigration in the standard places, i.e. productivity or wages of immigrants, or the 'costs' of immigration to the economy, or even the effects of immigrants on labour supply and wages of the economy of the city as a whole, they suggest that the question itself can be posed differently. Having done this, they find that diversity seems to have some kind of possible spillover or learning effect on the natives, and hence on *their* productivity. Thus, the innovation is double, because it suggests that the amenity lies elsewhere than the standard area of consumption: it is in production.

Of course, the standard problem with any research on amenities still haunts us: it is difficult to say whether an amenity is a cause or an outcome of other dynamics, and

‘amenity’ remains a frustratingly vague term as it is used in much of the literature (one thinks of how ‘climate’ is deemed to be a positive amenity that can explain the success of both Seattle, a cloudy place, and San Jose, a sunny place).

Economic geography has a long tradition of thinking about the relationship between diversity and growth, stemming from Jane Jacobs notions in the 1960s. These have recently been revived in debates about the sources of growth and ‘creativity’ in cities, which evoke notions such as ‘tolerance’, which is a close synonym of diversity. Those attempts are stimulating, but they do not have the consistency and rigour found in Ottaviano and Peri, and hence it can be considered that economists have now given some grist to the mill of geographers. However, an important line of research in geography on ‘world cities’ has tended to emphasize negative aspects of diversity, such as social, economic, and spatial polarization and inequality, economic ‘dualism’, and such. Much of these early conclusions have now been shown to be widely off the mark, since the world cities tend to have bigger upper tails to their income distributions, but not necessarily bigger lower tails. The research reported here falls in with a reinvigorated interest in the positive sides of diversity.

Geographers arguments on this relationship are more daring with respect to the relationship between population characteristics and the economic base: from Jacobs to ‘creative cities’, they hold that high-tech and knowledge-based agglomerations are driven by the presence of the right kinds of labour. Ethnic diversity is just one aspect of this, along with skills. The skills argument is also favoured by economists such as Glaeser and Saiz (2004), and it can be seen in a dynamic context of ‘learning’ effects of individuals over the course of their careers, and how that attracts people to high-cost places, even early in their careers when their real standard of living will be lower than in the cheaper places. In any case, economists and geographers are now contributing to the elements of understanding how population characteristics and the location of activity (composition of activity and labour demand) interact over time and generate local wages and prices, but a great deal more remains to be done.

A different angle is traditionally explored by urban geography, but it suggests a potentially fruitful avenue of mutual exploration by geographers and economists. Urban and social geographers emphasize spatial patterning or mixing (and inequality), implicitly taking such patterning to be an indicator of interaction (between income groups or racial/ethnic groups) or its absence. This is a tradition that goes back to the Chicago School of urban sociologists. More recently, economists, sociologists and geographers have engaged a lively debate about segregation and ‘mixity’, attempting to test whether being together in urban space, and at what scale, is good for individuals in less favoured groups. The results of that research have been inconclusive: it is difficult to detect ‘neighbourhood effects’ on school performance of such individuals, for example. The present research suggests that the interaction effects might be elsewhere, but of course it does not give us details on precisely ‘where’ or at what spatial scale these positive interaction effects occur. It thus suggests that economists and geographers need to refine and perhaps reformulate their questions of what to measure to get at the effects of diversity in the city.

3. Firm heterogeneity and location

Rigby and Essletzbichler’s paper has a starting point which reflects the geographer’s underlying concern with a world whose economy is not at a stable and frictionless

long-run steady-state.² This reality reflects many forces: history is an important one. Many economists would respond, ‘but that’s just friction’. But geographers respond that in the present, there are real and important costs to acquiring information, and these real costs can reinforce the weight of history by reproducing durably different perceptions and cognitive frameworks for agents in different places. Such differences are liable to be greater for some activities than for others and hence the degree and durability of the distance from steady-state will be greater in some activities than in others. Rigby and Essletzbichler argue that empirical research on the geography of the economy should therefore not use the representative firm as its starting point. To do so would evacuate much of the most interesting aspects of geographical variation and the dynamics of the economy. Instead, by starting with the empirical reality of firm behaviour in different places, we can build up a picture of an economy adjusting to change over space, ‘from the bottom up’, and determine the rate and direction of adjustments toward steady-state and hence the potential intertemporal properties of the economy, without assuming that it goes straight from one pre-determined steady-state to another. The results of such an approach, as reported in this paper, are different from those in a standard economist’s approach, whose concession to possible deviations from frictionless equilibrium are generally limited to spatially variable trade or information costs and time lags. Instead, suggest Rigby and Essletzbichler, in reference to technology, the differences may be bigger and more durable than what one is likely to get from the standard economist’s approach.

Although early variations on the Alonso-Muth-Mills monocentric model were quick to consider the possibility of heterogeneous consumers in the city (Wheaton, 1977), it is fair to say that for a long time ‘heterogeneity’ took the back-seat in urban and regional economics. A first recognition of the importance of heterogeneity came from the fact that the existence of cities is difficult to reconcile with the assumption of a spatial economy populated by an ‘army of clones’. Instead, as highlighted by Fujita and Rivera-Batiz (1988), agglomeration has to rely on some complementarities between heterogeneous agents. Until very recently, however, the role of heterogeneity in spatial economics did not go much beyond that of a key ingredient to generate desirable properties such as agglomeration.

The next impetus came from empirical studies using microdata (e.g. Dunne et al., 1989; Davis and Haltiwanger, 1992). These studies demonstrated a considerable amount of heterogeneity and churning at the plant level. Massive levels of entry occur simultaneously with massive levels of exit. Plants, even with very narrowly defined industries, exhibit considerable heterogeneity in their productivity and the technologies they use. The incessant entry and exit of plants also seems to be very closely

2 The concept of equilibrium has been the subject of much acrimony between economists and other social scientists. Although a footnote like this one will certainly not close the debate, it must be said that the concept of equilibrium is often misunderstood. For economists, an equilibrium is an outcome predicted by a given model. This outcome need not be permanent. To describe such permanent (or long-run) situations, economists use the concept of steady-state. Furthermore, an equilibrium is not some hypothetical frictionless situation that needs to be contrasted with the ‘real’ outcome in the real world. Equilibria are routinely derived in models where frictions play a fundamental role such as matching models in labour economics. Finally, equilibrium is a positive concept and thus differs from optimum. Nothing prevents an equilibrium from being incredibly inefficient in many cases.

related to technological progress. Even more recently, it was also shown that there were spatial patterns associated with this churning (Dumais et al., 2002). In turn, these empirical studies led economic theorists to reconsider the importance of heterogeneity to understand the spatial behaviour of firms (see Melitz, 2003; Melitz and Ottaviano, 2005, for recent examples). However, heterogeneity is such a multifaceted concept that a cooperation between economists and geographers appears necessary. What the paper by Essletzbichler and Rigby shows is that economists may want to broaden their interest beyond the magic trilogy of entry, exit and total factor productivity, to consider also firm heterogeneity in the relative use of factors of production and technological trajectories.

4. Local regulations and local politics

Since Tiebout (1956) economists have been interested in understanding what type of outcomes decentralised forms of government may imply. The economic literature on local public finance and the provision of local public goods is now very well developed (see Epple and Nechyba, 2004, for a recent survey). However, it is fair to say that the interest of the economic profession in local regulations and their effects has been so far more marginal. There is indeed a literature that explores the effects of different planning and zoning regulations but this literature mostly takes a ‘public interest’ angle and is thus interested in determining what the best regulations are without much consideration for how these regulations are determined in practice.

In the third paper of this issue, Glaeser, Gyourko and Saks hypothesise that local regulations could explain the wide differences across US cities in the evolution of their house prices over long period. Some prosperous cities like Las Vegas saw no increase in their house prices while others like San José experienced very fast house price growth. They first propose a small model where positive shocks have different effects depending on how the supply of housing is restricted. In non-restricted cities, positive local shocks lead to the expansion of the local workforce through in migration and change in neither house prices nor wages. In restricted cities, positive shocks imply instead higher wages and higher house prices. Using data about local regulations in US cities, they provide empirical support for their working hypothesis.

Geographers have been interested in the relationship between housing prices and the economic base, with conclusions—such as higher-wage places tend to have higher housing prices—that economists have sometimes questioned, because of the difficulty of assigning causality. Thus, for example, Las Vegas has had lower wage growth than New York or Boston, but it also has much lower average levels of human capital and a different economic base from the places where housing prices are very high. The Glaeser, Gyourko and Saks paper is in a shared area of interest between economic geography and economics. The interesting work will now be in trying to find more convincing causal sequences. Are higher income people more likely to restrict, and this conforms to the picture drawn both by our authors and by economic geographers on the behaviour of highly skilled people in world cities (gentrification and NIMBYism)? Or is it just more pressure from these people to live in centre cities as opposed to their more suburban counterparts in Las Vegas: sprawl and sun versus cold and dense? If so, then local land use policies would be at most an intermediate variable, but not the fundamental cause. In any event, this research stimulates both economists and geographers to seek the causes not only of location of people of certain skill and

income levels in certain places, but whether they then engage in political behaviours there that in turn affect housing prices and residential patterns there, or whether we are simply witnessing spatially-differentiated land use and lifestyle preferences from Sunbelt to Snowbelt.

Of course, these three papers do not cover all the possible topics where the interests of economists and geographers overlap. Trying to be exhaustive would of course be beyond the scope of this introduction. Among the topics not discussed above, one could mention non-market interactions in agglomeration and residential behaviour, the microfoundations of urban morphology, human capital externalities, greater investigation of possible sources of agent heterogeneity and a long list of other questions. If economists tend to be better at finding rigorous and ‘parsimonious’ formulations of things, geographers tend to be better at seeing the manifold effects of context, of the intersecting domains of city-building and change, and of society in relationship to spatial-economic choices of individuals. With more communication between geographers and economists on the questions asked and methods employed, certainly the synergies that have begun to manifest themselves in recent years could increase, to the benefit of all.

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