Third World Quarterly, Vol 23, No 1, pp 137–161, 2002

Carfax Publishing
Taylor & Francis Group

Regional push: towards a geography of development and growth in low- and middle-income countries

ALLEN J SCOTT

ABSTRACT *Regional push derives from the geographic agglomeration of economic activities, and is expressed in increments to national productivity. Various pieces of statistical evidence in favour of the existence of regional push effects in low- and middle-income economies are marshalled. The origins of these effects in different sorts of externalities and increasing returns to agglomerative scale and scope are analysed in theoretical terms. Further evidence for the existence of these effects is displayed in a brief review of published case studies of African, Asian, and Latin American regions. A number of observations are then offered on the possibilities of identifying viable developmental policies and practices directed to enhancing the productivity-boosting properties of regions in low- and middle-income economies.*

Right from the beginning of the Industrial Revolution, regions have played a disproportionately important role in processes of economic development and growth (Pollard, 1981). What I mean by 'region' in this context is an area of sub-national extent focussed on a central urban agglomeration or agglomerations together with an immediately surrounding hinterland. Regions have played this role not just as passive geographic receptacles of productive activity, but as powerful instruments shaping how development and growth have actually occurred. In part, we can explain this situation in terms of the differential natural endowments of regions but, more importantly, we need to approach it in terms of what a realist like Sayer (1984) would call their 'emergent effects', in other words, their capacity under specifiable circumstances to generate significant economic synergies.

This state of affairs has long been familiar to heterodox economists such as Hirschman (1958), Kaldor (1970), Lampard (1955) and Myrdal (1959). They took externalities and increasing returns seriously—in part because they explicitly or implicitly recognised the importance of the full intellectual legacy of Marshall (1890; 1919)—and saw that one major expression of these troublesome phenomena can be found in regional complexes of economic activity (troublesome, that is, to the neoclassical faith in unique equilibrium outcomes). Mainstream development economists, for their part, have until recently largely

Allen J Scott is Director of the Center for Globalization and Policy Research, UCLA, 3250 Public Policy Building, Box 951656, Los Angeles, CA 90095-1656, USA. E-mail: ajscott@ucla.edu.

ISSN 0143-6597 print/ISSN 1360-2241 online/02/010137-25 © 2002 *Third World Quarterly*
DOI: 10.1080/01436590220108216

ignored the role of the region, while focusing on the national and international dimensions of the problem and, above all, on competitive markets as the essential foundation for any decisive transition beyond underdevelopment as such (eg Balassa, 1981; Little, 1982). Even erstwhile dependency theorists like Amin (1973) or Frank (1978) showed little interest in the sub-national dimensions of what they called ‘peripheral development’ (see also Peet, 1980).

Since the early 1980s an enormous surge of literature in economic geography and allied fields has demonstrated the significance of the region as a nexus of critical developmental and growth processes, although the vast majority of this literature is concerned with regions in high-income countries, particularly in North America and Western Europe. Theorists who have made substantive contributions here are Amin and Robins (1990), Asheim (2000), Becattini (1987), Cooke and Morgan (1998), Fujita *et al*, (1999), Gertler (1992), Harrison (1992), Krugman (1991), Markusen (1996), Porter (2001), Scott (1983, 1988), and Storper (1997), among many others. These theorists offer a wealth of new and rediscovered ideas about the logic of the regional economy and its peculiar efficiency-promoting properties. At the same time, a segment of the literature has started of late specifically to probe into the character of regions as sources of economic progress in low- and middle-income countries, and into the possibilities of effective developmental policy and practice by means of public intervention at the regional level (Rabellotti & Schmitz, 1999; Schmitz & Musyck, 1994; Storper *et al*, 1998). All of this literature suggests repeatedly that selected regions are capable of exerting powerful *push* effects on national development and growth.

In this paper, I shall look in both theoretical and empirical terms at the sources of these push effects and the ways in which they ramify with wider economic and political processes in less-developed parts of the world. The term, ‘push’ as I use it, plays on certain analogies to the idea of the big push as derived from the work of Rosenstein-Rodan (1943), in that it refers to processes of interdependent development combined with increasing returns to scale and scope (Murphy *et al*, 1989). However, I limit its range of empirical referents here to purely local complexes of productive activity, as opposed to the entire national economy. Lucas (1988) has referred to a similar idea with his notion of an ‘urban force’ effect in economic development.

The regional dimension: a preliminary assessment

A frame of reference

Development is a process of building and rearranging economic resources in the interests of enhanced productivity; and growth is the expression of that enhancement in terms of increments to gross product. These processes are, of course, enormously complex, and coalesce out at many different levels of geographic and organisational scale.

A schematic view of what I mean by coalescent levels of scale in this context is given in Figure 1. Each of the levels indicated is capable of generating important synergies giving rise to developmental push effects. The figure highlights in the first instance a series of elemental entities representing bundles of

capital and labour (differentiated by type, efficiency, age, and so on). Capital and labour are further characterised by their deployment within individual units of production or establishments, which represent a distinctive level of synergy in the economy by reason of their technical, managerial and cultural specificities. A single establishment may constitute an individual firm, or different establishments may be brought together in a common network of ownership and governance relations to constitute a multi-establishment (multi-region, multinational) firm. The multi-establishment firm itself is an additional site of economic synergies. Equally, establishments are arranged by sector, which represents a level where peculiar organisational or institutional structures often generate yet more competitive advantages. Most importantly for present purposes, *establishments or firms can be locationally differentiated and grouped by region*, and this latter level of organisation constitutes an especially significant dimension of development and growth with strong emergent effects. Sectors and regions are in turn embedded in a wider macroeconomic environment as represented primarily by the national economy; and national economies can then be aggregated into pluri-national blocs and, at the limit, into a global economic system.

The regional level presents a particularly intriguing aspect of the problem, and I shall attempt to elucidate something of the complex role that it plays in relatively backward economies. Development as a concrete outcome always occurs on the ground, and is related to, but should not be restricted to, macro-

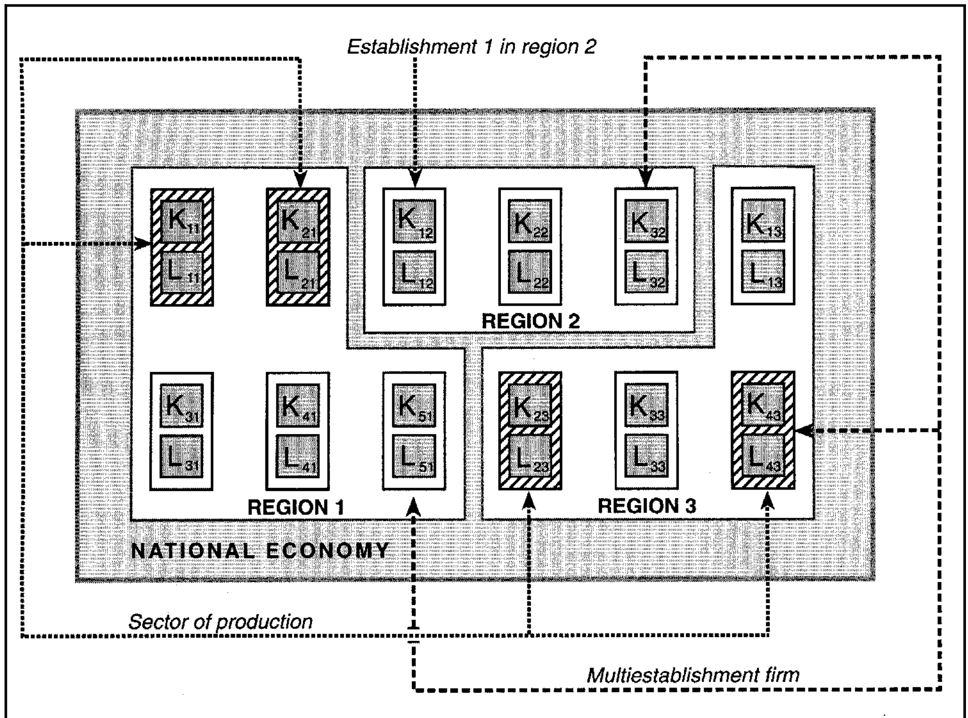

Figure 1. Schematic representation of the elementary components of development and growth K_{ij} and L_{ij} are capital and labour inputs, respectively, to establishment i in region j.

economic phenomena such as market-opening measures or fiscal stability (the watchwords of mainstream development theory). For reasons to be adduced, it is frequently associated with and dependent on the emergence of dynamic regional industrial complexes. Complexes of this kind, to appropriate a notion from Amsden (2001), are a means of translating mere accumulation of industrial capacity into an actual process of development. It is important to bear in mind as the discussion proceeds that the different organisational levels sketched out in Figure 1 are by no means independent of one another but are, of course, also deeply structured by their mutual interpenetration. In addition, we need to confirm at the outset, in some preliminary but reasonably reassuring way, that regions are indeed implicated directly in processes of development and growth. One obvious line of attack on this question is to examine whatever econometric evidence may be available. At a later point we shall also look at a mass of monographic case-study materials on actual regional economies in less-developed parts of the world.

A brief review of the elementary econometrics of regional push

There is now a large literature stemming from work carried out in the 1970s by analysts like Carlino (1979), Kawashima (1975), Shefer (1973), and Sveikauskas (1975) on the productivity-enhancing capacities of cities and regions in many different parts of the world. Most of this literature uses standard production functions to explore how capital and labour inputs to production combine with agglomeration effects to create value-added. Agglomeration effects in turn are usually broken down into so-called localisation economies (ie efficiency-boosting phenomena that come from the clustering together of firms in a given sector), and urbanisation economies (ie efficiencies that result from the agglomeration of many different kinds of activities in a given region). In fact, localisation and urbanisation economies are chaotic (but statistically convenient) concepts, and they ought in principle to be decomposed into more fundamental categories, as I indicate later.

By far the greater part of this literature refers to empirical situations in the more developed countries of the world, but there is now also a growing body of work that seeks to examine the quantitative effects of agglomeration on productive efficiency in low- and middle-income countries. Thus, Henderson (1986, 1988) has carried out production–function analyses of two-digit industries in the metropolitan areas of Brazil, and has found strong evidence for the existence of agglomeration economies. According to Henderson, localisation economies play a dominant part in this regard, while urbanisation economies are present but only weakly so (see also Henderson & Juncoro, 1996; Richardson, 1993). Lee and Zang (1998) arrive at comparable conclusions in their study of manufacturing industry in South Korea, and they suggest that, if employment in any sector in any region were to double, the gross output per worker would increase by 3%, and value-added per worker by 7.9%. In a study of Indian cities, Shukla (1996) demonstrates that equally significant increments to productive efficiency are generated by urbanisation, and that a massive 51% increase in productivity can be detected as we shift our attention from cities of 10 000

inhabitants to cities of one million. The latter findings are backed up by Mills and Becker (1986), and Becker *et al* (1992) who indicate that productivity advances in Indian manufacturing typically increase with city size, and by Chen (1996), who shows that agglomeration economies in the food and machinery industries in China also increase with city size (although in the case of Shanghai agglomeration diseconomies are apparently detectable).

If regional agglomeration effects are rather persistently distinguishable in production–function models, then we would expect them also to be evident in total factor productivity as measured by growth accounting models of the sort developed by applied economists such as Barro (1997), Levine and Renelt (1992), and Young (1994, 1995). Unfortunately, and in spite of a large literature on cross-country growth accounting for less developed parts of the world—especially in East Asia—few researchers have tried to take agglomeration economies specifically into account. One of the few exceptions to this remark is a study by Mitra (2000) who carries out a growth-accounting exercise for a panel of Indian states over the period from 1976 to 1993. Mitra shows that there are significant increasing returns to scale in Indian manufacturing industries as a function of urbanisation, with observable diseconomies appearing as urban population passes some critical threshold level.

In one way or another, all these studies indicate that GDP growth rates per worker and overall rates of urbanisation (a proxy for agglomeration) are strongly and positively interrelated in many different parts of the less economically developed world. In numerous cases, of course, the causalities are probably bidirectional, for if urbanisation helps to induce rising economic growth, so growth in turn is often a stimulus to further urbanisation, ie processes of circular and cumulative causation are likely to be strongly at work (Myrdal, 1959; Renaud, 1979). This pattern of cumulative causation occurs precisely because of increasing returns effects due to urbanisation/agglomeration. Thus, locational clustering induces increments to growth, which then lead on in turn to further locational clustering (in contrast, say, to de-urbanisation or the randomisation of spatial economic patterns). Since empirical analysis can never, by definition, pick up on counter-factual cases where economic activity is randomly or quasi-randomly distributed in geographic space, it follows that statistical estimates of agglomeration economies will actually tend to underestimate the true impact of agglomeration on productivity.

Our task is now to see how these effects might actually be constituted for the special case of low- and middle-income economies. The task is of considerable interest and significance not only for its own sake, but also for the potentially enhanced fire-power that it offers to policy makers seeking to accelerate development and growth in less economically favoured parts of the world.

The region as an engine of development and growth in low- and middle-income economies

The polarisation debate

In 1981 Wheaton and Shishido published a much-noted article showing that rates

of urban concentration tend to follow a bell-shaped curve relative to the level of development in any country. Very poor countries, they argued, are rather sparsely urbanised, and much of their population lives in rural areas. As per capita income rises, however, rates of urban concentration go up and, in middle-income countries in particular, a distinct tendency to hyper-urbanisation becomes apparent, with the principal city containing a disproportionately large share of the total population. With yet further increases in income, the pattern of urbanisation becomes less concentrated again, in the sense that the share of the population living in the principal city declines, although the urban population as a fraction of the whole continues to increase.

In the light of trends like these, numerous scholars and policy makers in the late 1970s and early 1980s averred that many Third World countries, and especially those moving up the hyper-urbanisation curve, were afflicted with serious diseconomies of agglomeration. Lipton (1977) wrote critically about what he called the 'urban bias' in economic development, and others pointed to the evident overcrowding, congestion and social breakdown that seem to be an inevitable adjunct to large-scale urbanisation in poor countries. Strong arguments accordingly circulated in academic and policy circles to the effect that active polarisation-reversal policies would probably relieve much of the pressure and would in all likelihood actually accelerate processes of national development and growth (cf Richardson, 1980; Todaro, 1980; Townroe & Keen, 1984). These views, however, were for the most part short-lived, not only because they unduly depreciate the productivity gains from large cities, but also because any serious attempt to implement them would be likely to incur high costs. Polarisation reversal on a significant scale may well promote a number of social benefits, but in the light of the discussion in this paper, it almost certainly cannot provide a platform for accelerated economic take-off, and all the more so given that poor countries can ill afford to spread expensive but indispensable physical infrastructure across wide swaths of terrain (Henderson *et al*, 2001; Mitra, 2000). In a study of the Brazilian economy, Storper (1984) vigorously criticised polarisation reversal policies on the grounds that geographically uneven development offers a pathway to more rapid growth and increases in human welfare generally, despite the heavy social costs that may be incurred in the journey. In the vocabulary of the present analysis, we may say that regional economic agglomerations in less-developed countries provide a decisive push in the direction of overall development and growth.

Note that the latter remark is not intended to suggest that developmental efforts on the agrarian, rural front have no useful role to play, or that significant diseconomies never show up as cities or regions grow in size. The point is, rather, as the subsequent argument will seek to demonstrate, that the long-run benefits to urban growth in less-developed countries almost always outweigh the costs, and that these costs, moreover, can often be moderated by suitable kinds of policy intervention. Since the early 1980s polarisation-reversal policies have actually passed quietly from the agendas of the international development agencies that once saw them as an important instrument of economic and social progress.

The foundations and variable character of regional push effects

Low- and middle-income countries present a medley of faces, and generalisation about them is fraught with hazards, except perhaps to say that excessively large segments of their populations live in dire poverty. Their economic structure varies greatly, not only from country to country but also from region to region within individual countries. Many parts of the less-developed world have little or no industrial development whatever, and have little prospect of significant economic take-off for the foreseeable future. In other areas, we may observe the stirrings of embryonic industrial regions, sometimes with their roots in indigenous pre- or proto-capitalist forms of traditional craft production (Amorim, 1994; Aero, 1992). We also find instances where some of these emerging craft clusters have evolved into vigorous and burgeoning industrial districts.[1] The point can be exemplified by reference to numerous industrial districts in India, producing everything from marble mosaics to knitwear, to shoes and bicycles (cf Cadène Holmström, 1998; Baud & de Bruijne, 1993; Pederson *et al*, 1994). As the evolutionary process works its course, some of these industrial districts even progress to the point where they begin to command significant export markets. In yet other parts of the less-developed world, large and dense agglomerations occur in which more advanced manufacturing and service industries play an important role. These agglomerations represent not only important foci of economic progress, but also of modernisation in general (cf Armstrong & McGee, 1985). Some of the most dramatic examples of this phenomenon are represented by the new industrial spaces and the great electronics complexes of East and Southeast Asia.

How can we assemble a story about regional push effects in low- and middle-income countries that is sensitive to all this diversity? The answer here is to insist on a few essential principles or analytical guidelines (so that they can be adapted to the markedly idiosyncratic circumstances that we find in empirical reality), while seeking to avoid undue theoretical over-specification or boilerplate formalisms. This methodological point must be yet more emphatically emphasised with regard to any effort to infer policy prescriptions from the same principles. We may delineate these principles with reference to a few broad ideas. Since there is now a huge body of published research relevant to theoretical questions of regional push, I shall be brief.

The argument proceeds on the basis of five main points about the foundations of geographical agglomeration and the positive externalities and increasing returns effects that it engenders.

Inter-firm transactional relations, both traded and untraded. Inter-firm flows of goods, services, information, and so on, are, under certain conditions (instability, uncertainty, labour-intensive transmission systems, etc), most efficiently secured when producers are located in close proximity to one another. Clustering is also an important strategy for minimising the transactional risks that firms encounter, especially small firms in developing countries (Schmitz & Nadvi, 1999); in other words, clustering increases the probability of finding just the right kind of supplier or outlet at just the right time.

Local labour markets. Commuting costs and job search/recruitment costs are invariably much reduced where local labour markets are large and dense. Local labour markets are also a major source of 'Marshallian atmosphere' in that they constitute social structures through which the habituation of workers and the transmission of agglomeration-specific know-how are effected.

Structures of learning and innovation. Small day-to-day (but cumulatively significant) increments to stocks of local knowledge typically occur as producers interact with one another in the course of business. On-the-job learning (particularly in sequences of different jobs in sequences of different firms) is an important adjunct to this process. Regions accordingly become distinctive repositories of specialised technologies and expertise, just as firms, sectors and nations do (Esser *et al*, 1996; Lall, 1990).

Institutional infrastructures. Economic systems at all levels of spatial resolution are typically shot through with institutional arrangements in the form of rules, conventions, and associations that perform overarching governance functions (eg in regard to inter-firm business practices) and that serve—when they are well designed—to reinforce region-wide competitive advantages (cf Salais *et al*, 1998).

Physical infrastructures. One of the critical underpinnings of any regional economy consists in public goods such as roads, bridges, airports, and so on. Infrastructural artifacts of these sorts, with high fixed costs, would frequently fail to materialise under pure market relations of supply. At the same time, the high fixed costs associated with these artifacts means that significant economies of scale can usually be achieved when they are offered as public goods.

In passing, note that what I alluded to earlier as localisation and urbanisation economies are really overlapping aggregations of these more fundamental considerations, and they thus need to be appropriately deconstructed as concepts and as categories of measurement.

There seems to be wide agreement in the literature that some combination of considerations like these can usually be found in operation in any given regional economy. When it comes to the precise mechanisms of how they work, however, or the importance of any one of them relative to the others, all semblance of consensus disappears. One of the great problems, of course, is that each empirical case represents a uniquely complex combination of variables in a process of circular and cumulative causation, leading to a partially endogenous (and path-dependent) developmental dynamic (Bardhan, 1995). The local peculiarities of any path-dependent pattern of evolution are liable to be further complicated by the intersecting network externalities, economies of scope and other complementarities that sustain the entire regional economy (cf Boschman & Lambooy, 1999; North, 1995). This does not mean that generalisation is impossible, but it does mean that any attempt to do so must be up to the difficult task of distinguishing basic systematic structures from masses of local contingencies.

Agglomeration and development

Whatever the precise manner in which agglomerations actually come into being and grow, the fundamental feature that they all share in common is that they are made up by phalanxes of interdependent units of production together with an ancillary local labour market. Interdependence in this context signifies the existence of networks of specialised but complementary firms interpenetrated, as already noted, by different kinds of non-commercial linkages. In many cases, too, and nowhere more so than in less-developed countries, these firms tend to be small flexible producers facing relatively short-term planning horizons in sectors where entry barriers are low (cf Späth, 1993). Firms like these usually flourish best in a socio-geographic environment that offers a multiplicity of risk-reducing assets, such as, for example, many alternative input and output possibilities and pools of unemployed workers ready to respond to any temporary increase in the demand for labour. In this manner, too, clustering enables firms to focus more intently on their core competences and to intensify their rates of informal learning-by-doing and learning-by-transacting.

To be sure, economists like Krugman (1994), Lau (1996) and Young (1994, 1995) have offered persuasive arguments to the effect that firms in less-developed countries (even in such advanced cases as Hong Kong, Singapore, South Korea and Taiwan) may not be particularly innovative in productivity-enhancing ways, and that the greater part of economic growth in these situations can be accounted for simply in terms of the quantitative accumulation of capital and labour. Even so, capital and labour need to be attracted, deployed and retained, and their complementarities energised, and industrial regions in less- as in more-developed countries are important instruments for the achievement of this end (cf. Clague, 1997; Nelson & Pack, 1999; Romer, 1993).[2] At the very least, industrial regions in developing areas are vortices of creative *bricolage*, involving the reworking and recycling of familiar products, as well as the adaptation of imported machinery and equipment to fit local circumstances (Bell & Albu, 1999). If these kinds of activity do not obtrude dramatically in total factor productivity statistics, they are still a *sine qua non* for any sort of production to occur at the outset.

I shall have more to say below about the empirical specifics of cases like these. For the moment, we may simply register the fact that the markedly assertive economic expansion of many formerly underdeveloped countries over the past couple of decades has almost without exception been associated with the rise of selected regions as primary conduits of development and growth (cf Jacobs, 1969). Even more worthy of note, perhaps, is the fact that in a large number (though certainly not all) of these cases, the main basis of regional expansion has coincided with complexes of small-scale, labour-intensive industries originating in purely local crafts and skills. In the now faded era of import substitution, industries such as these were commonly thought of as little more than archaic and backward remnants, doomed to disappear as large-scale, capital-intensive, and thoroughly modern industries were built up so as to usher in *real* development. Industrialisation via import-substitution itself has typically been dependent on a strong regional base for its success, as exemplified dramatically by the

Brazilian car industry in the period from the 1950s to the early 1990s (Cano, 1998). As the export-orientated industrialisation programmes that superseded import substitution have gained momentum, they too have shown a proclivity to work themselves out via regional concentrations of productive activity. In this manner, export-orientated economies, especially in East and Southeast Asia, have been very successful in combining the advantages of their initially low wage levels with the push effects that come from intensifying spatial agglomeration. These effects represent the endogenously created competitive advantages (Verdoorn effects) that enable entire groups of producers to move ahead in formation to the next stage of market contestation (cf. Amsden, 1985; Porter, 1990).

Foreign direct investment, too, has often played a definite role in helping to anchor and stimulate the formation of local productive systems in less-developed areas. In the past, an influential school of thought concerned with 'corporate imperialism'[3] has argued strenuously that beneficial spillover effects could not possibly be expected from foreign-owned branch plants in less-developed countries. A large body of empirical evidence in favour of their existence, however, is now available (cf. Lall, 1980; McAleese & McDonald, 1978; Rasiah, 1994; Roberts, 1992; Scott, 1987), and whatever objections on other grounds one may have to the ways in which multinational corporations operate in these countries, a claim that they are subject to a ubiquitous tendency to remain cut off from their local economic environment can scarcely be one of them. As they spread their roots, often in specially designated export processing zones, they generate in and around the local milieu new forms of technological information, new entrepreneurial activities (accelerated by vertical disintegration), improvements in labour skills, and so on, as well as increases in employment. In brief, foreign-owned branch plants (as well as inward subcontracting activities) have been in many instances a significant source of agglomerative push and an important medium through which selected regions in less-developed countries have come to be incorporated into global commodity chains (Bellak & Cantwell, 1998; Christerson & Lever-Tracy, 1997; Gereffi, 1995; Henderson, 1989). Humphrey and Schmitz (2001) have also recently written about the advantages that can be obtained by producers in less developed parts of the world by seeking incorporation into the global networks of lead firms (often retailers such as Marks and Spencer or Tesco) situated in developed countries.

Finally, it should be doubly evident from all of the above that I do not mean by 'push' the sort of balanced national growth advocated by an earlier era of development theorists, but rather purely localised synergies brought into play as geographically related groups of firms go about the daily routines of production. 'Push' is here quite explicitly associated with unbalanced regional growth *à la* Hirschman (1958).[4] To be sure, unbalanced growth in this sense cannot be expected to work itself out in the absence of certain pernicious side-effects, the most predictable, *ceteris paribus*, being a tendency to widening income inequalities across geographic space. This tendency is apt to be much more insistent under conditions of macroeconomic structural adjustment in developing countries (cf. Chakravorty, 2000). Hence, a workable and politically legitimate policy of fostering development and growth on the basis of regional push is not

likely to have long-run survival value in many countries in the absence of some sort of compensatory redistributive effort.

Regional push in context: some case-study materials

Over the past decade or so an impressive collection of case studies of the role of regional industrial clusters in less-developed economies has begun to accumulate. A useful review of some of these studies up to the early 1990s can be found in Nadvi and Schmitz (1994). An extraordinarily wide variety of cases has been documented in the literature, ranging from small-scale, artisanal industries to more advanced sectors like electronics and financial services, and running the gamut of low- and middle-income countries. In the large metropolitan regions of these countries, these contrasting types of economic activity can often be found flourishing in close proximity to one another (cf Chiu & Lui, 1995)

Small-scale artisanal industries

Even in a technologically advanced economic order in which globalisation is everywhere making its effects felt, local complexes of small-scale artisanal industries remain important. Often enough, these grow out of purely indigenous pathways to industrialisation. Examples abound in Africa, Asia and Latin America, and we shall now briefly consider some representative case studies for each of these geographical areas.

Regional clusters of artisanal industries occur throughout the continent of Africa, although they are in general less in evidence and less advanced than in Asia or Latin America. This state of affairs is probably not so much because Africa is an erratic case in terms of its inherent developmental logic but because the circumstances of history and geography have set its starting position so much lower (cf Bloom & Sachs, 1998; Sachs & Warner, 1997). Studies by Dawson (1992), McCormick (1999), Sverrison (1997) and Van Dijk (1997), among others, have examined a number of artisanal clusters in Ghana, Kenya and Zambia, with diverse specialisations in industries such as fish processing, garments, metal working and furniture. These clusters produce mostly low-quality outputs based on unskilled, low-wage labour, and they remain in a preliminary phase of development. Even so, they display signs of organisational complexity, ranging from evolving divisions of labour to a distinct capacity for innovation as manifest by the adaptive behaviour of producers faced with the need to make do with recycled inputs and second-hand equipment. One of the more striking of these clusters is the vibrant vehicle repair industry in Kumasi, Ghana, where large numbers of small-scale workshops provide a profusion of customised and semi-customised services, frequently based on the re-fitting of old parts (Dawson, 1992). The Kumasi cluster has developed to the point where it now engages in a thriving export trade with surrounding countries in West Africa. Grant (2001) has recently argued that large African cities are also becoming increasingly integrated into the global economy through foreign direct investment. He indicates that Accra has become a major centre of 655 foreign companies which are both global in their reach and increasingly embedded in the

local economy.

Asia, as we might expect, is a hive of traditional industrial districts, many of which have started to achieve significant penetration of global markets (cf Cadène, 1998; Cawthorne, 1993, 1995; Chari, 2000; Kattuman, 1998; Nadvi, 1999a, 1999b; Sandee, 1994; Scott, 1994; Tewari, 1999). In India—especially after the turn to economic liberalisation in the late 1980s—industrial districts have developed and grown at a rapid pace. Cawthorne (1993; 1995) describes the emergence of a vertically disintegrated cotton knitwear industry in Tiruppur, which has now become a major exporter of t-shirts, although it is still evidently enmeshed in a low-road trajectory of development based on depressed wage levels and limited skills. Chari (2000) refers to Tiruppur as a case of 'capitalism from below', ie as a case of industrialisation based largely on peasant-worker entrepreneurs. Knorringa (1996, 1999) provides a dense account of the shoe-making cluster of Agra where some 60 000 workers are employed in 5000 manufacturing units. For the most part, the Agra cluster is a low-quality, labour-intensive industry, much given to cutthroat competition. It is also marked by a well developed subcontract sector in which sweatshops are rife, together with piecework and homework labour-contracting arrangements. Social networks are an important adjunct to the functioning of the Agra cluster, but these also display economically dysfunctional cleavages around caste and class. Despite these failings, some 25 of the top producers in the cluster, as Knorringa shows, have achieved a sufficient level of quality that they are able to export to markets in Europe and the USA. Symptomatically, these higher-quality producers evince a relatively strong propensity to inter-firm collaboration. In addition, as demonstrated by Scott (1994), the gem and jewellery industry of Bangkok has evolved from the small collection of workshops serving local markets that it was in the 1970s to a major export sector today. The industry has aggressively carved out this position for itself on the basis of its low wages, its vibrant agglomeration economies and the skillful political maneuvering of its representatives,

Latin America, too, is well-endowed with traditional industrial clusters making products such as clothing, knitwear, shoes, ceramic tiles, metallurgical products of all varieties, and so on (cf Altenburg & Meyer-Stamer, 1999; Lawson, 1995; Meyer-Stamer, 1998; Rabellotti, 1999; Rabellotti & Schmitz, 1999; Schmitz, 1999a, 1999b, 2001; Villarán, 1993; Visser, 1999). The research of Schmitz (1995, 1999a, 1999b, 2001) on the shoe-manufacturing agglomeration of the Sinos Valley in southern Brazil represents a particularly accomplished and detailed body of work. Schmitz shows how this agglomeration of vertically disintegrated footwear firms, whose origins stem from the local availability of hides and leather, has gradually evolved over the past couple of decades from a low-grade supply system selling strictly on the domestic market to a centre of medium-quality women's shoes with burgeoning export sales. Schmitz argues that geographic clustering, a dense texture of positive externalities, and the formation of institutions promoting beneficial forms of joint action have been critical to the success of the cluster, although signs of exacerbated competitiveness have also become evident of late. A further point advanced by Schmitz is that as the industrialisation of the Sinos Valley has moved forward, so traditional or ascribed forms of inter-personal trust based on kinship or ethnic relations have

gradually given way to what he calls 'earned trust' as a basis for business relations. Another way of expressing the same idea, perhaps, is to say that, as traditional industrial clusters become more thoroughly imbued with the spirit of modern capitalism, the reliability of individual firms in the conduct of business becomes more predictable, thus opening up new possibilities of collaboration and interdependence. This trend is especially important in view of the strong disposition to opportunistic and free-rider behaviour that has been noted in industrial clusters where the pressures of day-to-day existence undermine more long-term horizons of calculation (cf Van Dijk & Rabellotti, 1997; Knorringa, 1996).

More advanced sectors

The example of the Sinos Valley reminds us that small-scale traditional artisanal industries do not always remain at the lagging edge of economic development. Sometimes they advance and mature to the point where they become more recognisably like modern manufacturing sectors, without for all that necessarily losing their dominantly small-firm character. A striking example of an industry of this kind is described by Nadvi (1999a, 1999b) in a study of the surgical instruments cluster in Sialkot, Pakistan. Nadvi shows how the traditional metal-working industry of Sialkot, formerly a centre for the production of knives, swords, spears, razors, and so on, has evolved into a dynamic agglomeration of firms producing stainless steel surgical instruments. These firms have succeeded in capturing 20% of world exports in surgical instruments. Family ties and traditional trade associations remain active principles of social organisation among producers in the Sialkot cluster, but they appear to have evolved in ways that make them useful rather than obstructive adjuncts to modern business. In 1994, in response to restrictions by the US Federal Drug Administration on imports of surgical instruments from Sialkot, firms within the cluster made a concerted effort to restructure their activities, improving quality assurance throughout the supply chain, and rapidly recovering lost markets. The software industry of Bangalore in southern India (though never a traditional sector in the strict sense) has similarly evolved at a rapid pace over the past couple of decades. From its origins in the 1980s as a centre of so-called body-shop operations offering cheap, short-term subcontracting services (based on the local availability of low-wage technical labour) to US corporations, Bangalore has steadily moved up the price and quality curve to the point where it is today on the verge of becoming a really major node within the entire global software industry (Saxenian, 2000).

The case of Bangalore is not unlike that of a number of other recently emergent regions in the less-developed parts of the world: their growth is based on (a) a modern sector or sectors; (b) a locally supportive environment in the form of a rapidly modernizing city; and (c) successful penetration by their products of international markets and their incorporation into the international division of labour. Many other cities in Asia and Latin America display roughly similar characteristics (Armstrong & McGee, 1985; Scott, 1998, 2000). Obvious pioneers of this model are Seoul, Hong Kong, Taipei and Singapore, which have

grown by leaps and bounds over the past couple of decades (Clark & Kim, 1995). Another noteworthy example is Kuala Lumpur in Malaysia which, since the early 1980s has managed to become (after Hong Kong) one of the major commercial and financial centres of East and Southeast Asia (Morshidi & Suriati, 1999). By contrast, some of the large industrial–urban regions that emerged in countries like Brazil, India or Mexico under a regime of import-substitution have encountered serious problems over the 1980s and 1990s as a consequence of various economic and political shifts. As policy in these countries has moved increasingly away from protectionism, a number of regions that formerly flourished under import substitution are now engaged in serious efforts at restructuring. Consider, for example, the case of the so-called ABC municipalities in the southeast quadrant of the São Paulo metropolitan area, the cradle of the Brazilian car industry in the 1950s and 1960s. After a painful period of plant closure and job losses dating from the mid 1980s, this region has now begun to move in some new directions, including a decisive effort on the part of the local economic development agency (with backing from the Inter-American Development Bank) to promote the formation of a more synergistic local industrial system based on intensified inter-firm networking, more collaborative economic linkages, and skills upgrading (Scott, 2001; Rodríguez-Pose & Tomaney, 1999).

Ultimately some regions in what was formerly often described as the world periphery have now evolved to the point where it is doubtful if the appellation ‘less-developed’ can still be appropriately applied to them. The phenomenon is most clearly in evidence in East and Southeast Asia, where many regions have now, on the basis of their aggressive programmes of export-orientated industrialisation, effectively joined the ranks of the more economically advanced parts of the world. That said, almost all these regions continue to play an important role as foci of small-firm, labour-intensive craft industries with considerable informalisation, such as clothing, jewellery, and furniture.

Cautionary notes

Despite the positive tenor of the above remarks, industrialisation and urbanisation in less-developed countries invariably come at a high cost. Among the costs, as Douglass (2001) and Stren (2001) have pointed out, are massive problems of poverty, inequality, crime, congestion, environmental degradation, and so on. Moreover, labour markets in dense industrial districts in virtually all parts of the less-developed world are frequently under-regulated and conflict-ridden, if not on occasions positively despotic. Even if we can point to cases of definite upgrading of remuneration levels and labour skills in some areas, large segments of almost all these districts are marked by low wages, poor working conditions, casualisation, child labour, and strong feminisation of unskilled jobs (Lawson, 1995; Baud & de Bruijne, 1993).

Due respect must also be paid to the limits of the region as an instrument of development and growth. Many regions in the less economically developed world have been unable to activate even the most elementary initial steps of industrialisation. In other cases, regions that have managed to move some

distance down the developmental pathway find that further expansion is blocked by local crises or by external market forces, and many go into long-run decline. Nevertheless, problems like these can sometimes be obviated or rectified by appropriate forms of policy intervention, and in the next section, I shall attempt to work out a few guidelines for effective public action. In this context, I would add that, if the mainstream formula for developmental success, namely, the rule of law, a stable macroeconomic environment, high savings, increased schooling, and improved terms of trade (cf Barro, 1997) offers a very plausible framework for understanding national economic growth, it is nonetheless silent on the crucial issue as to how the nuts and bolts of productive systems at the micro- and meso-levels actually get put together on the ground,[5] except perhaps by some insinuated magic of the market. In this connection, the logic and dynamics of the regional economy, together with an identifiable set of public policies designed to boost local agglomerative potentials, need to be taken very seriously indeed.

Policy issues and development practice

Background matters

The entire development debate since the Second World War has oscillated between those who are in favour of open markets, free trade and competition, and those who advocate sundry degrees of governmental intervention and co-ordination in the economy. Representative statements by those holding one version or another of the former position can be found in authors such as Lal (1983) and Porter *et al* (2000); and of the latter in Amsden (1989; 2001) and Wade (1990), along with various adherents of the French regulationist school (eg Lipietz, 1985; Talha, 1995). A range of intermediate positions can also be identified, as, for example, in the case of the World Bank's recent advocacy of a 'market-friendly' approach (World Bank, 1993).[6] In view of the current triumphalism of American capitalism, those to the left of the market-friendly view appear for the moment to have been put into the position of theoretical challengers rather than champions, although, in matters of this nature, there is consolation of sorts in the observation that economic miracles—whatever their underlying causes—have always hitherto had an embarrassing habit of melting away, usually sooner rather than later.

The discussion in this paper does not seek to deal with these issues of macro-economic policy in any frontal way, but they are clearly relevant to public intervention at the regional level if only in the limited sense that regional policy needs to be harmonised with national initiatives. Somewhat like Rodrik (1999; 2000), I accept that markets and openness are powerful instruments of efficient economic order, but that supplemental arrangements are necessary to handle external shocks and equity issues and to provide a social matrix of institutions and public goods without which production systems cannot even begin to operate effectively. At the regional level this proposition translates into a series of arguments about bottom-up policy formulation and implementation programmes. One of the merits of this approach is that it is designed, not to act as an indicative planning instrument, but to stimulate agglomeration economies by working in

tandem with the regional economy as a complex socioeconomic collective. Here I construe policy formulation and implementation programmes as involving any form of joint action, whether on the part of government agencies, civil associations, private–public partnerships, or any other vehicle of socialised decision making and conduct.

The regional economic commons and its governance

Recalling the earlier theoretical discussion, we may aver that geographical agglomerations are always marked by what we might call a *regional economic commons* constituting the kernel of local competitive advantages. This phenomenon is composed of all the externalities and increasing returns effects actually or latently available as a result of the co-presence of many different interrelated producers in a given region, together with a local labour market and an overarching system of norms, conventions, cultures and so on. These commons by their nature benefit all but are the property of no one. They are by definition only partially susceptible to market forms of co-ordination and, in the absence of management by other means, are apt to be misallocated or undersupplied or both. At the same time, the situation is further complicated by the path-dependencies that typically structure the evolution of any regional economy (Boschma & Lambooy, 1999). For this reason alone, what we are liable to find in any given regional cluster at any given moment in time is less a sequence of instantaneous *optima optimorum* than a temporally local solution whose shape and form are conditioned by the previous history of the system. As a result of these market imperfections, positive social dividends are likely to appear whenever mechanisms of strategic political choice are put into place, thereby making it possible to steer the local economy away from less and into more desirable long-run outcomes. A confirmed anti-*dirigiste* such as Lal (1983) would no doubt object at this point that it is always better in practice to live with market failures than with the 'inevitable' gaffes of public intervention. No matter how salutary this warning might be, it is brought into question to the degree that the notion of a regional economic commons can be sustained. For low- and middle-income countries, moreover, and even in the absence of market failure, the magnitude of the problems they face allows them neither the luxury nor the time to wait for markets to take their course. In any case, in a globalising world, open markets and free trade bring considerable threat as well as opportunity to these countries. The economic history of countries like Germany, Japan or Singapore demonstrates that the bases of competitiveness can be consciously reconstructed to serve desired developmental goals. As List (1977, 1841) well understood, the imperative of an extra-market assist is all the more pressing in areas whose best hope otherwise is for no more than some merely Pareto-optimal outcome, such as being selected out by the law of comparative advantage as global reserves of low-wage agricultural or resource-extraction activities.

The concept of the regional economic commons points at once to a number of potentially fruitful policy levers in the search for increased competitiveness. The main purpose of these policy levers is to augment whatever agglomeration economies and growth potentialities may already be available in any given

region. That is, they are designed to work with what exists in the way of regional assets, not to conjure miracles out of thin air. We can identify five specific types of intervention corresponding to the five main sources of regional push as described earlier.

Networks and collaboration. In many less-developed parts of the world, local inter-firm transactional relations are often unreliable, costly in terms of their temporal extension, and unduly devoid of mutally useful information content. This is likely to be especially the case under conditions of proto-capitalist development, where firms, as noted, are frequently given to opportunistic behaviour. This state of affairs can often be ameliorated by collective efforts to put parallel social networks into place facilitating more effective and collaborative inter-firm interactions.

Labor training. This is invariably a major problem in less-developed countries, and effort needs continually to be invested in fashioning locally appropriate programmes. Given persistent inefficiencies in the circulation of information about local labour market opportunities, appropriate public upgrading of this process is also likely to be of benefit

Learning and innovation. The status of any region as a nexus of innovation and learning effects can usually be much improved by selective public expenditures on agglomeration-specific research and technology-enhancing activities. In less-developed areas, such expenditures should no doubt not be focused on fundamentals so much as on relatively simple services offering technological advice, and assistance with the solution of practical problems of local interest. Bellak and Cantwell (1998) have pointed out that foreign-owned branch plants can often be induced by appropriate policy measures to increase the flow of beneficial technological spillovers into the local industrial environment.

Institution-building. Many other kinds of institutional arrangements can help to cut through the intrinsic market failures and allocative inefficiencies of regional economies, especially in cases where small firms predominate. Some examples of such arrangements are marketing and export organisations, exhibitions and trade fairs, industry associations imposing fiduciary standards and fair practices, and so on. Institutions providing credit to micro-enterprises on favourable terms are likely to be particularly beneficial in less-developed areas, and have been identified as being of special importance in promoting entrepreneurship among women (Dignard & Havet, 1995).

Infrastructure and planning. Obviously, physical infrastructure and associated urban planning initiatives are critical. Effective planning is essential to deal with the diverse diseconomies that always make their appearance in large cities and that are especially severe in developing areas. If they are neglected by planning authorities, these diseconomies can greatly disrupt local economic performance. In addition, well equipped industrial parks, export processing zones and special economic districts with good access to a local labour supply can be magnets for

significant new investments, both foreign and domestic. Such facilities as these have provided the basis for the growth of major industrial clusters in a number of less-developed countries, with the island of Mauritius being one the most outstandingly successful recent examples (Bloom & Sachs, 1998; Roberts, 1992).

These specialised kinds of public action are often liable to work at cross-purposes with one another in the absence of a wider regional forum of governance and public dialogue. Hence some overall co-ordinating agency or development coalition, however rudimentary its structure, might provide a useful point of institutional convergence and debate. Agencies like this can also on occasions help to steer regions through critical decision nodes aligned along their path-dependent course of evolution. One example of positive public action in this regard concerns support for infant industries that promise significant gains in the future, but that would atrophy if left to themselves in the present (Lall, 1990; Lee, 1997). A broad regional co-ordinating agency might also play an important role in animating public debate on issues of development and growth, and beyond that, in the promotion of new forms of regional consciousness and identity (cf Gerschenkron, 1962). The ABC region in Brazil has recently sought to come to grips with an agenda of exactly this sort, and it has established an ambitious programme not only of economic transformation, but also of social and political mobilisation, including greatly increased democratisation of public decision making and municipal government (Conselho Deliberativa, 1999; see also Campbell, 2001).

Reprise: the region as a unit of collective order

The regional economy is definable as a collective entity in the precise sense that it is a domain of competitively advantageous externalities in which the destiny of each individual producer is intimately linked to the destiny of all. These externalities are not and never can be fully and finally co-ordinated by markets alone (cf Keating, 2001; Meyer-Stamer, 1997). By its nature, the regional economy is necessarily a social and political construction as much as it is an expression of market relations. By the same token, the point of development policy, as Amsden (1997) has remarked, is less to focus on the creation of well lubricated markets than it is to forge concrete competitive advantages.[7] This remark no doubt means taking markets seriously and working with their efficiency-seeking properties but, in the regional context, it also highlights the need for proactive measures to build the bases of the joint economic welfare and agglomeration economies. The point is all the more urgent in view of the intensified winds of competition set in motion by globalisation.

Globalisation, development and the regional economic mosaic

As the trend to globalisation continues to deepen, many commentators have expatiated on its expression not only as an ever-extending network of cross-border flows, but also as a far-flung mosaic of distinctive regional economies constituting the basic motors of the new world system (Amin & Thrift, 1992;

Ohmae, 1995; Scott, 1998; Storper, 1997). To be sure, globalisation in these senses has most intensely involved the Triad countries thus far, with the less-developed parts of the world essentially relegated to the sidelines (Castells, 1996). This state of affairs is rapidly changing, however. Over the 1980s and 1990s, a number of former Third World areas—large metropolitan areas in parts of Asia or Latin America, for example—have already acceded to the global mosaic of regional economies as more or less full-blown participants. Many other areas in low- and middle-income countries will unquestionably follow in their footsteps as push effects drive them forward along the pathway of development and growth.

In particular, as export-orientated industrialisation programmes have come to play an ever-larger role in national development, their success has at least in part been dependent on the existence of vibrant regional production systems offering a springboard of dense, concentrated competitive advantages. Concomitantly, and in combination with their low wage levels, a great many less-developed areas have succeeded over the past couple of decades in launching their products in global market niches, and then using this point of entry as a means of moving on towards higher-quality, higher-skill production. This is the route followed by the knitwear industry of Tiruppur, the surgical instruments industry of Sialkot, the Bangkok gem and jewellery industry, the shoe industry of the Sinos Valley, the electronics industry of Singapore and Taiwan, and hosts of other cases in low- and middle-income countries.

In spite of these optimistic comments, there are many areas in the spatial margins of contemporary capitalism where development and growth remain stubbornly elusive goals, and where even the most elementary forms of industrialisation are at best a distant prospect. In the new global order that is now emerging there can be no question, on both practical and moral grounds, of simply abandoning these left-behinds to their fate. If any meaningful notion of a global community is to be contemplated, greatly intensified programmes of aid to such areas will need to be put into place. At the same time, the resurgence of new regional economic and political forces in both the economically advanced and in the less-developed countries of the world, together with the actual and latent predicaments that they bring to the fore, suggests that some overarching structure of inter-regional co-ordination will become increasingly necessary. I have argued elsewhere (Scott, 1998) that one of the eventual tasks that an equitable form of globalisation will need to face is exactly this issue of the governance of inter-regional relations, and the point must be made with particular vigour given that the dynamics of development and growth, as described in the present paper, seem everywhere to be calling forth new forms of intra-regional political action and identity.

Notes

[1] The term ‘region’, it will be recalled, designates any sub-national level of spatial organisation with significant internal economic polarisation; the more specialized term ‘industrial district’ refers to any particularly dense geographic node of producers within a given region.

[2] In view of the argument developed *passim* in the present paper, the conclusions of Krugman and Young are somewhat unexpected. They suggest that Singapore has been a follower rather than an

initiator of technological and commercial innovations, and that it is deficient in entrepreneurial talent (the latter circumstance possibly having been aggravated by an overtly authoritarian social and political climate). That said, the Krugman/Young position is not inconsistent with the proposition that Singapore's productivity may be high relative to a static cross-section of other agglomerations.

[3] See Corbridge (1986) for an extended review and critique.

[4] 'An economy, to lift itself to higher income levels, must and will first develop within itself one or several regional centers of economic strength' (Hirschmann, 1958: 183). See also Perroux (1961).

[5] Landes (1998) provides an in-depth historical treatment of some of these issues.

[6] For critiques of this approach see Fishlow *et al* (1994) and Jomo (1997).

[7] Consider the comment of Schumpeter (1934: 64) to the effect that 'development in our sense is a distinct phenomenon, entirely foreign to what may be observed in … the tendency to equilibrium. It is spontaneous and discontinuous change … disturbance of equilibrium … which forever alters and displaces the equilibrium state previously existing.' Or Hirschman (1958: 5): 'Development depends not so much on finding the optimal combinations for given resources and factors of production as on calling forth and enlisting for development purposes resources and abilities that are hidden, scattered or badly utilized.'

References

Aero, A (1992) New pathways to industrialization in Tanzania: theoretical and strategic considerations, *IDS Bulletin*, 23 (3), pp 15–20.

Altenburg, T & Meyer-Stamer, J (1999) How to promote clusters: policy experiences from Latin America, *World Development*, 27, pp 1693–1713.

Amin, A & Robins, K (1990) Industrial districts and regional development: limits and possibilities, in: F Pyke, G Becattini & W Sengenberger (eds), *Industrial Districts and Inter-Firm Competition in Italy*, pp 185–219 (Geneva: International Institute for Labour Studies).

Amin, A & Thrift, NJ (1992) Neo-marshallian nodes in global networks, *International Journal of Urban and Regional Research*, 16, pp 571–581.

Amin, S (1973) *Le développement inégal; essai sur les formations sociales du capitalisme périphérique* (Paris: Les Éditions de minuit).

Amorim, MA (1994) Lessons on demand, *Technology Review*, January, pp 30–36.

Amsden, AH (1985) The division of labor is limited by the rate of growth of the market: the Taiwan machine-tool industry in the 1970s, *Cambridge Journal of Economics*, 9, pp 271–284.

Amsden, A (1989) *Asia's Next Giant: South Korea and Late Industrialization* (New York: Oxford University Press).

Amsden, A (1997) Bringing production back in—understanding government's economic role in late industrialization, *World Development*, 25, pp 469–480.

Amsden, A (2001) *The Rise of the Rest: Challenges to the West from Late-Industrializing Economies* (Oxford: Oxford University Press).

Armstrong, W & McGee, TG (1985) *Theatres of Accumulation: Studies in Asian and Latin American Urbanization* (London: Methuen).

Asheim, BT (2000) Industrial districts: the contributions of Marshall and beyond, in: G L. Clark, MP Feldman & MS Gertler (eds), *The Oxford Handbook of Economic Geography*, pp 413–431 (Oxford: Oxford University Press).

Balassa, BA (1981) *The Newly Industrializing Countries in the World Economy* (New York: Pergamon Press).

Bardhan, P (1995) The contributions of endogenous growth theory to the analysis of development problems: an assessment, in: J Behrman & TN Srinavasan (eds), *Handbook of Development Economics*, Vol 3 (Amsterdam: Elsevier).

Barro, R J (1997) *Determinants of Economic Growth: A Cross-Country Empirical Study* (Cambridge, MA: MIT Press).

Baud, ISA & de Bruijne, GA (eds) (1993) *Gender, Small-Scale Industry and Development Policy*, (London: IT Publications).

Becattini, G (1987) *Mercato e Forze locali: Il Distretto industriale* (Bologna: Il Mulino).

Becker, CM, Williamson, JG & Mills, ES (1992) *Indian Urbanization and Economic Growth since 1960* (Baltimore, MD: Johns Hopkins University Press).

Bell, M & Albu, M (1999) Knowledge systems and technological dynamism in industrial clusters in developing countries, *World Development*, 27, pp 1715–1734.

Bellak, C & Cantwell, J (1998) Globalization tendencies relevant for latecomers, in: M Storper, SB Thomadikis & LJ Tsipouri (eds), *Latecomers in the Global Economy*, pp 40–75 (London: Routledge).

Bloom, DE & Sachs, JD (1998) Geography, demography and growth in West Africa, *Brookings Papers*

on Economic Activity, 2, pp 207–295.
Boschma, RA & Lambooy, JG (1999) Evolutionary economics and economic geography, *Journal of Evolutionary Economics*, 9, pp 411–429.
Cadène, P (1998) Network specialists, industrial clusters and the integration of space in India, in: P Cadène & M Holmström (eds), *Decentralized Production in India: Industrial Districts, Flexible Specialization, and Employment*, pp 139–165 (New Delhi: Sage Publications).
Cadène, P & Holmström, M (eds) (1998) *Decentralized Production in India: Industrial Districts, Flexible Specialization, and Employment*. New Delhi, CA: Sage Publications).
Campbell, T (2001) Innovation and risk-taking: urban governance in Latin America, in: AJ Scott (ed), *Global City-Regions: Trends, Theory, Policy*, pp 214–236 (Oxford: Oxford University Press).
Cano, W (1998) *Desequilíbrios regionais e concentração industrial no Brasil, 1930–1995* (Campinas: Universidade Estadual de Campinas).
Carlino, GA (1979) Increasing returns to scale in metropolitan manufacturing, *Journal of Regional Science*, 19, pp 363–373.
Castells, M (1996) *The Rise of the Network Society* (Cambridge, MA: Blackwell).
Cawthorne, P (1993) The labour process under amoebic capitalism—a case study of the garment industry in a south Indian town, in: ISA Baud & GA de Bruijne (eds), *Gender, Small-Scale Industry and Development Policy*, pp 47–75 (London: Intermediate Technology Publications).
Cawthorne, P (1995) Of networks and markets: the rise and rise of a south Indian town: the example of Tiruppur's cotton knitwear industry, *World Development*, 23, pp 43–57.
Chakravorty, S (2000) How does structural reform affect regional development? Resolving contradictory theory with evidence from India, *Economic Geography*, 76, pp 367–394.
Chari, S (2000) The agrarian origins of the knitwear industrial cluster in Tiruppur, India, *World Development*, 28, pp 579–599.
Chen, Y (1996) Impact of regional factors on productivity in China, *Journal of Regional Science*, 36, pp 417–436.
Chiu, SWK & Lui, TL (1995) Hong Kong: unorganized industrialism, in: GL Clark & WB Kim (eds), *Asian NIEs and the Global Economy: Industrial Restructuirng and Corporate Strategy in the 1990s*, pp 85–112 (Baltimore, MD: Johns Hopkins University Press).
Christerson, B & Lever-Tracy, C (1997) The third China? Emerging industrial districts in rural China, *International Journal of Urban and Regional Research*, 21, pp 569–588.
Clague, C (1997) The new industrial economics and economic development, in: C Clague (ed), *Institutions and Economic Development: Growth and Governance in Less-Developed and Post-Socialist Societies*, pp 13–36 (Baltimore, MD: Johns Hopkins University Press).
Clark, GL & Kim, WB (1995) *Asian NIEs and the global economy: industrial restructuring and corporate strategy in the 1990s* (Baltimore, MD: Johns Hopkins University Press).
Conselho Deliberativa (1999) *6ª Reuniã Ordinária* (Santo André: Câmara Régional do Grande ABC).
Cooke, P & Morgan, K (1998) *The Associational Economy: Firms, Regions, and Innovation* (Oxford: Oxford University Press).
Corbridge, S (1986) *Capitalist World Development: a Critique of Radical Development Geography* (Basingstoke: Macmillan).
Dawson, J (1992) The relevance of the flexible specialisation paradigm for small-scale industrial restructuring in Ghana, *IDS Bulletin*, 23, pp 34–38.
Dignard, L & Havet, J (eds) (1995) *Women in Micro- and Small-Scale Enterprise Development* (Boulder, CO: Westview Press).
Douglass, M (2001) Intercity competition and the question of economic resilience: globalization and crisis in Asia, in: AJ Scott (ed), *Global City-Regions: Trends, Theory, Policy*, pp 236–262 (Oxford: Oxford University Press).
Esser, K Hillebrand, W Messner, D & Meyer-Stamer, J (1996) *Systemic Competitiveness: New Governance Patterns for Industrial Development* (London: Frank Cass).
Fishlow, A Gwin, C, Haggard, S, Rodrik, D, & Wade, R (1994) *Miracle or Design? Lessons from the East Asian Experience* (Washington, DC: Overseas Development Council).
Frank, AG (1978) *Dependent Accumulation and Underdevelopment* (London: Macmillan).
Fujita, M, Krugman, PR & Venables, A (1999) *The Spatial Economy: Cities, Regions and International Trade* (Cambridge, MA: MIT Press).
Gereffi, G (1995) Global production systems and third world development, in: B Stallings (ed), *Global Change, Regional Respons: The New International Context of Development*, pp 100–142 (Cambridge, MA: Cambridge University Press).
Gerschenkron, A (1962) *Economic Backwardness in Historical Perspective: A Book of Essays* (Cambridge, MA: Belknap Press).
Gertler, MS (1992) Flexibility revisited: districts, nation states, and the forces of production, *Transactions of the Institute of British Geographers*, 17, pp 259–278.

Grant, R (2001) Liberalization policies and foreign companies in Accra, Ghana, *Environment and Planning: A*, 33, pp 997–1014.
Harrison, B (1992) Industrial districts: old wine in new bottles?, *Regional studies*, 26, pp 469–483.
Henderson, JV (1986) Efficiency of resource usage and city size, *Journal of Urban Economics*, 19, pp 47–70.
Henderson, JV (1988) *Urban Development: Theory, Fact, and Illusion* (New York: Oxford University Press).
Henderson, JV & Juncoro, A (1996) Industrial centralization in Indonesia, *World Bank Economic Review*, 10, pp 513–540.
Henderson, JV, Shalizi, Z & Venables, AJ (2001) Geography and development, *Journal of Economic Geography*, 1, pp 81–105.
Henderson, JW (1989) *The Globalisation of High Technology Production: Society, Space, and Semiconductors in the Restructuring of the Modern world* (London: New York: Routledge).
Hirschman, AO (1958) *The Strategy of Economic Development* (New Haven, CT: Yale University Press).
Humphrey, J & Schmitz, H (2001) Governance in global value chains, *IDS Bulletin*, 32, pp 19–27.
Jacobs, J (1969) *The Economy of Cities* (New York: Random House).
Jomo, K S (1997) *Southeast Asia's Misunderstood Miracle: Industrial Policy and Economic Development in Thailand, Malaysia and Indonesia* (Boulder, CO: Westview Press).
Kaldor, N (1970) The case for regional policies, *Scottish Journal of Political Economy*, 17, pp 337–348.
Kattuman, PA (1998) The role of history in the transition to an industrial district: the case of the Indian bicycle industry, In P Cadène & M Holmström (eds), *Decentralized Production in India: Industrial Districts, Flexible Specialization, and Employment*, pp 230–250 (Thousand Oaks, CA: Sage Publications).
Kawashima, T (1975) Urban agglomeration economies in manufacturing industries, *Papers of the Regional Science Association*, 34, pp 157–175.
Keating, M (2001) Governing cities and regions: territorial restructuring in a global age, in: AJ Scott (ed), *Global City-Regions: Theory, Trends, Policy* (Oxford: Oxford University Press).
Knorringa, P (1996) *Economics of Collaboration: Indian Shoemakers between Market and Hierarchy* (Thousand Oaks, CA: Sage Publications).
Knorringa, P (1999) Agra: an old cluster facing new competition, *World Development*, 27, pp 1587–1604.
Krugman, P (1991) *Geography and Trade* (Leuven: Leuven University Press).
Krugman, P (1994) The myth of Asia's miracle, *Foreign Affairs*, November–December, pp 62–78.
Lal, D (1983) *The Poverty of 'Development Economics'* (London: Institute of Economic Affairs).
Lall, S (1980) Vertical inter-firm linkages in ldcs: an empirical study, *Oxford Bulletin of Economics and Statistics*, 42, pp 203–226.
Lall, S (1990) *Building Industrial Competitiveness in Developing Countries* (Paris: Development Centre of the OECD).
Lampard, EE (1955) The history of cities in economically advanced areas, *Economic Development and Cultural Change*, 3, pp 81–102.
Landes, D S (1998) *The Wealth and Poverty of Nations: Why Some are So Rich and Some so Poor* (New York: WW Norton).
Lau, L (1996) The sources of long-term economic growth: observations from the experience of developed and developing countries, in: R Landau, T Taylor & G Wright (eds), *The Mosaic of Economic Growth* (Stanford, CA: Stanford University Press).
Lawson, V (1995) Beyond the firm: restructuring gender divisions of labor in Quito's garment industry under austerity, *Environment and Planning: A*, 13, pp 415–444.
Lee, J (1997) The maturation and growth of infant industries, *World Development*, 25, pp 1271–1281.
Lee, YJ &d Zang, H (1998) Urbanization and regional productivity in Korean manufacturing, *Urban Studies*, 35, pp 2085–2099.
Levine, R & Renelt, D (1992) A sensitivity analysis of cross-country growth regressions, *American Economic Review*, 82, pp 942–963.
Lipietz, A (1985) *Mirages et miracles: problèmes de l'industrialisation dans le Tiers Monde* (Paris: Editions La Découverte).
Lipton, M (1977) *Why Poor People stay Poor: A Study of Urban Bias in World Development* (London: Temple Smith).
List, F (1977, 1841) *National System of Political Economy* (Fairfield, NJ: AM Kelley).
Little, IMD (1982) *Economic Development: Theory, Policy, and International Relations* (New York: Basic Books).
Lucas, RE (1988) On the mechanics of economic development, *Journal of Monetary Economics*, 22, pp 2–42.
Markusen, A (1996) Sticky places in slippery space: a typology of industrial districts, *Economic*

Geography, 72, pp 293–313.
Marshall, A (1890) *Principles of Economics* (London: Macmillan).
Marshall, A (1919) *Industry and Trade: A Study of Industrial Technique and Business Organization* (London: Macmillan).
McAleese, D & McDonald, D (1978) Employment growth and the development of linkages in foreign-owned and domestic manufacturing enterprises, *Oxford Bulletin of Statistics*, 40, pp 321–329.
McCormick, D (1999) African enterprise clusters and industrialisation: theory and reality, *World Development*, 27, pp 1531–1551.
Meyer-Stamer, J (1997) New patterns of governance for industrial change: perspectives for Brazil, *Journal of Development Studies*, 33, pp 364–391.
Meyer-Stamer, J (1998) Path dependence in regional development: persistence and change in three industrial clsuters in Santa Catarina, Brazil, *World Development*, 26, pp 1495–1511.
Mills, ES & Becker, CM (1986) *Studies in Indian Urban Development* (New York: Oxford University Press).
Mitra, A (2000) Total factor productivity growth and urbanization economies: a case of Indian industries, *Review of Urban and Regional Development Studies*, 12, 97–108.
Morshidi, S & Suriati, G (1999) *Globalisation of Economic Activity and Third World Cities: A Case Study of Kuala Lumpur* (Kuala Lumpur: Utusan Publications).
Murphy, KM, Schleifer, A & Vishny, RW (1989) Industrialization and the big push, *Journal of Political Economy*, pp 1003–1026.
Myrdal, G (1959) *Economic Theory and Under-Developed Regions* (London: Gerald Duckworth).
Nadvi, K (1999a) Shifting ties: social networks in the surgical instrument cluster of Sialkot, Pakistan *Development and Change*, 30, pp 141–175.
Nadvi, K (1999b) Collective efficiency and collective failure: the response of the Sialkot surgical instrument cluster to global quality pressures, *World Development*, 27, pp 1605–1626.
Nadvi, K & Schmitz, H (1994) *Industrial Clusters in Less Developed Countries: Review of Experiences and a Research Agenda*, Discussion Paper No 339 (Brighton: Institute of Development Studies).
Nelson, RR & Pack, H (1999) The Asian miracle and modern growth theory, *Economic Journal*, 109, pp 416–436.
North, DC (1995) The new institutional economics and third world development, in: J Harris, J Hunter & CM Lewis (eds), *The New Industrial Economics and Third World Development*, pp 17–26 (London: Routledge).
Ohmae, K (1995) *The End of the Nation State* (New York: Free Press).
Pederson, PO, Sverrisson, A & van Dijk, MP (1994) *Flexible Specialization: The Dynamics of Small-Scale Industries in the South* (London: Intermediate Technology Publications) pp vii, 174.
Peet, R (ed) (1980) *An introduction to Marxist theories of underdevelopment*, Research School of Pacific Studies, Department of Human Geography, Australian National University, Canberra.
Perroux, F (1961) *L'Economie du XXe siècle* (Paris: Presses Universitaires de France).
Pollard, S (1981) *Peaceful Conquest: The Industrialization of Europe, 1760–1970* (Oxford: Oxford University Press).
Porter, ME (1990) *The Competitive Advantage of Nations* (New York: Free Press).
Porter, ME (2001) Regions and the new economics of competition, in: AJ Scott (ed), *Global City Regions: Trends, Theory, Policy*, pp 139–157 (Oxford: Oxford University Press).
Porter, ME, Takeuchi, H & Sakakibara, M (2000) *Can Japan Compete*? (Cambridge, MA: Perseus Publishing).
Rabellotti, R (1999) Recovery of a Mexican cluster: devaluation bonanza or collective efficiency?, *World Development*, 27, pp 1571–1585.
Rabellotti, R & Schmitz, H (1999) The internal heterogeneity of industrial districts in Italy, Brazil, and Mexico, *Regional Studies*, 33, pp 97–108.
Rasiah, R (1994) Flexible production systems and local machine-tool subcontracting: electronics components transnationals in Malaysia, *Cambridge Journal of Economics*, 18, pp 279–298.
Renaud, B (1979) *National Urbanization Policies in Developing Countries* (Washington, DC: World Bank).
Richardson, HW (1980) Polarization reversal in developing countries, *Papers of the Regional Science Association*, 45, pp 67–85.
Richardson, HW (1993) Efficiency and welfare in ldc mega-cities, in: AM Parnell & JD Kasarda (eds), *Third World Cities: Problems, Policies and Prospects*, pp 32–57 (Newbury Park, CA: Sage Publications).
Roberts, MW (1992) *Export Processing Zones in Jamaica and Mauritius: Evolution of an Export-Oriented Development Model* (San Francisco, CA: Mellen Research University Press).
Rodríguez-Pose, A & J Tomaney (1999) Industrial crisis in the centre of the periphery: stabilisation, economic restructuring and policy responses in the São Paulo metropolitan region, *Urban Studies*, 36,

pp 329–343.
Rodrik, D (1999) *The New Global Economy and Developing Countries: Making Openness Work* (Washington, DC: Overseas Development Council).
Rodrik, D (2000) Development strategies for the next century, in: I Yamazawa (ed), *Developing Economies in the Twenty-First Century: The Challenges of Globalization*, pp 3–8 (Chiba: Institute of Developing Economies and Japan External Trade Organization.
Romer, P (1993) Idea gaps and object gaps in economic development, *Journal of Monetary Economics*, 32, pp 543–573.
Rosenstein-Rodan, PN (1943) Problems of industrialization of eastern and south-eastern Europe, *Economic Journal*, 53, pp 202–211.
Sachs, JD & Warner, AM (1997) Sources of slow growth in African economies, *Journal of African Economies*, 6, pp 335–376.
Salais, R, Chatel, E & Rivaud-Danset, D (1998) *Institutions et conventions: la réflexivité de l'action économique* (Paris: Editions de l'Ecole des Hautes Etudes en Sciences Sociales).
Sandee, H (1994) The impact of technological change on interfirm linkages: a case study of clustered rural small-scale roof tile enterprises in central Java,.in: PO Pederson, A Sverisson & MP van Dijk (eds), *Flexible Specialization: The Dynamics of Small-Scale Industry in the South*, pp 84–96 (London: Intermediate Technology Publications).
Saxenian, A (2000) Bangalore: the Silicon Valley of Asia?, unpublished manuscript, Department of City and Regional Planning, University of California, Berkeley.
Sayer, RA (1984) *Method in Social Science: A Realist Approach* (London: Hutchinson).
Schmitz, H (1995) Small shoemakers and fordist giants: tales of a supercluster, *World Development*, 23, pp 9–28.
Schmitz, H (1999a) Collective efficiency and increasing returns, *Cambridge Journal of Economics*, 23, pp 465–483.
Schmitz, H (1999b) From ascribed to earned trust in exporting clusters, *Journal of International Economics*, 48, pp 139–150.
Schmitz, H (2001) Local governance and conflict management: reflections on a Brazilian cluster, in: AJ Scott (ed), *Global City-Regions: Trends, Theory, Policy*, pp 401–406 (Oxford: Oxford University Press).
Schmitz, H & Musyck, B (1994) Industrial districts in Europe: policy lessons for developing countries?, *World Development*, 22, pp 889–910.
Schmitz, H & Nadvi, K (1999) Clustering and industrialization: introduction, *World Development*, 27, pp 1503–1514.
Schumpeter, JA (1934) *The Theory of Economic Development* (Cambridge, MA: Harvard University Press).
Scott, AJ (1983) Industrial organization and the logic of intra-metropolitan location: I. theoretical considerations, *Economic Geography*, 59, pp 233–250.
Scott, AJ (1987) The semiconductor industry in South-East Asia: organization, location and the international division of labor, *Regional Studies*, 21, pp 143–160.
Scott, AJ (1988) *New Industrial Spaces: Flexible Production Organization and Regional Development in North America and Western Europe* (London: Pion).
Scott, AJ (1994) Variations on the theme of agglomeration and growth: the gem and jewelry industry in Los Angeles and Bangkok, *Geoforum*, 25, pp 249–263.
Scott, AJ (1998) *Regions and the World Economy: The Coming Shape of Global Production, Competition, and Political Order* (Oxford: Oxford University Press).
Scott, AJ (2000) Global city-regions and the new world order, in: S Yusuf, W Wu & S Evenett (eds), *Local Dynamics in an Era of Globalization*, pp 84–91 (New York: Oxford University Press for the World Bank).
Scott, AJ (2001) Industrial revitalization in the ABC municipalities of São Paulo: diagnostic analysis and strategic recommendations for a new economy and a new regionalism, *Regional Development Studies*, 7, pp 1–32.
Shefer, D (1973) Localization economies in SMSAs: a production function analysis, *Journal of Regional Science*, 13, pp 55–64.
Shukla, V (1996) *Urbanization and Economic Growth* (Delhi: Oxford University Press).
Späth, B (ed) (1993) *Small Firms and Development in Latin America: the Role of the Institutional Environment, Human Resources, and Industrial Relations* (Geneva: International Institute for Labour Studies).
Storper, M (1984) Who benefits from industrial decentralization? Social power in the labour market, income distribution and spatial policy in Brazil, *Regional Studies*, 18, pp 143–164.
Storper, M (1997) *The Regional World: Territorial Development in a Global Economy* (New York: Guilford Press).

Storper, M, Thomadikis, S & Tsipouri, LJ (1998) Latecomers in the global economy (London: Routledge).

Stren, R (2001) Local governance and social diversity in the developing world: new challenges for globalizing city-regions, in: AJ Scott (ed), *Global City-Regions: Trends, Theory, Policy*, pp 193–213 (Oxford: Oxford University Press).

Sveikauskas, L (1975) The productivity of cities, *Quarterly Journal of Economics*, 89, pp 393–413.

Sverrison, A (1997) Enterprise network and technological change: aspects of light engineeing and metal working in Accra. In MP van Dijk & R Rabellotti (eds), *Enterprise Clusters and Networks in Developing Countries*, pp 169–190 (London: Frank Cass).

Talha, L (1995) Théorie de la régulation et développement, in: R Boyer & Y Saillard (eds), *Théorie de la régulation: l'état des savoirs*, pp 452–458 (Paris: Editions la Découverte).

Tewari, M (1999) Successful adjustment in Indian industry: the case of Ludhiana's woolen knitwear cluster, *World Development*, 27, pp 1651–1671.

Todaro, MP (1980) Urbanization in developing nations: trends, prospects and policies, *Journal of Geography*, 79, pp 164–174.

Townroe, PM & Keen, D (1984) Polarization reversal in the state of São Paulo, Brazil, *Regional Studies*, 18, pp 45–54.

van Dijk, MP (1997) Small enterprise associations and networks: evidence from Accra, in: MP van Dijk & R Rabellotti (eds), *Enterprise Clusters and Networks in Developing Countries*, pp 131–154 (London: Frank Cass).

van Dijk, MP & Rabellotti, R (1997) Clusters and networks as sources of cooperation and technology diffusion for small enterprises in developing countries, in: MP van Dijk & R Rabellotti (eds), *Enterprise Clusters and Networks in Developing Countries*, pp 1–10 (London: Frank Cass).

Villarán, F (1993) Small-scale industry efficiency groups in Peru, in: B Späth (ed), *Small-Scale Firms and Development in Latin America*, pp 158–195 (Geneva: International Institute for Labour Studies).

Visser, EJ (1999) A comparison of clustered and dispersed firms in the small-scale clothing industry of Lima, *World Development*, 27, pp 1553–1570.

Wade, R (1990) *Governing the Market: Economic Theory and the Role of Government in East Asian Industrialization* (Princeton, NJ: Princeton University Press).

Wheaton, WC & Shishido, H (1981) Urban concentration, agglomeration economies, and the level of economic development, *Economic Development and Cultural Change*, 30, pp 17–30.

World Bank (1993) *The East Asian Miracle: Economic Growth and Public Policy* (New York: Oxford University Press).

Young, A (1994) Lessons from the East Asian NICs: a contrarian view, *European Economic Review*, 38, pp 964–973.

Young, A (1995) The tyranny of numbers: confronting the statistical realities of the East Asian growth experience, *Quarterly Journal of Economics*, 110, pp 641–680.