

**CAPE TOWN'S COMPETITIVENESS AND
THE GLOBAL KNOWLEDGE ECONOMY:
A REVIEW OF RELEVANT LITERATURE***
2ND DRAFT: 12 March 2010

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* Dave Kaplan, Jeremy Marillier, Gordon Pirie, Shirley Robinson, Nigel Tapela, Ivan Turok, and Carol Wright provided comments on a first draft of this paper that hopefully improved rigour and clarity as well as relevance and intelligibility. Guilt by association does not apply – all errors and omissions are my responsibility.

1 Introduction^{*}

1.1 What story are we talking about?

This review lays the conceptual foundation for the development of a framework of urban competitiveness in the global knowledge economy and illustrates it with empirical examples from around the world. It engages at different spatial and temporal scales and makes use of several units of analysis. The competitiveness of a city can be told as the story of a small firm. Maybe this firm comes up with a brilliant idea that it manages to turn into a product or service for which there is large or rapidly growing – or ideally both – market demand in the global economy. This success allows the firm to employ more people and to increase its sourcing from local suppliers who, in turn, might also expand their workforce. As a result, more people end up with more money in their pockets that they can save or consume, both of which can have multiplier effects on the local economy.

The competitiveness of a city can also be told as the story of a global production network (GPN) in which a multinational corporation (MNC) organizes the value chain of a consumer good, drawing on suppliers that each have specific competitive assets and that are positioned in geographically distant locations around the globe. The particular city could play a role because it hosts the MNC headquarters and supplies it with advanced business services. Alternatively, it might act as a coordination centre for a particular region in the world. Or it could simply host a range of suppliers that contribute parts, components, systems or services to the value chain. The two stories may have the same actors; what changes is the focus and also the perspective, namely whether the topic is approached from the global down, or from the local up.

Urban competitiveness is not so much a state as a process. Cities that were once competitive might go into decline, while others that were not much on the map at all power ahead. Some of those in decline manage to reinvent themselves through a process of structural change and others remain locked into problematic trajectories. So change is paramount. City authorities must be part of the effort to adapt to change, facilitate its positive effects and mitigate its negative consequences. Also, while it is not exactly easy to explain the rise and decline of cities in economic history, it is obviously even more difficult to think about what might make cities competitive in the future. Therefore the temporal scale is important as well and it interacts in complex ways with the spatial dimension.

There are more stories to urban competitiveness. Efficient and superior infrastructure, the presence of markets for specialized skills, good kindergartens, and the ability to avoid diminishing returns due to congestion and environmental pressures distinguish competitive cities from those in which it takes forever to go from A to B on potholed roads and where red tape makes life hard for anyone trying to earn an honest living.

1.2 Competitiveness, innovation, and technology

In essence, a city's competitiveness depends on the strategies of firms and the conditions of the environment from which they pursue them. What matters is the congruence between the

^{*} Michael Gastrow, Feri Gwata, and Tendie Mugadza made important inputs to this overview. Luke Muller provided editorial assistance. The usual disclaimer applies.

two. Extremely capable firms might not succeed in an environment that is not conducive to their strategies, let alone one that actively hinders them. Conversely, an environment that supports entrepreneurial activities is no good unless there are entrepreneurs willing to take risks. Within this context it is clear that competitiveness is a complex phenomenon. Two competitive cities need not have the same attributes. One city over time may have changed what made it competitive in different periods of its development. And one city's competitiveness at a point in time is an aggregation of what makes individual firms, clusters, or sectors competitive which in turn is likely to vary with respect to their technological intensity, access to credit, global exposure, and so on.

It follows that not only firm strategies but also the weight of specific environmental factors conducive for success differ across firms and sectors. For example, an exporter of fresh fruit relies on an efficient port to ship produce to global destinations. A manufacturer of luxury catamarans must be able to rely on local suppliers of world-class fittings. A design agency needs fast internet connections to transmit large files to customers around the world. These three examples underline the importance of local assets: a well functioning port, a local supply chain able to produce customized parts and components, and available bandwidth. They also underline the importance of technology, knowledge and innovation, namely how to upgrade existing capabilities and lift them onto a higher trajectory.

This study encompasses both aspects. It further acknowledges that although technology, knowledge, and innovation have always been important for industrial development, the current infatuation with the “knowledge economy” – whose opposite, namely the “ignorance economy”, is obviously a non-term which suggests a degree of underspecification – presupposes that every productive process is or can be knowledge intensive and innovative. In reality, of course, the vast majority of economic activities are routine behaviour and mostly imitative, and this not only in developing economies. What both types of activities share is the importance of learning – firms that want to catch up need to absorb external knowledge to upgrade, while firms close to or at the frontier need to invest continuously in R&D, strategic relationships, and networks to stay ahead of the game.

Hence, if the concept of the knowledge economy is applied injudiciously – e.g. to a sector whose main challenge consists of improving its efficiency – there is a danger of missing the obvious, such as identifying tried-and-tested routines that have worked elsewhere and are acknowledged as good practice, and that are more about learning from successful examples rather than trying something new. In other words, it makes little sense to pay attention to higher-grade competences before bottlenecks in human capital lower down are addressed.

It is important to keep the complexity of the determinants of competitiveness in mind when consulting this literature review. In short, not all issues of competitiveness are best told as stories of knowledge and innovation. This does not mean that they do not matter, merely that they occasionally matter less than other issues at a particular point in time. However, the title of this study refers specifically to “Cape Town's future competitiveness in the global knowledge economy”. This clearly introduces a bias. The storyline the study is after is not so much of a, for example, senescent textile industry that regains competitiveness through improving labour productivity and hence its cost competitiveness, but of select textile and apparel firms that adopt and adapt relevant external knowledge to upgrade their production,

and that use knowledge to turn local advantages in design or other intangible assets into market success.

In sum, given the focus of this study, knowledge is a key part of the story. Does it diffuse, either between firms in the same or different industries or between firms and other actors, and are such flows limited to geographically proximate interactions or do they happen halfway round the globe? Are these flows intentional because otherwise competing firms realize that they can achieve their individual goals only through some form of cooperation, or are they merely the result of the impossibility for any firm to internalize all the gains from productivity increases?

1.3 Towards insights for policy

Finding answers to some of these questions requires adopting a systemic perspective in which innovative outcomes are determined by the nature and quality of interaction between firms and other actors both inside and outside of a geographic space. The relevant scale of this space – local, regional, national, or international – is both a theoretical issue, in the sense of at what level similarities prevail over differences in interactions so that meaningful patterns can be discerned, and a concern for practical policymaking because different levels of government have separate constitutional mandates and different capabilities to make and implement public policy. Although this study does not deny the existence of a *national* innovation system in South Africa, by design the focus is on the subnational – i.e. provincial and urban – dimension. Similarly, in comparing distinct regions in California and Massachusetts that are part of the US national system of innovation, Silicon Valley was more successful than the Boston region because of the respective *regional* innovation systems in which they were embedded (Saxenian 1994).

Other stories feature exogenous events or even shocks that may not have much to do with human agency at all. The trajectory of relatively similarly endowed cities may diverge because one becomes the host of a major event such as the Olympic Games. Hurricane Katrina evidently affected the competitiveness of New Orleans in adverse ways for years to come.

Cape Town's competitiveness lends itself to different narratives, too. One can showcase phenomenal achievements next to utter failures, both past and present. The issue is not so much the multiplicity of stories even though they highlight different things. Insofar as they talk about the same urban space in the global economy, they all matter. What is important is to interpret the city's development in the light of relevant theory. Experiences from elsewhere can also be relevant because different cities face some of the same problems, even though they may respond to them differently. This also means that "models" fashioned on the basis of how some other entity has been successful must be viewed with circumspection because "best practice" – other than in a very general sense – by definition abstracts from local circumstances and thus eschews contextualization. But exactly therein lies the challenge for appropriate policy advice, namely to learn from external insights, whether conceptual or empirical, and adapt them to an idiosyncratic local reality.

To this end, this overview first considers the role of knowledge in competitiveness and analyses how exactly technology is absorbed and exploited. Next it discusses the ways in which interacting with the global economy matters for local competitiveness. This leads to

an overview of the dynamics of competitiveness at the regional and city level. Throughout, relevant research questions are derived from the established body of knowledge. What they mean for policy is reflected upon, and it is made clear where inconclusive knowledge leads to dilemmas for policymakers whose room for action is much tighter than that in which scholarly debates evolve. Policy recommendations in support of competing in the knowledge economy are presented next. The concluding section raises questions some of which this study must address in the short term and others that city decision makers must address in the longer term.

Every study has its limits. The most obvious one is that it cannot ever cover everything although “everything somehow matters”. The chosen focus reflects not only the specific strengths and weaknesses of scientific fields, but also the selective expertise and professional bias of the author. In this case, the main cue was taken from the original tender document in order to select the most relevant concepts and introduce illustrative evidence. Care was taken to ensure that controversies in thinking about competitiveness are highlighted so as to warn against facile adoptions of so-called best practice, especially in the absence of a sound knowledge base about local economic, social, and institutional dynamics. However, the review does not discuss the relative merits of different methodologies used to arrive at (different) results because, while interesting for an academic audience, this is not primarily relevant for policy advice. Finally, the international evidence used in the review implies that policymakers in Cape Town can learn from experiences elsewhere. However, since knowledge transfer is rarely a simple and linear process, and since a discussion of how learning might best be organized is beyond the scope of this review, it is important to underline that this document is not a How-To manual.

2 Why are we concerned with technology?

Technology is a form of knowledge. It is concerned with the production and distribution of goods and services, and how to embed these processes in effective organizational forms. In the knowledge economy with a premium on ideas and intellectual capital, technology is therefore relatively more important than in an economy where growth results from (more) blood, (more) sweat, and (more) tears (OECD 1996).

2.1 Technology and growth

Half a century ago, the City of Cape Town would likely not have commissioned a study of its future competitiveness paying a lot of attention to technology. At that time, technology developed in the North was thought to be easily available to firms and countries in the South who could assimilate it costlessly. Of course, firms in the South had to pay for the technology most of which was embodied in machinery, but once in their hands they could immediately make productive use of it. The hypothesized inverse relationship between levels of productivity and rates of productivity growth then gave rise to catch-up optimism – over time income levels in developing countries would converge to those in advanced economies until everybody in whatever corner of the world enjoyed the standards of living characteristic of a town in America’s Mid-West. Influenced by the industrial revolution where it was mechanisation that changed the world, the focus was on capital accumulation: a worker aided by a machine tool is more productive than one swinging needle and thread. Technological progress, that is how to graduate from the use of a needle to computer

numerical controlled equipment, was the famous “residual” in no need of much explanation due to the quasi automatic assimilation of technology referred to above.

This view of the world came under fire on two fronts. The first was empirical work on the determinants of growth. It showed that factor growth (more hardware) accounted for much less of the outcome than the residual. In other words, economics had paid least attention to what mattered most, namely technology. The second was that the world, rather than witnessing the predicted convergence of income levels between developed and developing countries, had remained a place with few winners, many losers, and very few countries that managed to extricate themselves from underdevelopment and actually to catch up.

Economic historians had long insisted that technological upgrading and thus, catch-up, was not merely an issue of simple assimilation of widely and easily available knowledge. Gerschenkron (1962) pointed to “missing prerequisites” that might prevent catch-up in follower countries unless governments created suitable conditions for investment and learning. Abramovitz (1986) underlined the importance of social capabilities, including the presence of an educated and appropriately skilled workforce, for economic development. The success of the Asian tigers, much like the failure of their counterparts in Latin America during the 1970s and 1980s, was due to technological capabilities that needed to be conceived of, nurtured, and continuously developed (Lall 1992, Katz 1987). This underlines that when technology is merely a disembodied gadget, it does little or nothing for development. Likewise, importing a physical technology without having commanding the social technology required for its use, is not a fast track to development but more likely a waste of resources.

2.2 Technological capabilities and learning

As a key concept in development, technological capabilities spent much of the 1980s and 1990s on the backburner when “liberalisation” leading to “openness” was the mainstream recipe for running economies properly. Yet the real issue is not whether openness is superior to closedness. Trade liberalization will indeed on balance bring new technologies and goods that benefit the domestic economy. However, these may merely be one-off benefits. By contrast, sustained growth requires that skills be accumulated at a higher rate than before trade liberalization took effect so that the local labour force can actually implement the technologies now being made available (Keller 1996).

Technological learning is not an easy task for individual firms or larger systems. It is a process that strengthens capabilities for generating and managing technical change. With an increase in knowledge intensity, intangible resources such as intellectual property become more important. Tacit knowledge also matters which is why technology transfer is typically not a simple and quick affair. While expenditure on design, construction, and testing of prototype products and pilot process plants typically outweighs research spending, it is the fortuitous combination of activities of R&D labs, design offices and production engineering that facilitates systematic learning by doing. Differences in technical efficiency between firms and countries are partly related to different initial conditions but also to more or less highly developed technological competence which at the national level cannot be changed quickly (Bell and Pavitt 1993; for an application of this insight to Association of Southeast Asian Nations (ASEAN) countries, see Wang and Chien 2007).

There are also inter-industry differences. For example, in an analysis of the key determinants of exports of pharmaceuticals and electronics, Bhaduri and Ray (2004) found that simple production engineering capabilities increased exports in both sectors whereas pharmaceuticals in particular benefited from efficient reverse engineering processes. In addition, firm-level processes interact with policy variables and market structures. Figueiredo (2008) reports that the acceleration of industrial development in the context of structural reforms in an area in Northern Brazil relied prominently on efforts to promote intra-firm capability building efforts.

How much one can learn is related to how much one already knows. In the extreme case, since people and organizations that know nothing have no basis to build on, it is difficult for them to learn. The absorption of new knowledge therefore depends on the prior accumulation of knowledge, and thus on effort and organizational change and is anything but an automatic process. Learning consists of the ability to identify, assimilate, and exploit knowledge from the environment and differs from learning-by-doing. Its long-run costs may be substantial and consist of the development of a stock of prior knowledge that constitutes the firm's absorptive capacity. R&D promotes learning, and how much a firm invests in R&D depends on its incentives to learn which in turn is a function of how much relevant knowledge there is to assimilate, and how difficult that process is (Cohen and Levinthal 1989). It is important that not all people in an organization know only "the same things". This is because through learning by doing firms become more practiced in what they are already doing. Such routine behaviour does not contribute to the diversity critical to learning about or creating something relatively new.

In addition, there is a danger of dumbing down of remembering by doing when a focus on one class of activity diminishes the diversity of background a firm once may have possessed. Finally, when firms fail to grasp the value of new information, especially in fields where technical change is rapid, lockout may result. Therefore, when new knowledge is unrelated to a firm's existing knowledge base, absorptive capacities are not a by-product of routine activity but must be created. The decision to try and capture the sort of knowledge that would permit absorption of insights from new fields is obviously risky and one that not all firms will be in a position to undertake (Cohen and Levinthal 1990). The insight that this applies to MNC subsidiaries and not just to local firms, has led to nuances in the understanding of the existence and determinants of spill-overs. Whereas it was previously believed that knowledge is easily transferable from central MNC locations to their subsidiaries from which it subsequently spills over to local firms, presently the ability or otherwise of subsidiaries actually to absorb such knowledge is receiving more attention. This implies that the absence of spill-overs is not necessarily due to lack of demand by local firms but can also be a supply issue (Dantas, Giuliani, and Marin 2007).

2.3 Technology, innovation systems, and catch-up

It is generally agreed that firms are the major engines of technological change. How successfully they go about the business of upgrading depends on complementary assets (Teece et al. 1992). In the developing country context it is not well understood how firms actually manage to graduate to a level where they begin to produce close to the global technology frontier, or in other words how they develop embryonic strategic capabilities that

allow them to distinguish themselves competitively (Dutrénit 2004). What we do know is that such capabilities rely on linkages within the (national or regional) innovation system of which they are part, and the knowledge flows to which they give rise (Lundvall 1992, Nelson 1993). This is not because a firm can categorically not innovate by itself but because its innovative activities rely on the quality of inputs of resources, human capital, and certain public goods, as well as the efficiency with which they are provided.

Thus, comparative analyses of the relative importance of technological capabilities on the one hand and linkage capabilities on the other hand show that they jointly matter and that the quality of the innovation system influences firm-level capabilities. In the metropolitan regions of Bangkok, Penang, and Singapore, firms with higher technological capabilities were generally more innovative, but the higher quality of the innovation system in Singapore and Penang meant that overall innovation results exceeded those obtained in Bangkok, partly because it facilitated better linkages, including with the local subsidiaries of MNCs (Berger and Revilla Diez 2006; for a recent analysis of a Chinese textile company disputing this and emphasizing the importance of organisational culture and structure as well as human capital, see Liu, Baskaran and Li 2009). Hence capabilities are not just invested in firms but also, for example, in universities and other knowledge producers who play a role in the process of technological change and development (Liefner and Schiller 2008).

All of this means that technological learning requires an effort not all entities master. This is why catch-up is not a historical inevitability; falling behind is an equally plausible outcome (Verspagen 1991). For a comprehensive discussion of these issues, see Fagerberg, Srholec and Verspagen (2009). The import of this work is that it acknowledges that economic development is a complex process that largely eludes simple and time-invariant models. Capabilities needed for catch-up are historically contingent which means that Cape Town cannot necessarily copy the experience of cities that successfully pursued competitiveness under different circumstances and in different periods of time. It also underlines the dynamic nature of catch-up, implying the importance of continuous effort as opposed to a process with an end point at which, once reached, one can relax and enjoy past improvements (Bell and Pavitt 1993).

This puts a damper on arguments that just because new technologies such as mobile telephony or decentralised energy supply systems obviate the need to follow the exact same paths of industrialization pioneered in more advanced economies, Africa can somehow “leapfrog” to the front of the queue (e.g. Ford 2008; see Dinero et al. 2007 for an example from rural Alaska). In fact, especially in the resource-driven stage of development or its transition to more investment-driven growth, imitation productivity is key to reducing the technology gap. This requires the use of inexpensive labour and non-rivalrous ideas, and government may have to support the provision of labour inputs for imitation at appropriate skill levels (Tanaka 2006; see also Chen 2009, for an interesting discussion of the role of imitation and innovation in China’s large aircraft development). It underlines the challenges for city and regional authorities in economies with a high degree of economic diversity and different technological intensities. With activities spanning the entire gamut from imitation to innovation, a one-size-fits-all policy is inappropriate. At the same time interventions necessarily have opportunity costs, and acknowledging the diversity of technological competence in a particular location is only the first step in evaluating where public policy can make the greatest difference to growth and inclusiveness.

Finally, the body of work reviewed so far suggests that the importance of innovation for development is likely to rise over time, thus upping the ante on technological learning and upgrading (Fagerberg and Verspagen 2002). This in turn means that the present study is best viewed as the opening statement in an ongoing conversation, supported by research, about the determinants of longer-term competitiveness of Cape Town in response to changes in the global economy.

It also means that there is not just one capability. The concept encompasses the efficient operation and adaptation of plants, the establishment of new facilities, and the creation of new products or services, and thus reflects successively higher levels of what firms in their respective environments are capable of achieving (Kim 1997). At the national level, Lall (1992) distinguishes between capabilities as physical investment, human capital and technological effort. Physical investment is a basic capability without which industry cannot exist. Yet it is clearly not sufficient because in the absence of properly trained and skilled human capital it cannot be put to productive use. Likewise, smart people that sip cappuccino in a coffee bar instead of (also) engaging in technological effort have no impact on development. Hence co-evolution of physical investment, human capital and technological effort matters. Although one can think of *national* capabilities (e.g. Archibugi and Coco 2005), Cape Town's capabilities are clearly different from those of other cities in South Africa, even though national and firm-level capabilities interact (Goedhuys and Srholec 2009). In fact, they are also likely to differ across and even within sectors. This raises issues for policy about which more below.

2.4 Illustrative evidence

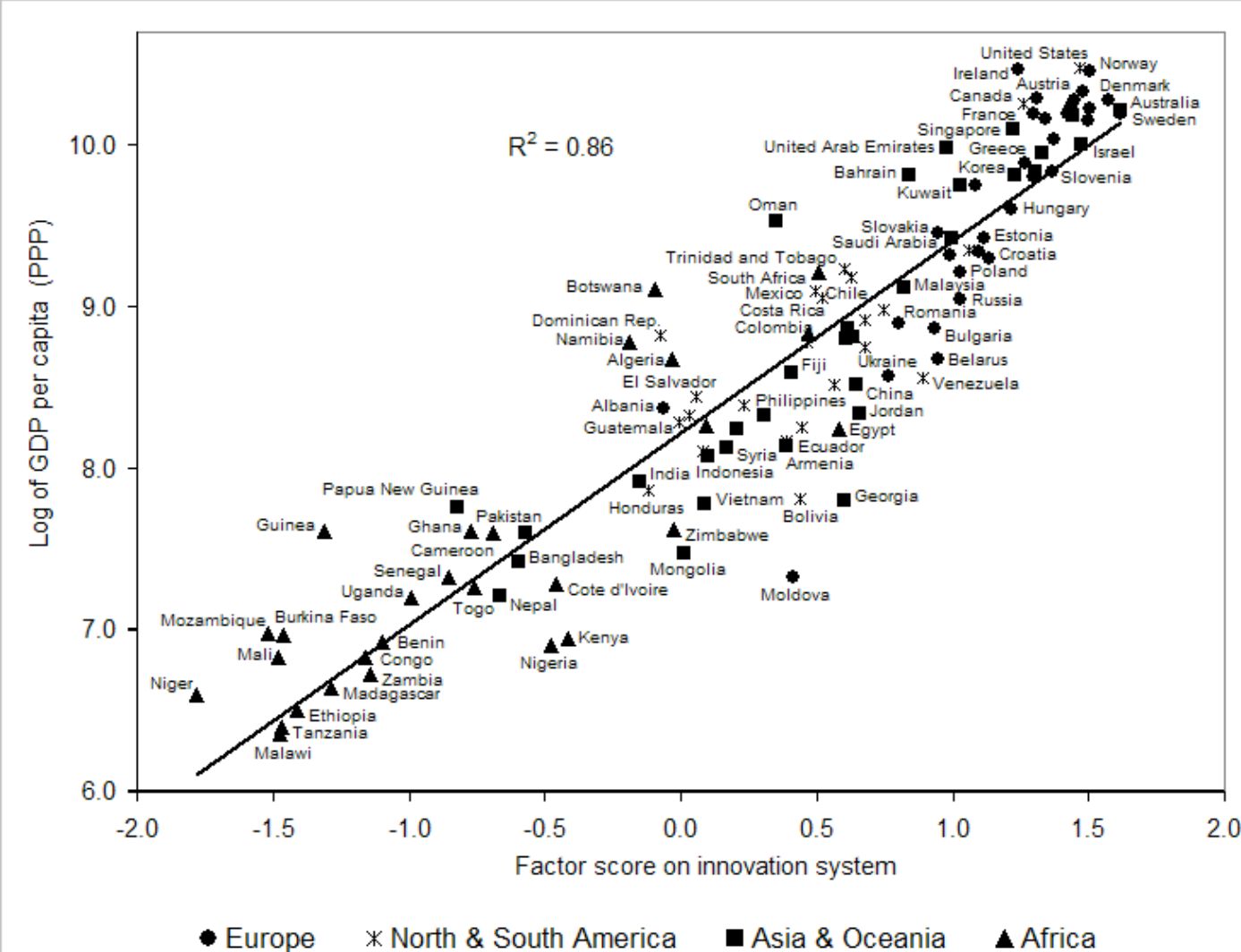
There is no doubt that innovation, technological and otherwise, matters for economic performance. Innovation surveys conducted in Europe for a decade and a half show a high correlation between per capita GDP and the share of innovative firms. Innovation surveys and the World Bank's Investment Climate Surveys in developing countries confirm that firms with high capabilities which make intensive use of external sources of knowledge and interact in the innovation system are more innovative (Fagerberg, Srholec, and Verspagen 2009). The difference between more and less developed countries is that more advanced firms pursue novelty through research and marketing capabilities whereas catch-up firms focus more on process upgrading which is often facilitated through MNCs (Knell and Srholec 2009). An empirical illustration of the importance of technological and social capabilities is provided in Figure 1, drawn from Fagerberg and Srholec (2008). Thus, significant predictors of per capita income include patents, scientific publications, ICT infrastructure, ISO 9000 certifications, access to finance, and education, which jointly represent capabilities intrinsic in an innovation system.

2.5 Issues to consider

If the quality of learning determines how successful a region engages with global knowledge, it is important to establish what capabilities for absorption and learning Cape Town possesses. This is likely to differ across sectors and activities. Some networks may be very good at stimulating learning and creating conducive conditions for upgrading, while others actively discourage change. Such activities are dynamic, thus rather than being good or bad

one must ask whether trends are positive or negative. And since even advanced activities must continuously be invested in to stay ahead, an important question is how existing capabilities can be fostered. Likewise, it is essential to ascertain whether new capabilities can be built as new technological opportunities emerge. Lastly, since public entities can never possibly address all possible or desirable issues, it is necessary to establish whether interventions in support of existing as opposed to new capabilities are complementary (for example in the context of backward or forward linkages) or trade-offs (for example, because the relevant public authority itself has limited capabilities).

The next section addresses how technological learning happens in relation to the global economy.



3 How does the global knowledge economy matter?

3.1 The role of external knowledge

By definition, the global pool of knowledge is deeper than any national pool. Therefore linking to external knowledge is important to any economy, but especially to those that are trying to catch up. Development requires outside technology although degrees of dependence on such outside knowledge vary both with levels of development and development strategies. Knowledge flows between advanced and developing countries also take different forms. In the last fifty years or so, some countries have passively relied on foreign skills and knowledge which has not augmented their capabilities much. Others have made strategic decisions about how to link external knowledge to local efforts of technology development that have led to successively more sophisticated capabilities. It obviously makes a difference whether the presence of external knowledge is limited to know-what or know-how or also extends to know-why (Lall 1992).

By the same token, local firms can occupy different positions in global production networks (GPNs); lower-tier suppliers basically compete on advantages such as cost, speed, and flexibility that are relatively easy to replicate elsewhere, higher-tier suppliers exploit proprietary assets and are thus much less vulnerable to being replaced in GPNs. It is also easier for them to internalize relevant knowledge which is why lower-tier suppliers will typically require support for learning and upgrading (Ernst and Kim 2001). Trajectories of local firms also depend on firm, sectoral and technological idiosyncracies. An important question here is the complexity, cumulateness, and appropriability of the relevant knowledge in influencing the path, speed, and direction of change (cf. Morrison, Pietrobelli and Rabellotti 2008).

The global knowledge economy, while bearing much promise for developing countries and regions, is unlikely ever to benefit every location on the planet. To some extent globalization has of course made it easier to make codified knowledge available where previously it was not, including in remote corners of the world. But this does not mean much if the potential recipients of such knowledge do not possess the relevant code nor have the capabilities to use it effectively. The more complex codes become, the higher the barriers to entry to knowledge-intensive activities. Also, in so far as tacit knowledge continues to play a role, with few exceptions the respective activities tend to remain in centralized locations of agglomerated competencies. Finally, the rise in the importance of knowledge-intensive activities has gone hand in hand with more restrictive intellectual property rights (IPR) regimes that make access for firms in poorer countries prohibitively expensive (Archibugi and Pietrobelli 2003).

3.2 Multinational firms, foreign direct investment (FDI), and local capabilities

Multinational corporations (MNCs) play an important role because they account for a large part of private R&D performed in the world, thus commanding and controlling intellectual assets in a wide variety of productive activities. In principle, such assets are accessible to developing countries through inward direct investment (IDI), imports (e.g. of capital equipment), and licensing. All these channels may be important, but which one is most important for which country or region at which point in time or what reason is not a given and instead requires careful analysis. While at low levels of development any FDI may be

welcome in that the host country has no alternative option of acquiring technology, the choice regarding the mode of technology becomes more important and indeed an option at higher levels. For example, when advanced knowledge is transferred merely as a result rather than as an innovative process that allows for learning, there may be a case for restricting internalized forms of technology transfer in favour of promoting local R&D based on other forms of R&D (Lall 1993).

More specifically, since licensing and joint ventures involve a relatively high degree of cooperation, there may be greater spill-overs, albeit of knowledge that is not at the frontier. The mere arrival of a MNC may also spur innovation through its effect on competition. The decision dilemma the MNC faces is that heightened competition from local firms leads to lower rents, while licensing – to the extent that it improves the local firm's R&D capabilities, may cause a greater loss of its proprietary knowledge. Conversely, local firms might have the strongest incentive for innovation if the MNC first licensed – thus allowing it to build its capabilities – and then switched to FDI both because it would better withstand the competition and be more likely to capture knowledge spill-overs (Pack and Saggi 1997).

What we do know is that some of the most impressive success stories of the last half century – Japan, Korea, Taiwan – did *not* primarily rely on foreign direct investment (FDI) but had national innovation systems promoting investments in human capital and enforcing competition among domestic firms (Mowery and Oxley 1995; see Rasiah 2004 for a more recent analysis also including Africa and Latin America). However, this does not diminish the role knowledge controlled by foreign MNCs played in their technological upgrading and economic development. For example, for the Taiwanese IT industry, the issue was its gradual integration into global production networks. Initially relying on local firms and networks only, it managed to establish a full range of operations becoming a distant follower in the industry. Combined with flexible specialization, it climbed up the value chain ladder and thus joined global networks (Chen and Chen 2001).

What definitely matters more than the quantity of FDI received, is its nature which in turn depends on the motivation of the MNC. That in itself is not static but tends to change in relation to capability formation in the host country (Narula and Dunning 2000, 2009). The key issue is the creation of linkages. MNCs obviously look for location advantages and tailor their investment to the existing capability levels and opportunities for backward linkages. *Ceteris paribus*, the less developed these are, the simpler the IDI will be, too. A recent analysis of the developmental impact of FDI in five Eastern European countries found that most MNCs are market-seeking and less interested in accessing local knowledge assets. But a majority of subsidiaries does engage in R&D and innovation which might yield spill-overs, perhaps more so than direct linkages between local scientific institutions and MNC subsidiaries which are few and far between (Günther, Jindra, and Stephan 2009). Yet unregulated FDI flows may lead to the decline of labour productivity growth in developing countries. This is because firm mobility in principle reduces the bargaining power of workers, and thus wages. To the extent that this forestalls the need for firms to raise productivity in defence of profits, low-wage-low-productivity traps may ensue (Seguino 2007).

An analysis of MNC involvement in advanced manufacturing industries in three cities each in Europe (Barcelona, Stockholm, Vienna) and Asia (Bangkok, Penang, Singapore) revealed

that investments in Europe were aimed at augmenting existing knowledge stock whereas those in Asia merely exploited them. Consequently, the majority of innovation was still being pursued in Europe (Diez and Berger 2005). Another way of putting this is that the larger the technology gap between local firms and MNCs, the bigger is the possibility that FDI crowds out domestic investment. Conversely, countries or regions with more established capabilities are in a better position to attract higher-value added operations and negotiate their terms of entry.

In the context of a city with a complicated economic history such as Cape Town, this may well mean that the co-existence of on average historically severely compromised human capital alongside world-class competences makes it difficult to fit the city neatly into any one phase of stage-based development models that attract successively higher value-added investments, because in fact there is a rationale for both resource-based or market-seeking next to strategic-asset seeking FDI. In other words, there are likely to be a few highly productive and skill-intensive activities that manifest themselves in a high degree of technological intensity, and many others that are the exact opposite (cf. Rasiah 2006). In order to interpret the import of this for practical policy in Cape Town, one has to assess which type of investments – and measures in support thereof – are likely to generate the highest social benefits. The fieldwork for this study will go some way toward answering this.

3.2.1 Empirical illustrations

Host countries have followed different strategies in the past and continue to do so in the present. Today the most pertinent distinction is between countries or regions that try to attract and embed MNC activity in the context of a strategic endeavour to upgrade local capabilities and others that leave upgrading to market forces. The former requires much more capable and sophisticated institutions to promote the internalisation of spillovers, but also bears more promise in terms of overcoming inevitable information and coordination failures (e.g. Narula and Bellak 2009 or Radosevic 1999 for a discussion focusing on Eastern Europe and Chandra 2006 for examples from Asia, Latin America, and Africa).

For example, Chudnovsky and Lopez (2003) found that firms in Latin America were more likely to learn from advanced environmental practices of MNCs if host countries had a policy framework in place not just to attract FDI but also to facilitate technology transfer. How well this worked out depended on a host of factors, including environmental regulations and their enforcement plus again the absorptive capacity of local firms. Carrillo (2004) warns of the limited influence of public policy over upgrading strategies but recounts an example of a successful corporate-led process of learning in a network created by Delphi in Mexico. In the South African context, the relevance of these observations is not so much in ascertaining that a developmental state (or province or city) can be a good thing, but in examining whether the requisites for its operation exist.

In OECD countries, differences in absorptive capacity account for differences in the productive effect of foreign knowledge – the smarter you are, the more you benefit (Kneller 2005). Firms in developing countries with limited R&D resources must therefore invest in internal technological learning after accessing external knowledge, much like Taiwanese manufacturers have done (Lin 2003). In other words, successively higher-quality FDI requires first to master lower-quality technology so that imitation is not innovation's poor

cousin, but a first step in the same direction (Glass and Saggi 1998). Thus the behaviour of inward FDI and a host economy's level of development is a co-evolutionary process, prominently determined by the consolidation of absorptive capacities (Álvarez and Marín 2009). For example, Liu and White (1997) found for 29 Chinese manufacturing industries that the most dynamic firms combined investments in their own R&D workforce with the acquisition of foreign technology. This is important especially when trying to reinforce network effects in favour of SMEs that are not directly linked to MNCs and their GPNs (Yeung, Weidong and Dicken 2006), a question of key importance to Cape Town's pursuit of inclusive competitiveness.

[O]nly in those sectors where 'specialised' location advantages associated with higher value adding exist can host countries benefit significantly from MNE activity in the long run. This requires a considerable amount of government interaction and investment into tangible and intangible infrastructure, and for which there is a certain threshold level of investment in building up absorptive capacities required for 'take-off'. As countries reach a threshold level of technological capabilities, governments need to provide more active support through macro-organizational policies. This implies developing and fostering specific industries and technological trajectories, such that the location advantages they offer are less 'generic' and more specific, highly immobile and such that they encourage mobile investments to be locked into these assets (Narula and Dunning 2009, 21).

In the absence of such strategies, what may happen is that MNCs simply pack up and leave once they find more attractive locations elsewhere – as happened to some extent to Southeast Asia during whose boom period in the 1980s and 1990s policymakers did *not* lay the foundation for a local innovation system that would keep foreign firms interested in staying instead of relocating to China in the current decade (Felker 2003). By contrast, large and strong clusters in Sweden acted as an important pull factor for inward asset-seeking FDI because MNCs were pursuing reverse technological integration. Hence the geographical context within which such MNCs are embedded is considered a key relational asset in the MNC's competitiveness. This, in turn, both reflects and affects the host region's competitiveness (Ivarsson 2002). Table 1 summarises relevant policy implications (see also Lall 1992).¹

3.2.2 Spill-overs

Although FDI attracts a lot of attention, the above discussion showed that it is intrinsically neither a good thing nor a bad thing for development. Much depends on whether spill-overs materialize. By definition, spill-overs accrue to the local economy when MNCs are unable to internalize the full value of productivity or efficiency benefits. This is why linkages, interactions, and knowledge flows matter because a MNC operating in splendid isolation is less likely to "lose" any useful knowledge. They can happen when local firms copy technology or become more efficient due to increased competition. Furthermore, through backward and forward linkages, spill-overs can manifest themselves in activities other than the one in which the MNC engages. In the UK for example, foreign-to-local managerial

¹ A similar table, making reference to specific private sector activities and public support measures, can be drawn up at the end of the study for Cape Town.

knowledge spill-overs were found within firms as well as within and across industries and even between regions, mostly through supply chains (Fu n.d.). Knowledge spill-overs are also associated with FDI undertaken by Japanese firms in the US, both from and to the investing firms (Branstetter 2006).

They are important because the technologies in question are not always available “off the shelf” which in itself may constitute a barrier to learning. But MNCs can be very successful at keeping the family jewels close to their chest. As a consequence, FDI may have a negative impact on supplier productivity, for example if the MNC diverts demand for domestic to imported inputs (Blomström and Kokko 1998). Also, a host economy with very low capabilities is less likely to benefit from very advanced FDI simply because potential spill-overs will not be realized (Görg and Greenaway 2002). This is not an issue one can address by simply mandating local-content requirements on the investor, quite apart from the fact that they might well violate WTO treaty obligations.

Econometric analyses published in the last thirty-odd years are essentially inconclusive with respect to the impact of spill-overs, including in developing and transition economies. They tend to be more significant in so-called low-tech industries where the technology gap between local and foreign firms is lower (see Fan 2002 for an overview). In short, sometimes they do have an impact, other times they do not. They reportedly do in Chinese manufacturing where the productivity of domestic firms rose as a result of their links with foreign-owned firms (Liu 2008). By contrast, in high-tech industries the principal channel for boosting the innovative performance of local firms was learning-by-exporting and -importing (Liu and Buck 2007). Similarly, Seck (2009) finds for a panel of 47 developing countries that imports were a more important channel of knowledge transfer than FDI (see also Franco and Subash 2009). What might be good news is that positive spill-overs have been more likely in recent periods. But they are also more likely to manifest themselves in Asia and Latin America which suggests that the interplay between local absorptive capacities and MNC strategies in Africa is more problematic in a perspective of upgrading (Montobbio and Sterzi 2009, Wooster and Diebel 2006).

Table 1 – Strategies for developing countries for the access and use of international know-how

Categories	Targets	Instruments
Exploitations of innovations generated elsewhere	Achieve lower foreign dependency	Promote collaboration between local and leading firms
	Increase learning relevant to local industry	Incentives to selected MNCs and to their learning-enhancing modes of operation
Interaction with MNC subsidiaries generating innovations	Enhance local technological capabilities	Provide incentives to location of innovative activities to foreign capital
	Benefit from local technological activities of MNCs	Upgrade S&T infrastructure Supply qualified workforce
	Disseminate MNC expertise locally	Associate MNC activities with hubs of specific knowledge and local firms
Global techno-scientific collaborations	Upgrade local scientific competence through foreign academic community	Exchange programmes Incentives to international projects Participation in international S&T organizations
	Apply knowledge to production	Promote university-industry linkages Develop infrastructures and programmes in support of techno-collaborations

Source: Archibugi and Pietrobelli (2003)

Empirically it is also not clear whether spill-overs are more or less likely to materialize depending on the size of the technology gap. On the one hand, since the cost of imitation is lower than the cost of innovation, a large gap opens up almost unlimited opportunities, thus conferring an advantage on initial backwardness. On the other hand, the same backwardness may be a manifestation of past poor learning and thus not bid well for future upgrading, regardless of its potentially relatively low cost. An analysis of the Chinese industrial sector showed that only above certain thresholds of local capabilities did spill-overs take place, thus suggesting that FDI in the presence of weak local capabilities was unlikely to have any transforming effect on the host economy (Lai et al. 2009).

The richest analyses of positive spill-overs are based on case studies. The East Asian electronics industry is a case in point (e.g. Hobday 1995, Kim 1997). The question that poses itself for Cape Town is whether and how global production networks (GPNs) in an informationally largely integrated world act as catalysts for knowledge diffusion with the attendant opportunities for upgrading of local firms. Hence it is important to understand the nature of the international dimension of such networks, especially the role of informal knowledge transfer not captured in FDI statistics and the like (Ernst and Kim 2001). The contention is not that global matters more than local – we know that GPNs co-exist with continuing agglomerations of some activities in certain places, and it is important to understand just why that is the case and, conversely, why agglomeration essentially eludes other places.

3.3 MNCs from the South

So far this review has focused on technology from North to South, or global to local. This reflects the technological preeminence of advanced economies. But increasingly MNCs of Southern origin have become active in the global economy. Initially their outward FDI went to economies at similar or lower levels of development, and only later explored market-seeking and asset-augmenting investments in more developed countries. This process was caused by globalization in the sense that liberalization opened up more and larger markets, including their home markets, while at the same time accelerated technological change raised the costs of innovation, design, and production. The presence in these markets is therefore necessary to deal with heightened competition and realize positive returns (Narula 2009).

The most important aspect of outward direct investment from developing regions is the opportunities for learning it occasions for the firms involved. Whereas in the case of inward direct investment, the relationship significant for spill-overs is the one between the foreign MNC subsidiary and local firms, in the case of ODI to more advanced economies the key relationship is between the overseas subsidiary and its parent in the South and, relatedly, between the latter and other local firms and actors. Since geographic distance by definition becomes more important, it is then more difficult to reverse-transfer knowledge, especially if it is tacit. And to the extent that Southern MNCs engage in outward FDI because they want to become less reliant on weak local innovation systems in the first place, those systems would be less receptive to external knowledge (Narula 2009). In other words, ODI will have benefits for the home economy only if the subsidiary's capabilities are such that it can absorb spill-overs in the (more advanced) host location; is part of an organization with the capability to internalize such spill-overs in the wider group; and if the MNC has backward or forward

linkages in the home country. In conclusion, therefore, the key dimension is the location advantages of the home country in conjunction with the strength of local firm capabilities.

3.4 Global innovation networks

A related change concerns the emergence of global innovation networks (GINs). Due to shortened product life cycles and the rising risk and cost of innovation, globally active firms are increasingly internationalizing knowledge-intensive activities in contexts of more “open innovation” – e.g. involving actors other than firms – and they have recently begun doing so also in a few developing economies and regions. This has led to R&D offshoring and outsourcing (Howells 2008). The implication is not that a truly global knowledge economy is all of a sudden in the offing, and the relative openness of such networks depends in fact on industry characteristics, firm strategy, and the role of the specific technology. What it does mean, however, is that holding on to one’s core competence may run counter to the speed and the cost with which more open networks can generate new solutions (OECD 2008).

This has implications for developing countries and regions. In 2006 global R&D amounted to just under \$1 trillion, and this figure is likely to grow relatively and absolutely. The world’s largest 700 R&D spending MNCs accounted for almost one half of total global R&D in 2002. If even only a fraction of that were invested in Cape Town, it could have enormous effects in terms of providing challenging jobs to highly skilled experts, creating new skills, exchanging new knowledge, generating spill-overs and making technological upgrading more dynamic. Until not so long ago such investments tended to concentrate on adaptation to meet local demand. More recently some locations have emerged as proper nodes in their own right in these GINs. This trend is likely to grow, although it may remain a phenomenon concentrated on rather few locations in the South. The chances of a region to get involved in such networks depends even more than for other FDI on created rather than natural assets which underlines the important role of policy. Key is the right kind of high-level human capital, not only at competitive cost but also in rather large numbers. MNCs are less likely to be interested only in a few star scientists but also in sizeable populations of highly-skilled engineers and scientists that reside in developing regions (Lewin, Massini, and Peeters 2008). This in itself is not a recommendation for massification of higher education because what matters is of course the quality of the resulting graduates (UNCTAD 2005).

For example, an analysis of Canadian health biotechnology firms revealed that accessing knowledge from their developing-country partners was the third most important reason for collaboration. Such partnerships are widespread and have a relatively strong focus on R&D activities with bidirectional knowledge flows (Ray et al. 2009). Benefits from these kind of collaborations perhaps accrue most likely to host regions when they combine capabilities in manufacturing, testing, and research.² Life science firms can reportedly realize savings of up to 40 per cent in developing regions through lower infrastructure and human capital costs and through faster recruitment of patients for clinical trials. Examples of drugs developed under such conditions include Novartis’ fixed-dose combination therapy for Malaria which

² This means that regions that only do the “thinking” and not also some of the “making” possibly forego development potential. In Cape Town’s context, this has relevance for, e.g., life science research without a concomitant strong pharmaceuticals or biotechnology industry.

was developed jointly with Chinese firms, and Ranbaxy's partnership with Bayer on the antibiotic Ciproflaxin (Deloitte 2008).

3.5 Issues to consider

It is almost trivial to point out that the relationship with the global economy and especially with MNCs matters greatly for Cape Town's future competitiveness. The more relevant question concerns the exact nature of these linkages. It is important to understand the knowledge being transferred or shared (or lost or stolen), and who benefits from these processes. What one clearly wants to avoid is a situation in which the absorption of knowledge that can be productively used is stymied either because investor motives clash with local interests or because of a high level of incongruence between local capabilities and the technological demands of external knowledge. In addition, it is important to realize that the market will not see to it that benefits from the inclusion into international knowledge flows be shared as widely as possible in the host economy, through backward or forward linkages, to facilitate more inclusive growth as opposed to a further distancing between dynamic and traditional activities. Finally, since competitiveness is not a state but a process, it is always important to consider whether and how existing linkages can be deepened or intensified or new ones opened up, for otherwise the host economy may over time lock itself into undesirable positions in global value chains.

Although this section addresses global issues, it again underlined the importance of local assets. The following section discusses how such assets are developed in regional and urban economies.

4 City and region competitiveness – what does it mean?

4.1 Theory and some stylized facts

What makes cities grow? The older literature suggests that cities come about in order to reduce transport costs between suppliers and customers. Hence, density is related to growth which in itself is an important counterpoint to spatial patterns shaped by apartheid. But newer literature emphasizes what Alfred Marshall had claimed a long time ago, namely that cities are about ideas. They are viewed as “informational entities that exist to speed the flow of learning and knowledge (Glaeser 2000, 84; for a critique of the concept, see Sokol, van Egeraat, and Williams 2008).

This underlines the importance of human capital. Initial skill levels predict later growth and this relationship holds for long periods of time (Simon and Nardinelli 1996). Hence high skilled people in high skilled industries tend to produce more ideas that eventually translate into higher growth. Skills evidently also have externalities in the sense that higher skills may (but need not) exert an upward pull on lower skills. This is not only good news for Cape Town because it suggests that there is a certain path dependence which makes it difficult neatly to separate the city's presence from its past, when political authority mandated a ceiling on skills for the majority of the population.

Theoretically cities may grow because entrepreneurs combine ideas of different vintage and origin. In this perspective, more diversity will thus lead to more growth. For example, in an analysis of innovation in US cities, Audretsch and Feldman (1999) found that different but

complementary industries sharing a common science base tended to co-locate and were more innovative than firms pursuing the same activities. Alternatively, there could be a premium on specialization especially if the usefulness of ideas is limited to selected applications in one industry. Empirical verifications of the relative roles of diversity and specialization give results contingent on time periods, industry, and technology (cf. Glaeser 2000). Some argue that, because intra-industry spill-overs are more prevalent than inter-industry spill-overs, specialised local production structures favour innovative activity. For R&D-intensive and small firms, knowledge spill-overs have limited geographical reach which is why proximity matters (e.g. van der Panne 2004). Similarly, in Taiwan's ICT industry knowledge spill-overs were facilitated by local specialization: technical and research staff, equipped with similar knowledge and research backgrounds, engaged in imitation, spying, reverse engineering, and the movement of skilled labour all of which helped to break down technological barriers. This way key ideas were adopted relatively easily and rapidly, leading to technological improvements, all in an environment of ruthless local competition (Chen 2007).

Others contend that innovative activity is influenced by both specialisation and diversity externalities, but diversity is more important than specialisation. In metropolitan areas, where of course much innovation is concentrated, innovation is on average a result of diversity spill-overs. But high-tech innovations in high-density regions depend exclusively on diversity externalities because they depend on inputs from many different actors. Hence the import of diversity increases with the technological intensity of an industrial activity. In turn, for sectors with lower technological intensities, specialisation externalities remain important and their impact on innovation increases with decreasing technological intensities (Greunz 2004, see also Lim 2004). Some research suggests that this is related to levels of development whereby initial specialization (because you only know one thing) gives rise to diversity (because you learn about more things) and then again to specialization (because you become a leader in one thing).

The research reviewed here is rather more nuanced than simply to state that specialization externalities are more important than diversity externalities or vice versa. At a pragmatic level, what can be concluded from this work is that policymakers should certainly not discourage diversity or encourage too much specialization. Diversified economies may not be world leader in any one activity, but they are likely to adapt better to change in the aggregate. In addition, as the OECD (2008) pointed out, a truly inclusive regional economy would likely see the emergence of new activities, for example from the informal sector, that increase existing diversity further.

Of course cities provide more or less conducive environments for entrepreneurs to go about their business. What's important is local competition without which there is little incentive for new ideas. Public policy also matters in another important way. Studies from advanced countries show that both the size of government and the extent of its redistributive policies are inimical to population growth – first the poor move in and then the rich move out which due to its effects on fiscal resources obviates the need for more poor to arrive (Rappaport 1998 cited in Glaeser 2000). Cities may also grow because they are favoured by their regional

or national environment. In this light, if Cape Town were to lose parliament, by itself this would probably exert a negative effect on urban growth.³

As for countries, an interesting issue is whether city growth within or across countries is likely to converge. Size does not seem to matter much; “bigger” isn’t necessarily worse than “big” provided diseconomies from congestion are successfully managed. In addition, there is overall little evidence that yesterday’s high income levels are associated with today’s lower growth. Some cities have been ahead of others for a long time and are likely to keep up the distance. This is either because of inertia – people are slow to respond to reversals of fortune in areas where they live – or because a few cities are systematically more creative and able to exploit this commercially.

4.2 Location and innovation

Another key relationship is between location and innovation. One can ask the relevant question in two different ways. The first is what determines innovation in a specific location (e.g. Cape Town), essentially looking at knowledge spill-overs. The second is the relative significance of innovation compared to other factors when comparing the relative performance of different locations (e.g. Cape Town vs Johannesburg or Barcelona; see Feldman 2000 for a summary of relevant literature).

Knowledge spill-overs can materialize because firms learn from other firms in cognate technological fields. Empirical research tends to show that such spill-overs are indeed geographically limited. A region in which new ideas are created tends to give rise to more learning than in areas outside of it, and this is also why there is more innovation. Therefore the concentration of new knowledge has a bearing on the location of production, and hence on growth. More specifically, activities in which interaction is especially important, such as those where R&D and human capital matter strongly, tend to cluster more than those where relationships are more at arms’ length. So patents tend to cite those patents more frequently that originate in the same location. But this is time-variant – knowledge becomes less geographically concentrated as it diffuses. Scientific fields also condition spill-overs due to the differential rate of obsolescence of new ideas (Feldman 2000).

New ideas depend of course crucially on people. Intensely science-based industries depend on star scientists whose knowledge externalities tend to materialize mostly in the region where they reside which is another reason why those regions tend to grow faster. A key question in this regard concerns the degree to which growth is associated with key individuals or average human capital. If the former is important for company start-ups and the latter for keeping such activities home-bound in a broader sense, then Cape Town’s dualism of world-class talent next to massive underachievement across all levels of education might mean that the immediate key to its future competitiveness lies not so much in shooting for the stars, but in getting the basics right. In other words, if Cape marketed itself as a preferred destination for mobile knowledge workers from across the world but failed to address the education and skills crisis that affects it along with the rest of the country, it

³ The aggregate effect would of course depend on what the City, developers and other interested parties make of the opportunity to re-develop the parliamentary precinct.

might sprout ambitious but isolated instances of very advanced activities that do not translate into more labour-absorptive growth.⁴

When comparing performance across cities, agglomeration economies are usually differentiated into localization economies and urbanization economies. Localisation economies are present when a firm benefits from industry (e.g. network) effects within a geographically confined space. This first concept is much more attuned to the idea of a knowledge-based economy. For example, a cluster can provide industry-specific complementary assets that allow its members to increase innovative activity. This may be particularly relevant to small firms which generate much innovation and which compensate for the disadvantage of small size through operating in an area where they can tap into complementary, external resources and thus indirectly reap economies of scale and scope. Urbanisation economies capture the idea that the most fundamental reason for the existence of cities is increasing returns to scale – it is easier to do business in a metropole than in the middle of nowhere.

4.2.1 Empirical illustrations

In empirical research, the evidence in favour of one or the other type of agglomeration economies is mixed and essentially inconclusive (Feldman 2000; see also Turok 2004). For example, Simmie (2004) took issue with Porter's (2003) contention that the strength of clusters matters for regional economic performance and disputed that this was indeed the case in the UK. In his view, empirical studies of high-tech and innovative firms do not support the claim that multiple and strong local linkages contribute significantly to innovative activities. National and international linkages prevail over regional and local ones, partly because the main markets of innovative firms lie outside cities and regions. Hence, the idea that local buyers' perceptions matter is not convincing. In addition, IPR concerns prevent firms from sharing knowledge. On the input side, the most highly rated external sources of knowledge, such as standards and regulations, are not spatialised at all. Finally, most innovators do not have external linkages (for example, with universities) and those that do, prefer national or international collaborators over regional and local ones. In sum, innovation does not depend on localized cluster dynamics but more on what goes in an internationally distributed system of innovation.

Of course, what Simmie (2004) is describing here may be a feature peculiar to UK capitalism rather than a more general phenomenon. But elsewhere (Simmie 2005) he lamented the shortcomings of the relevant literature more generally for answering the question why innovation tends to be concentrated in space. In Canada, clusters reportedly managed the transition to more knowledge-intensive production also not because of spatial proximity and direct, non-market interaction and knowledge sharing; instead, a lot of inputs came from outside the region (Wolfe and Gertler 2004). Martin and Sunley (2003) criticize that clusters

⁴ People often refer to the Western Cape's relatively good educational achievements. The key point here is that matric pass rates and other indicators are compared to the rest of the country which has consistently been coming in at the bottom end of international comparisons of educational achievement. Cross-provincial comparisons are pretty irrelevant when discussing global competitiveness where standards are set by schools in Eastern Europe or East Asia and not the Eastern Cape.

are an undertheorised and underspecified concept with dubious empirical credentials that particularly for public policy should carry a health warning.

But Capello (2002) showed that relational capital plays a positive (though decreasing) role in product innovation by small firms and in specialized sectors of the urban economy. At a regional level, the contributions in Hilpert (2003) also find that innovation tends to happen where there was previously related activity. Capabilities in science and research, inter-firm linkages, and the institutional context make a difference, suggesting that location economies do matter. In an analysis of the emergence of biotechnology in the Valencia region of Spain, Todt et al. (2007) report that unlocking the area's potential implies creating incentives for durable ties between key, including external actors; for entrepreneurial activities by students and researchers; and for the creation of science-based firms. Yet a survey in Southern Italy revealed that public innovation support had no positive impact on firm competitiveness whatsoever (Poti and Basile 2000). Other research finds that sectoral differences play a role and that medium-tech sectors contribute more to the knowledge base of an economy than high-tech sectors (Leydesdorff, Dolfsma, Van der Panne 2006). For an analysis of linkages in a sample of close to 9,000 firms in 11 different European regions, see Sternberg (2000).

In an analysis of regional innovation activity in French manufacturing, Rondé and Hussler (2005) found that the web of relationships between actors within a spatially limited location is important for innovation. Diversity is important in that the knowledge of related industries has a stronger impact on innovation than intra-industry knowledge across two adjacent regions. Nonetheless, "the rate of a growth of a region appears not to be independent of that of its neighbours" (Cheshire and Malecki 2004, 262).

Regarding Cape Town and the Western Cape, the OECD Territorial Review (2008, 159) went as far as to say that the interconnected industrial base could only exploit its full potential if authorities abandoned vertical interventions to support specific sectors in favour of unspecialized collective goods that would help strengthen not just supply chains but also horizontal links between firms. Localisation economies would then be made up of the learning processes that are of relevance to entire networks of firms.

The character of knowledge that is being exchanged among firms and other actors has a bearing on how these things play out. When knowledge is easily codifiable, firms can engage in knowledge exchange via email half way round the world. But if it is tacit and less clearly articulated, geographic proximity becomes more important. How knowledge spill-overs exactly materialize is not exactly known and the widespread enthusiasm for *local-is-lekker* in the policy world is not yet reflected in an agreement as to its determinants.

The consensus is that knowledge spillovers are geographically bounded within a limited space over which interaction and communication is [sic] facilitated, search intensity is increased, and task coordination is enhanced. ... In addition, there is also a literature that documents the importance of social interaction, local networks, and personal communication in knowledge transmission, but we do not know how social interaction is initiated, how it evolves into a working relationship, and how economically useful knowledge is created (Feldman 2000, 389).

The co-existence of increasingly global and more local innovation networks is not contradictory. Where the costs and the speed of technological change are relatively contained, innovation can be an intensely localized phenomenon, provided sufficient local capabilities and other requisite resources are in place. But especially in highly diversified economies such as Cape Town's, it is a given that both will play a role and that policy must therefore be geared to accommodate activities in local and global networks.

4.3 City competitiveness in context

Of course, cities are heterogeneous entities. A few world or global cities or city-regions are viewed as command-and-coordination centres of the global economy, hosting the headquarters of MNCs, advanced business services, and knowledge production. The rise in their importance is proportionate to the alleged declining capability of nation states to deal with globalization effectively (Scott 2001; for a critique of ill-conceived urban strategies to pursue global competitiveness or mindless benchmarking exercises, see Doel and Hubbard 2002 and Greene, Tracey, and Cowling 2007, respectively). Other cities play a more regional role. What is important is that the issues referred to above manifest themselves differently in different locations as well as over time.

In Europe, capital cities are richer and have grown faster than other cities due to government-driven agglomeration. History matters in that capitals in Northern countries which industrialised earlier and more rapidly than those in the South preserved higher per-capita income levels throughout the post-war period. The economic performance of some cities became relatively de-linked from their respective national economies. Rather than systemic, such phenomena were context-specific. For example, Rotterdam grew because of the role of its port in world trade,⁵ and Athens, Madrid and Lisbon grew after the Southern enlargement of the EU which attracted capital and opened new markets for these cities. More centrally located cities – i.e. those closer to concentrated productive activities and trade – also tended to have higher growth rates than those on the periphery. Until the fall of the wall, Berlin was a poor performer due to its isolation, and Vienna because of the stagnant and not easily accessible markets to the East (Lever 1999).

A historical comparison of the local innovation networks of Oxfordshire, Stuttgart, and Toulouse showed that initially more centralized, dirigiste governance systems changed to more network- and market-based forms of coordination, leading to different adaptive capacity and economic performance (Simmie et al. 2004). Similarly, nationally designed and implemented regional innovation support systems such as in South Korea are less capable of adapting to regional specificities and the associated strong vertical dependencies create horizontal policy coordination problems. By contrast, innovation policy in Germany is more bottom-up, with Japan somewhere in between the two. The different set-ups have consequences for the impact of policy on regional economic development (Hassink 2002).

A cross-sectional analysis of three global (Amsterdam, London, Paris) and two regional (Milan, Stuttgart) cities demonstrated the different ways in which agglomeration economies played out. In the global cities, supplier and customers were essentially international and rarely co-located, implying that firms primarily exploited urbanization economies. By

⁵ Sitting astride global trade routes is of course an advantage Cape Town shares.

contrast, in the regional capitals, firms reported intense interaction with suppliers and customers located nearby, giving rise to localisation economies. In some sense, therefore, localisation economies compensate for the relatively weaker urban economies obtained in regional as opposed to global centres. What both types of cities have in common is the presence of professional and skilled labour, the availability of good housing, schools, leisure facilities, and public services which can be regarded as a *sine qua non* of urban development. By contrast, the importance of informal social networks to innovation, while low overall, was lower in regional than in global cities (Simmie et al. 2002, Simmie 2002; for a similar analysis, see also Sternberg 2000).

But it might be possible to overcome the bane of peripheral locations. In an analysis of Tel Aviv, Belfast, and Cardiff, Cooke et al. (2002) find that policy-supported linkages between producers and users of knowledge can generate innovation even in locations not traditionally seen as knowledge hubs. What matters most is the availability of venture capital and a general context of public innovation support in these cities, linking generators and exploiters of knowledge through low-cost networking and high knowledge spillovers. This work refutes geographical determinism according to which developmental methodologies are unique to places and cannot be transferred or learned (see also Yue 2006). Illustrations from cities as diverse as Bilbao, Curitiba, and Seattle show that city learning takes different forms. All cities valued information and knowledge and took initiative to obtain them. Bilbao focused on complex organizational arrangements with a large variety of stakeholders incorporated into a formal structure that accommodates deliberation, decision-making and implementation. Curitiba's learning took place through interactions between smaller groups of technical staff. Learning in Seattle was supported by intense but informal interactions between public, private and civic groups. In each case flagship organizations play a role in keeping track of events, documenting findings, and building a database. There is strong internal interaction among technical and professional staff. Proactive cities have excelled at building systemic relationships between civil society, business, and the city bureaucracy. Other common features include the continuity of policy and political commitment. These allow the creation of reservoirs of knowledge and learning that are continuously available to city decision-makers and other stakeholders (Campbell 2009; see also Cooke 2004).

4.4 Competitiveness and exclusion

Not everything that advances the competitiveness of cities will also benefit marginalized residents. Place prosperity does not automatically equate to people prosperity (see Butler 1999 for a discussion of equity issues in the urban context). While urban mega-projects in New York (Atlantic Yards, Brooklyn), London (Stratford City and Thames Gateway), and Amsterdam (South Axis and Southeast developments) did increase competitiveness, their effect on society depended on the governments' commitments to public benefits which is highest in the Netherlands and lowest in the US (Fainstein 2009). In Ankara, the regeneration of public inner-city squatter housing areas through private-sector investments has dislocated lower-income groups by way of gentrification (Güzey 2009). But poverty can obviously never be just removed. Social problems associated with poverty, such as crime and substandard housing not only impact average labour productivity negatively, but might also be a disincentive to locate in such places. Hence, although it is wrong to say that competitiveness cannot be attained in the presence of social exclusion, equity and efficiency are not necessarily in a trade-off position (Butler 1999). To some extent outcomes of urban

planning which neglect social inclusion are the logical consequence of strategies based on a literature that pursues competitiveness to the detriment of other social objectives.

IAD [integrated area development] rejects the narrowly defined instrumentality of institutional dynamics for the improvement of market competitiveness of a territory; IAD questions the restrictive existential finality of the TIM [territorial innovation models] in following a market logic only, without caring about the outcomes of market failures for development, and argues that territorial development should be based on a multi-dimensional view of innovation, economic dynamics and community governance. Territorial development does not only mean enabling the local and regional market economy, but also empowering the other parts of the economy (public sector, social economy, cultural sector, low-productivity artisan production) as well as community life (socio-cultural dynamics as a level of human existence by itself, political and social governance of non-economic sections of society, cultural and natural life).

The broader ontological view of territorial development in IAD has a number of epistemological consequences, including the reconceptualizing of social innovation and learning, culture as a mode of socio-economic integration and social change, community networking and governance (Moulaert and Sekia 2003, 299-300).

The issue of urban marginalization assumes a completely different dimension in the developing world. The share of the urban population in Africa living in slums is estimated at over 70 per cent. These people live without adequate basic services, and new in-migration continuously exacerbates the problem. Water availability, public sanitation, and unsustainable exploitation of ecosystems outstrip existing management capabilities and resources of local authorities (Cohen 2006).

For Cape Town, the OECD (2008, 96) commented that growth often leaves out marginalized groups which in turn constrains growth. The OECD Territorial Review suggested that international competitiveness be integrated with social inclusion to reduce the costs of welfare and the many dysfunctional elements of South African society. It also postulated that building social capabilities would unlock future economic potential through emerging entrepreneurship and the like. The Review persuasively identifies the challenge for the City – to provide “the integrated collective and public goods needed to enable inclusive regional development that could minimize social and spatial exclusion while maximizing economic linkages within the region” (ibid) – without offering much by way of guidance how to go about this. It does underline the pretty obvious need to address the City’s (and to some extent the region’s and the country’s) most important challenges through education and labour market policies, a regional innovation system, a built environment conducive to participation and efficiency, and careful husbandry of natural amenities (ibid, 148).

4.5 Summary

In sum, the literature about city and regional competitiveness produces stylised facts that are in part contradictory (cf. Howells 2005, Moulaert and Sekia 2003). Empirical tests manage to turn up evidence for propositions that at least in theory are not easily reconciled.

In addition, the preoccupation with location sits uneasily with the idea of *globalization-über-alles*, especially in this more vulgar formulation. There is tension between the claim that

globalization deterritorialises economic development and the counterclaim that due to different institutional conditions and other highly imperfect locational markets, development patterns are and will continue to be territorially specific. The truth lies of course somewhere between these extremes and the real challenge is to explain the mechanisms of development regardless of whether it is more or less space-bound. For example, there are obviously differences between low-wage, low-skill, low-sunk-cost manufacturing processes and certain consumer services which can take place in many locations, and very high-quality, innovation- or differentiation-intensive goods and highly specialized services for which capabilities exist only in a few places (Storper 1997). The import for city planners is that “new policies cannot be exclusively local but must take into account the position and the positioning of territorial production systems within a local-global context” (Helmsing 2001, 304).

In view of the fact that academics and policymakers in advanced economies battle with the concepts and the reality of city and regional competitiveness, it is not surprising that on the whole there is little work in this area that focuses on cities and regions in developing countries (see Padilla, Vang and Chaminade n.d.) which underlines the relevance of the present study. But of course this study can build upon insights from the North.

The OECD (2007) has addressed the ability of its regions to compete in global industries. It emphasized that economic development takes place in a dynamic context in which there is a lot of uncertainty that acts as an impediment to innovative activities. It identified a number of key trends that are likely to influence the tension between global and local referred to above. First, a large part of world production will be controlled by increasingly complex GPNs in which global brand leaders interact with contract manufacturers and specialized component suppliers. Second, major beneficiaries of offshoring in Asia will occupy successively more complex parts of the underlying value chain. Third, corporate strategies will reflect the needs of lead users and more distributed competences, thus creating more open and networked innovation systems in which both regional capabilities and global competences matter. Fourth, global innovation networks (GINs) will manifest themselves in part through the outsourcing of knowledge-intensive activities in specific developing countries. In other words, innovation and competitiveness are increasingly less bounded at the national or city scale (Auerswald and Branscomb 2008). These are of course high-level assessments and should not be interpreted to mean that selected firms and research activities at universities that take place in Cape Town – because it is in Africa and not in Asia – are somehow structurally barred from getting involved in such GINs.

The OECD report contends that localised knowledge spill-overs are perhaps a region’s best bet for sticky investments and continued attractiveness. These spill-overs should in large part emanate from the regions’ key industries so that it is important to anticipate future demand changes in those sectors. But it should also be possible to transform static comparative advantages and explore more dynamic activities. In advanced economies, regions have in the past benefited from hosting MNCs that took full advantage of more liberal trade and investment regimes. Yet globalization has also loosened ties between MNCs and their home regions. The flip side of this is that regions in developing countries can now host activities that until not so long ago were confined to advanced economies. This is particularly the case where regional innovation systems are successful in supporting dynamic research-intensive activities that rely on local knowledge spill-overs. Policy support must be built upon a sound understanding of the local economy and an inventory of its assets. One of the key questions

is what role local firms (including subsidiaries of MNCs) play in global supply chains. The field work for this study will contribute to throwing light on where in the Cape such trends manifest themselves.

4.6 Issues to consider

Whether Cape Town becomes or remains an internationally attractive investment location depends on the availability, accessibility, and quality of local assets. It is important to realize that what the City considers an acceptable level of provision of such assets may look very different in the eyes of local or international investors. This study will throw some light on this issue. In sectors where localization economies are important for growth, the question is whether the city provides an environment conducive to knowledge spill-overs so that innate potential is fully exploited instead of going lost or being transferred abroad. In view of Cape Town's diversified economy, it would be instructive to learn what kind of specific competences the city is internationally valued for. This might provide opportunities to encourage horizontal linkages that might even lead to new activities. Among the most vexing issues is the relationship between competitiveness and social inclusion. There is no reason to believe that attaining one will somehow solve the other. More importantly, if there are trade-offs between the two, they must be addressed for otherwise the inclusive local economy will remain a pipe dream.

5 Which policies for the knowledge economy?

5.1 Between elusive best practice and locally relevant interventions

There is no shortage of advice on how to compete in and benefit from the knowledge economy. Policy recommendations abound, and many are based on solid analyses of the determinants of economic performance in city and regional spaces interacting with the global economy. But while there are some insights that apply across different geographic and economic contexts, much of the policy work actually requires contextualization, or the design of frameworks, strategies, and specific interventions on the basis of the micro realities of the relevant socio-economic environment. This section only alludes to the generic insights; specific recommendations for Cape Town can only be made after the fieldwork and are thus included in the conclusion of this study.

Competition in the global knowledge economy raises a number of issues that apply to spatially concentrated entities as much as to national economies – what differs is the political leverage the relevant authorities have over outcomes. The first issue is human capital. The dynamism of knowledge-intensive activities translates into increasing demand for highly-skilled workers. Accelerating technological change puts a premium on educated and skilled labour and effectively discriminates against unskilled labour. For developing countries and regions in particular, the knowledge economy will remain an elusive goal unless governments manage to promote access to a range of relevant skills and to inculcate a sense of and facilitate the capacity for systematic learning among the workforce. At the firm level, this must be reflected in appropriate organizational change to accommodate technological upgrading. In sum, the improvement of human capital is key (OECD 1996, Begg 1999).

There may be failures in the market for skills, and this is an issue of paramount concern in South Africa. But although it is in theory possible to think of government as a skills

coordinator and Singapore is cited as an example where this has been done to great success, it is doubtful that Cape Town could emulate this out of the blue – for the time being, there is simply too little capability in government, too little coordination across government, and hardly any strategic communication between government, industry, and other relevant actors to swing such an outcome. For example, if WESGRO pursues inward direct investment and such FDI promotion is not linked to industrial policies featured through the Department of Economic Development and Tourism, or to incipient innovation policies that for the time being are mostly only talked about, the result will never be more than the sum of its parts, and likely less. The same applies to suggestions for science parks, technology hubs, and the like (for a theoretical treatment, see Metcalfe 1995; Bartzokas and Teubal (2002) discuss why and how such policies need to be informed by research; Feldman and Kelley (2006) illustrate the enormous informational requirements associated with generating such advice; and Nyholm et al. (2002) analyse where theory falls short of helping to guide the design of innovation policy).

5.2 Policy in Cape Town

But this is of course no justification for inaction. What this study needs to do is explore whether and how Cape Town could get involved in such coordination activities. For example, it might be possible to link up FET or higher education institutions systematically with subsidiaries of MNCs in sectors with high growth potential that the City wants to promote (cf. UNCTAD 2005). It could also explore and potentially facilitate backward linkages to SMEs regardless of whether, depending on their capabilities, they get involved only in productive or also in innovative activities. What form such interventions may take depends among other things on the nature and scope of technological change in the relevant industry – sometimes large, vertically integrate firms will be key actors, other times networks of small, specialized producers (Robertson and Langlois 1995). There is no question that in principle public policy has a role to play.

In many instances industry-specific policies and SME policies directed towards technology start-ups need to be implemented at the local rather than the national level. This is particularly important in large countries where comparative advantages and resource endowments of various locations may differ considerably. In Shanghai, for example, policies at the central level were complemented by strong local government support to attract FDI in the semiconductor industry and to build up an internationally competitive industrial base... (UNCTAD 2005, 220).

Insertion into the global knowledge economy is possible at different tiers. Lower-tier participation does not obviate the need for investment in skills. But higher-tier participation makes it necessary not just to have people with quality education and the relevant skills. They must also be able to work “virtually”, be that in networks, across borders and sectors, or in between converging technologies. It is important for economic systems to have people that are willing and capable to be “on the move”, and to accommodate immigrant (knowledge) workers from elsewhere (OECD 2008). One of the reasons behind the higher innovative capacity of the US compared to the EU is that people, along with capital and knowledge, are more mobile in the US. This leads to the agglomeration of innovation in specific locations, while allowing distinct territorial mechanisms to exploit local innovation and synergies between the two processes (Crescenzi, Rodríguez-Pose, and Storper 2007).

This underlines the need for openness more generally. No region in the world, much less a developing region, has the requisite resources to invest in every knowledge-based activity that might be desirable. In addition, since there is now international competition for offshored or outsourced R&D, the question for policymakers is how best to combine investments in research that play to a region's strength with an upgrading of absorptive capacities that attract knowledge-intensive investments from outside. With a higher level of local capabilities, benefits from such investments are more likely to materialize, even if only by way of spill-overs rather than because MNCs are ready to transfer proprietary knowledge. Interactions and linkages matter in the sense that offshored or outsourced R&D is more likely to benefit the host region when it is linked to production and when local firms and research institutes are involved (UNCTAD 2005).

Openness must be embedded in a systemic context where the "innovation system" is not just a nebulous description of some kind of interaction that is supposed to be taking place but where there are incentives in place to facilitate the exchange of productively useful knowledge and where knowledge spill-overs can occur as well. This, in turn, implies that the dynamics of the regional innovation system are well understood which in the Western Cape is not the case. Openness also implies extending the ambit of policy from the traditional focus on R&D, mostly in the manufacturing industry, to non-technological innovation and especially user-driven innovation. This is not to deny the importance of supply-side innovation but underlines that helping to build market demand for innovation (e.g. through public procurement of renewable energy technologies to retrofit government buildings) is also important. Finally, openness refers to the willingness and capability of policymakers to engage with relevant epistemic communities – for example in the OECD or UNCTAD as well as in national and regional forums – that address the same or similar questions, notwithstanding that they might come up with different answers (cf. OECD 2008). No amount of benchmarking can substitute for such structured comparisons; in fact, benchmarking is meaningful only in such a context.

The key challenge for public policy is how to improve created assets – human capital, infrastructure, the built environment – and how to foster networks that include SMEs, while striving for social cohesion. Without created assets, relational assets that are a key element in the identikit of sticky places cannot emerge. This, in turn, requires careful long-term planning. At the same time it is important not to get carried away by the "vision thing". Pragmatism is essential. Increasing Cape Town's competitiveness will not make everybody happy. The city therefore has to deal with some degree of resistance to change and organizational inertia, including in its own ranks. This means that change will take time and that policymakers must invest political capital that extends beyond the electoral cycle. There is nothing wrong with promoting selected dynamic activities in the economy, even if they are small, provided society at large is part of the larger endeavour to learn and upgrade, and understands where the benefits lie (World Bank 2007). External shocks or international events can galvanise coalitions in support of change. In Paris, the formation of Europe's Common Market led to the development of La Defence, aimed at attracting corporate offices from other cities, much like London's Docklands later. Barcelona's emergence as an international business and cultural centre was influenced by the Olympic Games staged there, not only because it led to large infrastructure programmes but also because it boosted

the city's image abroad. In sum, there is space for newcomers (Gordon 1999), and this is where the 2010 World Cup might leave a lasting legacy.

In Europe, one possible outcome of such a process of leveraging created assets was recently proposed as “smart specialisation” in the joint pursuit of strengthening local capabilities and attracting external knowledge resources.

A region that succeeds in particularizing its knowledge future base will enjoy many benefits: it has few other competitors for resources (the two or three other regions which selected the same specialization areas); critical mass is therefore easier to reach and the agglomeration economies less difficult to create; and the produced knowledge resources (for instance human capital) are co-specialised assets with the risk of them moving away limited (European Commission 2008, 14).

5.2.1 A look ahead

The fieldwork for this study will illustrate firm capabilities in the region's more important economic activities. Where sound capabilities exist, the challenge is not so much to support one firm or a specific sector, but networks that generate the relevant activities. This must happen neither in a completely top-down or bottom-up fashion – the exact balance depends on the idiosyncratic nature of the activity a public good is supposed to support – but in such a way as to encourage not just monitoring and evaluation but also critical self-reflexivity so that the resulting policy is regularly questioned, encourages learning, and can adapt to changing circumstances. Especially concerning the tremendously difficult task of securing more inclusiveness of economic development, it is important that NGOs or other entities be given an opportunity to participate where the public sector does not have the expertise and the private sector does not have the incentives to become fully engaged.

So public policy in support of competitiveness must upgrade not just the economic but also the institutional and social base of the city-region. Where proximity is shown to be key to success – e.g. in Cape Town's diverse creative activities – interventions to support clusters of related industries and their internal learning mechanisms are worth considering. Of central importance is that such networks manage to engage with emerging technological opportunities so as to avoid lock-ins due to business-as-usual attitudes. Although it is clear that some regions learn and adapt better than others – and indeed that every “intelligent” place has its “dumb” equivalent – the exact determinants of such successful behaviour are less clear, except to travelling salesmen who sell expert advice that supposedly helps every city between Helsinki and Hong Kong (cf. Amin 1999).

In Cape Town, it is not plausible to think that there is a dearth of intelligent people, but the same cannot be said about intelligent organizations, and even less so about the knowledge flows and linkages among the various actors in the regional innovation system which on the whole are the exception rather than the rule. In the City Council bureaucracy in particular, the predominant rationale for action seems not just legislative compliance but also highly risk-averse behaviour that prioritises bureaucratic survival in unstable political environments over experimental action geared toward opening up possibilities for future development trajectories. The resulting logic is circular, self-referential, and intensely inward-looking. This needs to be addressed institutionally in order to free up space to engage meaningfully with

the external environment and its changes that require adaptation, organizational and otherwise. New institutional practices such as ad-hoc brain trusts that work with policymakers, for example along the lines of the City's climate change advisory group, might be needed to organize and coordinate this (ibid).

This review has emphasized the importance of mastering technological learning and upgrading through strengthening local absorptive capacities in conjunction with tapping into global knowledge networks. This section has added the importance of institutional change. Richard Nelson has termed "the prevalent methods of doing things in contexts where the actions and interactions of several parties determine what is achieved" (Nelson 2008, 2), social technologies. Further, institutions are "basically the factors and forces that mold and hold in place social technologies" (ibid). Hence, institutions are about achieving the kind of coordination that promotes good performance. Finally, the co-evolution of physical and social technologies in the context of institutions that help their effective operation determines economic growth. Although some institutions are designed and controlled at policy levels that are far removed from the urban or regional policy space (e.g. the global IPR regime), others are not. Local institutions can of course foster dynamic activities that enhance Cape Town's competitiveness. By the same token, they can also prevent that from happening, for example through inertia or propagation of inappropriate rules of the game. So there is a link between institutional and technological change but it is not necessarily conducive to growth. This is why public policy is by no means a sideshow in the quest for promoting inclusive growth.

5.2.2 What policymakers should avoid

The above sections argued for some Do's. But there are also some Don'ts that are worth summarizing.

- *Don't start (too) big.* Big interventions can become big disasters and leave explosive political legacies. It is much better to begin with small experiments and become bolder only once some experience has been gained.
- *Don't be afraid to fail.* It is impossible to get everything right and succeed with every measure. What is important is to try and reduce the margin of error, for example, due to information failures, by seeking the inputs of relevant stakeholders. It is also important to subject interventions to monitoring and evaluation so as to learn from the process.
- *Don't bite off more than you can chew.* It is desirable to accommodate the objective complexity of economic activity in Cape Town through a policy framework to help provide the kinds of collective goods that facilitate the more systematic use of untraded interdependencies that make Cape Town a sticky place. But this is hugely complicated and relies on informational inputs and organizational capabilities that are not widely available. Hence this is likely itself to be an outcome of the process of economic development that evolves as a result of policy learning.
- *Don't think out of context.* The best policy intentions are useless when they lead to disembodied entities. It makes no sense to create linkages between actors that have nothing productively useful to share because their capabilities are too low. For functioning networks to emerge, many elements must be in place beforehand, and therefore governments cannot just create them.

- *Don't trust the travelling salesmen.* Just because something worked in Barcelona doesn't mean that it'll work in Cape Town, no matter what the (foreign) consultant says. Also, although the consultant may well know quite a bit about Barcelona, he is unlikely to know anything much about Cape Town which is why he cannot advise on the feasibility of absorbing external insights into local reality.
- *Don't put all your eggs in one basket.* No matter how successful or promising a few sectors are, it would be wrong to neglect all others at their expense, be they high-tech or low-tech, formal or informal. The true challenge is to include both in a functioning, linked, local economy.

6 Conclusion

The purpose of this review is to raise a number of questions that are important for Cape Town's future competitiveness. Some can be addressed by this study. Others will have to be pursued in future research commissioned by the City. In some sense it is more important to have agreement on the questions than on the answers – while the set of relevant questions is limited by the propositions of key theories, there is likely more than one way of answering them, depending on strategic priorities, trade-offs between conflicting objectives, the readiness or otherwise of essential stakeholders to get involved in city-wide endeavours to promote certain activities, the availability of resources including appropriately skilled personnel in the public sector, and so on.

Although each section of this review focused on different themes, each also underlined the key role of local capabilities. Without a threshold level of absorptive capacities, the internalization of critical technology will remain elusive. Globalisation will bring decidedly fewer – and possibly no – benefits to regions that fail to develop an environment in which local firms upgrade through learning which in turn unlocks relational assets that provide incentives for MNCs to stay for the long haul. The creation of networks makes no sense if the parties to such interaction have nothing to share that would positively impact on efficiency or productivity. And policies or strategies designed to advance competitiveness in the absence of a profound understanding of the differential intra- and inter-sectoral distribution of capabilities among firms and other economic actors are essentially pie-in-the-sky.

Hence all questions asked by this study can be related back to the issue of local capabilities, at least and in particular as far as policy is concerned. Everything else is second or third order. In short, this means that unless Cape Town gets the issue of building local capabilities right, no amount of public intervention in favour of higher levels of competitiveness will make much difference other than in the short term, certainly not over the time frames envisaged by this study.

In the engagement with global technology and knowledge, the key questions are:

- What capabilities for absorption and learning do we possess?
- How do they differ across sectors and activities?
- Have they changed over time, and is the trend positive or negative?
- How can we grow existing capabilities, are we in a position to build new ones, and are such activities complementary or trade-offs?

For the relationship with the global economy and especially MNCs, the key questions are:

- What is the nature of these linkages?
- Who benefits from them, and how?
- Are there opportunities to exploit the attendant benefits more widely?
- Can existing linkages be deepened or intensified, and can new ones be opened up?

For the consideration of Cape Town as a dynamic and (internationally) attractive investment location, the key questions are:

- What are the (dis)advantages of the existing stock of local assets?
- Does the city provide an environment conducive to knowledge spill-overs in those activities where localized learning drives economic growth?
- Does the local economic structure represent an appropriate mix of concentration (to obtain expertise in something) and diversity (to create opportunities in a world of rapid technological change)?
- Is there a trade-off between competitiveness and social inclusion, and if so how can this be solved?

It is self-evident that these questions constitute a research programme and a process of policy design that will need to go on long after the present study has been completed. This study will provide partial answers to most of these questions. The fieldwork ensures that there will be illustrations of how and why these issues matter. But because the study involves only key informants in a limited number of sectors, it cannot claim to be representative. No study of this kind ever will be which is why it is important to conceive of this contribution as part of a continuous process in which research leads to policy (experimentation) which in itself then becomes the object of further research, while also reflecting on the appropriateness of the advice received in the first place. The goal is therefore not just “to get things right” but systematically to reflect upon the reasons why despite one’s best efforts they sometimes go wrong. This is the essence of reflective policymaking and learning.

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