
Cities in Transition: Problems, Processes and Policies

There are preconditions that either enjoin urban innovation, or at least powerfully encourage it. But perhaps they never actually guarantee, inexorably, that it will happen: urban innovation is not the monopoly of one kind of place, even at the same period of capitalist evolution, let alone different eras. No place has a monopoly, whether large metropolis or small emerging city, old European capital or new West Coast upstart; any city can play. Time and chance happeneth to them all; it is a question of finding the moment and seizing the hour (Hall, 1998, p. 939)

Introduction: Economic Transformations

Only a few years ago we appeared to be on the doorstep of a bright new urban age. A wide range of commentators and analysts highlighted that population and economic activity are increasingly concentrating in cities across the globe, and cities now take centre stage in many discussions on economic development and competitiveness. A deep synergy between economic globalization and urban agglomeration was said to be driving both the renaissance of the city in the industrialised world and rapid urbanisation elsewhere. A dominant narrative of the ‘triumph of cities’ – especially big cities – and the power and advantages of agglomeration in cities (Glaeser, 2009, 2011) captured the academic literature and the policy community alike. No longer were cities defined by their entrenched social problems, instead, according to Glaeser, they are “humanity’s greatest invention”, and the presence of poverty in cities “reflects urban strength, not weakness” (2011. p. 70). In this view, both rejuvenated industrial cities and fast growth industrializing megacities are benefiting from the same basic dynamic forces that allow humans as an intrinsically social species to achieve more in groups and flourish in urban environments. Density and proximity allow collaborative innovation or “collaborative brilliance”, and globalization has only increased the economic returns to knowledge to be gained in large cities. As capitalism has moved into a post-industrial phase,

cities have flourished as amenity and consumption centres, and as magnets and generators of creative talent and human capital. They have become more productive and innovative through the learning and exchanges of knowledge fundamental to urban living. There seemed little doubt that cities can attract human capital, create knowledge and thrive.

These sanguine claims have been heavily shaken by the economic turbulence of recent times, not least the global financial crisis, and such confident optimism has become a much rarer commodity. The dominant narrative now seems far less secure. A growing amount of research has shown that city economic trajectories have been strongly mixed and divergent, and there has been an increasing evidence that while some cities have benefitted greatly from globalisation and deindustrialisation, others are struggling to adjust and adapt and are failing to deliver rising living standards (*CJRES*, Divergent Cities Issue, 2016). Stories about renaissance and revival have given way to analysis of the profound uncertainties, challenges, pressures and shocks facing urban economies. The prolonged recession from 2008 and the risks inherent in financialized capitalism, the intensification of inequality, the crisis of public finance and the adoption of austerity, the growth of nationalist and protectionist opposition to trade, the threat of automation to employment, and the acceleration of climate change and ecosystem degradation - have all combined to erode optimism and create a sense that cities face compound risks and severe vulnerabilities. Thus there has been growing recognition that cities need to be resilient in order to cope with both predicted and unprecedented shocks and crises. However, what has also become clear is that resilience to a specific shock or short-term crisis is often the outcome and reflection of longer-term processes of adaptation and response to longer transformations in markets, global trade, technologies, practices and so on. Shocks and slow-burn pressures are typically interactive and recursive (Martin and Sunley, 2015). The resilience of a city to a recession or crisis typically depends on longer-term processes of change and adaptation so that the degree to which cities show different rates of transformation and levels of adaptability over decades is attracting increasing attention.

Capitalism, of course, has never been static; it has always been disruptive. Its key characteristic is incessant creative destruction in which established firms, technologies, occupations, jobs and even industries are rendered obsolete and replaced by new firms, technologies, occupations, jobs and industries. Urban economies are constantly reshaped by

innovations and new products and services that they themselves have generated. Such endemic disruption has been exceptionally intense in recent decades, and integral to several fundamental economic transformations. These include the globalisation of production and the way in which this has redistributed comparative advantage in manufacturing. Established industrial cities have suffered from the erosion of their export bases and loss of their industrial rationales and have been forced to seek a new role as centres of consumption and service industries. Cities are now embedded in a complex mosaic of supply chains and production networks in which specialisation is increasingly organised by tasks and stages within supply chains, rather than in entire industries (Baldwin, 2016). Deindustrialisation has gone together with the growth of service industry and a key measure of successful adaptation has been the ability of cities to attract consumption-based services and tradable knowledge intensive business services. However, the growth of services has gone hand in hand with financialisation and the increasing dominance of financial interests and circuits over many other parts of the economy, including urban infrastructure and the public sector. As a consequence, post industrialism, like globalisation, has proved profoundly destabilising and uneven in its impacts. Disruption has also been driven by the profound structural transformations unleashed by the spread of digital technology and the internet and the new business models and practices that this enables. Indeed, the advent of new technologies and the appearance of the 'internet of things' in some ways represents a 'fourth industrial revolution' (DePropris, 2016; Schwab, 2017) or the arrival of a 'digital platform economy' (Kenney and Zysman, 2016). A key challenge for cities is to seize the opportunities for growth and efficiency in this revolution so as to compensate for the employment-reducing effects of automation and the growth of robotics and artificial intelligence. Such transformations have been led by some cities and exploited by others, but many cities have lagged behind in making the transition to a post-industrial, globalised era. The contemporary economy is not simply reinforcing some of the advantages and strengths of cities, it is also generating a set of challenges and pressures that demand that cities are resilient and adaptable if they are to have prosperous futures

The Adaptive City?

Although there are increasing calls for cities to show economic adaptability, there have been few attempts to define what this means and explain its implications. Put simply, adaptability

refers to the quality of being able to adjust to new conditions or a changed environment, or to exploit new opportunities to minimise the upheavals of future shocks and developments. In organizational theory, for example, the notion of adaptability has been used to describe the capacity to adjust to, or anticipate, changes to maintain organizational viability (Ramón and Koller, 2016). Adaptive capability is described as a process of continuous learning, and especially the capability to learn new things rather than excelling in established practices. This is then typically traced into particular behavioural traits, including the ability to read and act on signals of change, experiment rapidly and frequently, manage complex and interconnected systems of stakeholders, and motivate people and partners (Reeves and Deimler, 2011).

The application of the concept to a complex city-region system, itself a multi-level entity comprising numerous firms, organisations, workers, institutions and the like, all in distributed, overlapping and interlocking networks and systems of interdependencies, is much more difficult. Cities are composite systems with multiple industries, firms and reflexive agents each with different perceptions, interests and abilities to learn and respond to economic change, and behaviour by key agents is much harder to identify and evaluate (Christopherson, et al, 2010). In addition, it is not simply that cities have to adapt to change in some 'external' environment; instead, economic environments are constructed to a large degree by urban economies themselves. Cities co-evolve with their economic environments, and processes of adaptive change help determine the environment to which they must adapt in future. How adaptability at the scale of the city as a whole emerges from this complex co-construction remains largely unknown. Evolutionary approaches in economic geography, and elsewhere, have attempted to explain this by connecting adaptation to notions of industry paths, based on the maturity and status of key sectors. In these approaches, 'adaptation' is understood as movement towards a preconceived path in the short run, whereas 'adaptability' is defined as the dynamic capacity to develop multiple trajectories (Grabher and Stark, 1997). According to Pike et al (2010), adaptability emerges through decisions to leave an established path that may have been successful in the past, in favour of a new, related or alternative trajectory. In this view, path dependence and 'lock in' may produce strong adaptation as outcome but at the cost of reducing *adaptability* as process (see also Martin and Sunley, 2006). However, we cannot assume that this trade-off between adaptation and adaptability is universal. In some

instances, incremental adaptation within a path allows learning and the accumulation of dynamic capabilities that facilitate the creation of a new economic trajectory or path so that it actually generates adaptability (see Martin, 2010).

As Pike et al (2010) rightly argue, the application of adaptability to geographical entities such as cities or regions inevitably raises normative and political questions about the costs and benefits, the direction of change, and the institutional and policy arrangements by which such change is accomplished. Inherent in adaptability is the notion of change against set criteria, or towards a goal or purpose. In the case of a firm, it is clear that the appropriate purpose is one of viability, evidenced by survival and, to some degree, profitability (see Metcalfe, 1998, pp. 34-36). But in the case of a city, what is the key meaning of 'viability', and how do we judge whether adaptation is successful? This is important because there are competing visions of city adaptation. In a more economic vision the key purpose is one of growth in terms of output, employment, and productivity. In this case, an adaptive city is one, which maintains a high growth rate, and one, which performs well on standard measures of competitiveness when compared with similar or rival cities. At its worst, this vision assumes that growth will permeate to all groups primarily through income multipliers (for example, Moretti, 2012) or even 'trickle down'. However, while increasing output, employment and productivity are necessary for rising living standards, they may not be sufficient to guarantee that outcome. As we have seen recently, city growth does not always translate into improvements for poor and less educated groups. In many cities, growth has produced rising incomes for those at the top of the income distribution, rather than raising incomes and reducing poverty for those at the bottom (for example, see Behrens and Robert-Nicoud, 2014; Lee and Sissons, 2016; Breau et al, 2014). A growth-based understanding of adaptability is thus too narrow in the sense that it says too little about inequality and inclusive growth, and even less about well-being and quality of life (including access to affordable housing, public services and urban amenities).

.A key challenge for cities undergoing transformational change, therefore, is how to reconcile different goals such as **inclusive** growth, affordability, basic services and public wellbeing. An urban economy that meets one priority while failing to meet others, can hardly be said to be adaptable, or 'well adapted'. But this, in fact, is a common feature of modern economic growth. Technological progress typically produces unintended side effects or 'bite-back";

while it solves one problem it can create another (Mokyr, 2014). Agglomeration may have raised wealth and growth in many cities but the negative externalities in terms of pollution and excessive waste are, in many instances, undermining both the wellbeing of residents and the long-term viability of natural ecosystems that sustain cities. Contrary to what some writers such as Glaeser may argue, when it comes to city size, bigger is not necessarily better. While post-industrial capitalism has hugely benefitted some groups and classes, others have been disadvantaged, marginalised and left behind. After some sort of Damascus road experience, having championed cities as the site of an economic utopia animated by the 'creative class', even Florida (2017) now describes the clustering of knowledge capitalism in cities as producing a 'winner takes all' model in which there are widening gaps between 'superstar cities' and the rest. Increasingly, successful cities have become so expensive that middle income and poor residents are driven out. The central contradiction of modern capitalism, he continues, is that "The clustering force is at once the main engine of economic growth and the biggest driver of inequality. The concentration of talent and economic activity in fewer and fewer places not only divides the world's cities into winners and losers, but ensures that the winner cities become unaffordable for all but the most advantaged " (p. 33). This seems a belated and much overdue rediscovery of Jacob's (1965) view that the success of an economic activity in a city can lead to self-destruction if it prices out genuine diversity and variety. The reality is that we need more cross-disciplinary research into how housing markets; property developers; land zoning and tax regulations; real estate investment by global high net worth individuals and sovereign wealth funds; and public infrastructure spending, all shape and affect the economic evolutions of cities.

Adaptability Rules

So not only are there competing visions of how we should understand and measure economic adaptability in cities, there are also several different schools of thought on what are the key causal general principles or 'rules' that underlie it, and how we should best encourage and foster it. Here we briefly highlight several influential approaches but do not provide a comprehensive review. The first can be called a *human capital agglomeration* view. Agglomeration has, of course, become something of a panacea in the new urban economics

and new economic geography where it is assumed that agglomeration translates into significant economies of scale, increasing returns and productivity advantages. However, there are no unequivocal relationships between the size and density of cities and their growth trajectories and long-term ability to rejuvenate themselves (Martin et al, 2016), so that is unconvincing to link city size *per se* directly to adaptability and reinvention. Urban economists have, therefore, emphasised the agglomeration of knowledge workers and human capital as the keys to urban adaptability. In this view, not only do educated people themselves show a greater capacity for learning, but agglomeration reinforces this, so that their collective intelligence and innovativeness are raised and invigorated (Glaeser, 2011). While this view may be more persuasive than the appeal to raw city-size, it nevertheless tends to abstract and extract human capital from other economic and institutional dynamics, and ignores the costs imposed by the concentration of more educated labour into cities, highlighted by Florida's *volte-face*. There are also many unresolved questions about how certain cities gain and sustain their advantage in human capital. Educated and skilled labour is attracted to certain cities primarily because of their economic bases and the territorial dynamics of industries and occupations (Storper and Scott, 2009). While a human capital perspective is clearly important, many questions about the relations between education, occupational change and entrepreneurialism remain unresolved.

A second approach to urban adaptability is more Schumpeterian and tends to highlight the importance of *industrial structure, economic variety and innovation*. This view tends to direct our attention to the (differing) ability of cities to capture propulsive industries, and claims that it is ultimately the nature of these industries, and their relationships, that determine adaptability. As product cycles unfold and industries mature, cutting-edge products become routine and easy to make so that innovative cities lose their advantage over time. As Moretti (2012, p. 150) argues, the key challenge for innovative cities and their constituent clusters is to adapt and reinvent themselves in order to retain their edge: "Clusters can't afford to cling to a declining industry but need to reinvent themselves before the tipping point is reached and the local eco-system enters a downward spiral".

These structural accounts suggest that the past industrial structure of a city-region conditions and shapes its ability to adjust, so that we need to examine path dependence and how it shapes adaptability and new path creation (Martin and Sunley, 2006). Storper (2013, p. 94)

argues that “Successful adjustment - or resilience – essentially comes through sectoral succession or innovation: capturing activities that can become the basis for new regional economic specializations, retaining the retainable parts of existing specializations by reinforcing comparative advantage in a certain part of the activity’s value chain, or moving up the product quality ladder within an industry already present in the region”. In other words, in this interpretation adaptability can be traced to a combination of specialization, human capital and institutions. However, this emphasis on specialization is contestable; as we have noted, others argue that adaptability depends on the *variety* of resources, and the existence of subsidiary and relic paths that may prove crucial in a crisis. Evolutionary economic geographers have contended that a diversity of related industries is most conducive to innovation and economic adaptability (Frenken et al, 2017). It is not simply the proximity of educated people that allows faster learning; instead, radical innovation stems from the co-presence of agents and entrepreneurs who have some degree of cognitive proximity and similar experience, and can therefore learn from each other and produce cross-fertilisations and recombinant innovations. Evidence for these alternative views is still emerging and incomplete, however, and the relationships between industrial composition and adaptability merit more sustained analysis.

A recent offshoot of these innovation-based views centres on the potential and application of *digital technology* in ‘smart cities’ as a route to adaptability (See *CJRES Smart City Issue*, 2015). Much of the enthusiasm for smart city models lies in the promise that they can reconcile economic growth with environmental adaptability, including de-carbonisation and a better (and circular) use of scarce resources. While these debates are beyond the scope of this discussion, there is an apparent danger that some of this literature becomes too technologically optimistic. Technology use takes places within socio-technical regimes, which are a complex mix of technologies, values, culture and institutions, as well as political landscapes which set incentives and steer agents’ choices. In many ways, digital technology is being used to worsen (deskill) labour market conditions and practices, and to reinforce unsustainable consumption and distribution demands (Kenney and Zysman, 2016). Adaptation thus depends on what happens in these institutional and political domains as well as the potential provided by new technologies.

A third major approach to the sources of urban adaptability has, therefore, focused much more on *institutions* as key determinants, and especially how institutions influence both the supply of educated labour and the launch of new industrial paths. There are, of course, strongly competing visions of how institutions shape adaptability. Institutions are durable and tend to change slowly, and according to many innovation economists, they show a tendency to become conservative and rent seeking, which then threatens to undermine and restrict the sources of city adaptability. The policy recommendations based on this view, therefore, tend to urge deregulation and the ruthless pruning of urban government, and the removal of constraints on land-use planning and development control, to allow underlying processes of agglomeration and entrepreneurialism to thrive. A rival view is that well-governed cities with stronger institutional capabilities that facilitate policies that promote economic growth are much more conducive to adaptability. Here adaptability emerges from an institutional synergy and co-operation between public and private sectors. For example, the notion that city economic adaptability depends on the existence of formal institutions that give genuine power and autonomy to city leaders has become highly influential. The decline of British industrial cities, for example, has frequently been blamed on their dependence on central government benefaction, and their loss of local leadership capacity, decision-making and fiscal powers (Hunt, 2004). The contemporary British policy of establishing ‘metro-majors’ and devolving powers to cities is based on the assumption that visible leadership with some control over skills policy and infrastructure can respond more quickly to local problems and ensure that cities retain their vitality. While this account is appealing, the relationships between urban economic development and urban devolution are far from straightforward. There is a great deal of endogeneity between institutions and economic evolution so that the direction of causation is hard to establish (Rodriguez Pose, 2013). Further, the consequences of formal institutions depend on precisely how they are used and how they intersect with informal institutions such as civic cultures and conventions (Hunt, 2004). According to Storper et al (2015) for instance, a networked relational infrastructure among business and political leaders in the San Francisco Bay Area has been crucial to the city-region’s cognitive frame and openness to innovation and hence to its dynamism. The relations between institutions and economic adaptability are one of the most intriguing, but also one of the most difficult and poorly evidenced, parts of this debate.

Whatever the merits of any particular theoretical perspective on how cities can best adapt to structural and technological change, it remains the case that there is little understanding of how big an impact particular policies might usefully be expected to have and over what period of time. A priority for future policy development must surely be to move away from simply accepting simple recipes such as the encouragement of specific sectors or agglomeration boosterism and instead to seek to understand more about how cities can adapt by building on the core competencies or attributes that make them attractive as places for investment by business and households, and to do so in a way that recognises the *totality* of the place, rather than discrete and isolated parts of it. Policies configured in this way will recognise the importance of coordinating activity across stakeholders. They will also recognise that if cities are to be helped to adapt then policy initiatives are required on several fronts that involve the promotion of entrepreneurship, innovation, investment and human capital formation (education and skills), as well as modernising infrastructure (Gardiner, et al, 2013).

In conclusion, a number of different schools have begun to explain why it is that some cities are more adaptable and innovative than others, however each of these schools has limitations and none have as yet been adequately examined in different periods and regions of the world (see Hassink, 2017). So far then, we have a number of possible versions of the sources of cities' economic adaptability, each of which offers some insight but also some weaknesses. There is little proven understanding of the 'rules' that underlie and generate economic adaptation and transformation. Furthermore, there is a continuing debate on the best way to describe the scales of these causes. To what degree do they lie primarily in place-based processes grounded or concentrated in cities, and how do these processes intersect with, and shape, the networks of wider relationship and flows, which sustain cities? Moreover, as Peter Hall's (1998) quote on city innovation above reminds us, the search for easy generalisations is likely to be in vain, and we are instead likely to find that much about adaptability depends on cross-scale relations, context and contingent decisions. The papers gathered in this issue of the journal seek to advance our understanding on a number of these issues concerning the processes involved in the economic transformation of cities, and how cities adapt to changing circumstances and opportunities. Understanding why some cities manage to re-orientate and transform their economics over time, while others struggle, is possibly one of the most pressing policy challenges of our time. While papers in this issue of the journal may not

provide a full answer, the hope is that they advance both the research agenda and the evidence base on which policy ultimately depends.

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