



Structural Transformation, Adaptability and City Economic Evolutions
An ESRC-Funded Research Project under the ESRC Urban Transformations Initiative

Working Paper 2

Divergent Urban Economic Development: Reflections on a Tale of Two Cities

A Review Essay on *The Rise and Fall of Urban Economies: Lessons from San Francisco and Los Angeles*

by M Storper, T. Kemeny, N.P. Makarem and T. Osman.

Stanford University Press, Stanford, California. 2015 ISBN 978-0-8047-8940-0.
xvi+305pp.

For *Regional Studies*

Ron Martin

*Department of Geography, University of Cambridge, Downing Place, Cambridge,
CB2 3EN rlm1@cam.ac.uk*

February 2016

It would be difficult to exaggerate the recent surge of interest from both academics and policy-makers in cities, and their role as key centres of economic activity and wealth creation. Within the overlapping subfields of urban economics, regional science and the 'new economic geography', a vast body of literature now exists that explores the importance of the external economies and increasing returns effects that arise from the concentration of economic activity (firms, workers and consumers) in cities, and the positive impact of that concentration on productivity, innovation and wages. A substantial part of this work is theoretical, and involves formal mathematical models; but it has also stimulated an expanding body of empirical enquiry, and we now know much more about these aspects of city economies.

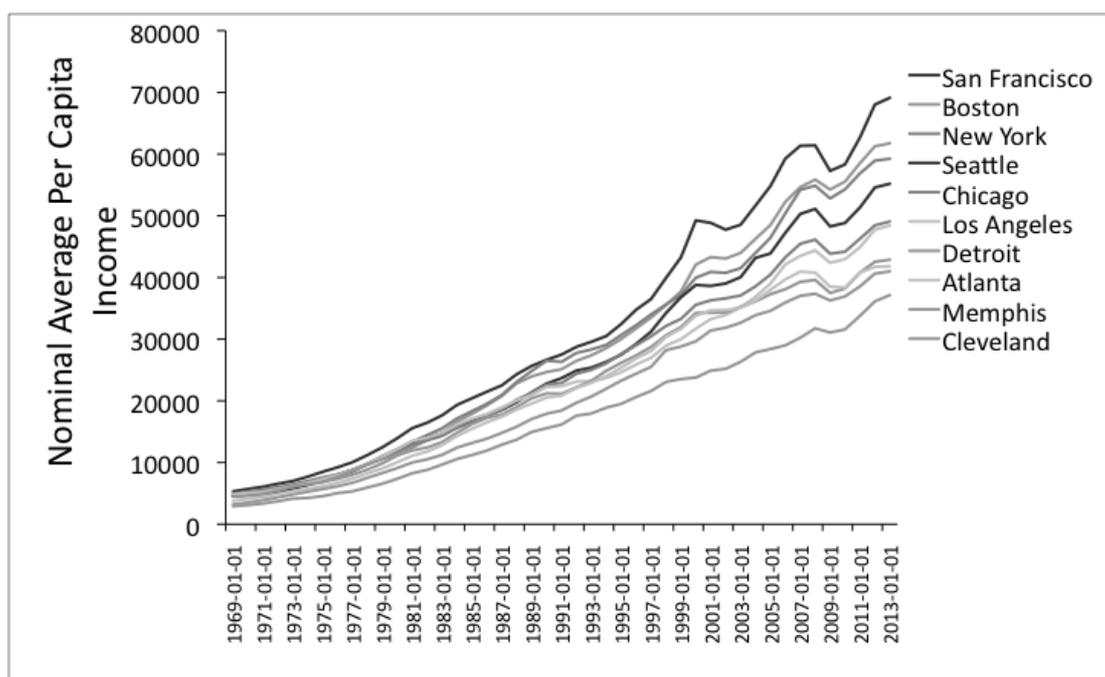
What has been less studied, by comparison, is how city economies evolve over time. To be sure, there are some significant works on this theme. For example, Jane Jacobs' *The Economy of Cities* (1969), though written nearly 50 years ago, first broached the issue of how city economies change over time, and still remains a relevant read. More recently, Margaret Cowell's *Deindustrialization: Adaptive Resilience in American Midwestern Regions* (2014) focuses directly on how old industrial urban regions in the USA have sought to re-orient their economies over the past 40 years. And there are some other such studies (for example, Glaeser, 2005; Binelli, 2013; Michaels et al, 2013). But in general there is a relative paucity of detailed work on the long-run growth, development and adaptation of individual city economies. In this context, *The Rise and Fall of Urban Economies: Lessons from San Francisco and Los Angeles* is a significant contribution to the subject, since it provides a richly informed causal narrative on these two cities which is not only valuable in its own right, but also has a wider relevance and importance, since it provokes questions about theory and method in urban and regional research more generally.

The aim of the book is to investigate the development paths of two great Californian city-regions, Los Angeles and San Francisco, over the past 45 years. Why these two cities? As the authors show, while in 1970 average per capita personal income in Los Angeles was 92 percent of that in San Francisco, by 2012 it amounted to only 71 percent. Thus from starting at almost identical initial positions, the two cities have since progressively drifted apart, with incomes in San Francisco consistently growing more rapidly than those in Los Angeles. It is this divergence that is the focus of the book.

This phenomenon of divergent growth is highly pertinent since in fact it relates to a feature that is not just peculiar to these two cities but to one that can be observed across US cities more generally, and indeed elsewhere. In Figure 1, I

have plotted per capita incomes for a selection of 10 large US cities (metropolitan areas) over the period 1969-2013. The increasing divergence in per capita prosperity between the cities is striking, especially from the mid-1990s onwards, when the process clearly began to accelerate. The uneven impact of the Great Recession of 2008-2010 across cities is likewise evident. But such divergent income growth (the authors' indicator for 'development') is not confined to the United States. Highly differentiated, and often divergent, patterns of city growth are to be found in other countries, such as the UK (see Martin et al, 2016), across Europe more generally (for example, Dijkstra and McCann, 2013), in Canada, China and elsewhere. The research question addressed by Storper et al in relation to Los Angeles and San Francisco thus has a much wider potential relevance.

Figure 1: Growing Apart: Nominal Average Per Capita Incomes for Selected US Metro Areas, 1969-2013 (Ranked by End-of-Period Values)



Source:

<https://research.stlouisfed.org/fred2/search?st=MSA+per+capita+incomes+1969+to+2013&t=&et=&pageID=2>

The challenge, of course, is to explain this divergent development. The problem is that there is no single, universally agreed, theoretical framework to hand. Rather, what we have is a multiplicity of different possible perspectives. The authors' approach (in Chapter 2) is to set out the main explanatory ideas and propositions from four such perspectives: international development theory

(IDT), regional science and urban economics, (RSUE), the 'new economic geography' (NEG), and institutions-economic sociology (IES).

These bodies of theory are put to work to see "how well they do as frameworks for explaining [the comparative] development" of San Francisco and Los Angeles - a sort of explanatory "detective story" or "whodunnit", as the authors phrase it (p. 26). Essentially, each of these four frameworks is interrogated to identify what it says or hypothesises about the convergence or divergence of city development paths. Each, it is argued, assigns a key role to high-wage specialization as *the* key 'motor of divergence'. In IDT, 'development' depends on an economy (a nation or a city-region) moving up the 'specialization ladder' (to progressively higher-wage, higher-productivity) sectors, so that city-regions may converge or diverge in per capita incomes depending on their relative success in this process; in RSUE, city regions are hypothesized to specialize according to their comparative advantages, but to converge in (real) per capita incomes through trade and mobility of factors; in NEG theory, city-region specializations are reinforced by agglomeration effects which tend to limit any tendencies towards income convergence between cities; while from an economic sociology viewpoint, according to the authors, local institutions, by building up local 'organization fields' or 'industrial ecologies', tend to influence (and reinforce) specialization, and thence divergence. Much of the rest of the book is organized around these four frameworks (Chapters 3-8).

Not surprisingly, none of these frameworks is found to provide a complete or adequate explanation of the divergent growth of the two case-study cities, and RSUE stands out as being the least useful. From their comparative narratives of economic development in the two cities the authors conclude that what matters for successful development is a city-region's "capacity for the organizational change that generates and consolidates specialization" (p. 199). That capacity in turn depends on the nature of the relational networks and dynamics of firms, entrepreneurs and leaders in a city-region. The divergence between San Francisco and Los Angeles is attributed in large part to the quite different relational dynamics in the two cities (Chapter 9); with those in the former stimulated by and revolving round diverse and interacting networks, and key pioneering figures within them (such as Buckminster Fuller, Steve Jobs and Stewart Brand), but those in Los Angeles involving little interaction and less organisational experimentation and lacking the imaginative entrepreneurs who had led the city's economic development in an earlier era. The authors sum up this difference in terms of the cities having evolved different epistemic communities around their key specializations, with different *zeitgeists* or 'world

views', and the failure of Los Angeles to create a new *zeitgeist* to enable it to perform as a high-income New Economy region.

Now there is much in this book to admire. While it is actually light on detailed statistical analysis, the interrogative narratives of the industrial histories of the two cities are polished and detailed. It will undoubtedly be widely read, and deservedly so, for it weaves convincing causal stories about how the two cities have developed as economic entities within the context of the rise of the New Economy (of knowledge-driven, service- and technology-based growth). The title of the book is somewhat misleading, however, since it deals with the *divergent growth* of the two cities, not with patterns of 'rise and fall'. Los Angeles remains one of the high-income cities in the United States. It may not have kept pace with San Francisco, or Boston, or New York, or Seattle, for example (see Figure 1), but it has seen its per capita income grow and can hardly be regarded as having 'fallen'; further, it has fared much better than many other US cities, including others that, like Los Angeles, have suffered from deindustrialization (such as Detroit and Cleveland, for example).

A second issue concerns the central focus in the book on specialization in high-wage tradables as the 'motor of divergence'. This emphasis on specialization was also a key motif in Michael Storper's previous book, *Keys to the City* (2013). The relative role and advantages of a specialized or diversified economic base has, of course been a recurring topic of debate in urban and regional studies, often pitched as a question of Jacobsian economies of diversified agglomeration versus Marshall-Arrow-Romer economies of local specialization. But the extensive literature on the topic indicates that the matter is in fact undecided, and confused: one can find examples to support both views (see for example, Duranton and Puga, 1999). There are certain present-day cities that owe their economic growth and success to specialization, but, at the same time, successful cities that have diversified economic structures. And many cities that formerly enjoyed success based on highly favourable tradable specializations have later found those specializations to be serious liabilities, and subsequently face the problem of structural re-orientation, adaptation and diversification around new activities: many industrial cities in the US have confronted precisely this challenge, and have solved it with varying degrees of success (Cowell, 2014; Doussard and Schrock, 2014; Hobor, 2013; see also Power et al, 2010).

And to compound the debate, there is the non-trivial problem of measurement. There are several ways of defining and measuring the degree of economic specialization, and all produce different results (see, for example, Palan, 2010). What also matters is the geographical scale of the spatial unit – here the city-

region – for which specialization is being measured. Such issues are not really discussed in this book, even though they bear critically on the basic argument about the claimed role and importance of specialization for development. What in fact is surprising from the authors' own calculations is that the degree of specialization in each of the case study city-regions is actually low: in each instance the top ten tradable sectors account for less than 10 percent of the city's tradable base (by employment), and in each city, no one single sector accounts for more than 3 percent. In the case of Los Angeles, aircraft production accounts for 2.7 percent (at the 4-digit SIC level), and the famous motion picture industry only 1.4 percent (at the 6-digit level). In San Francisco, at the 4-digit level trucking is the dominant tradable sector with 1.5 percent. Only upon moving down to a 6-digit level do computing, software design and the various related activities combine to make up a larger proportion of total tradable base employment, but still only 9.0 percent. Of course, measured in output (value added) terms the importance of these sectors in each city could well be greater. And as the authors argue, the interaction networks and epistemic communities associated with these activities gives them an importance beyond their simple employment shares. But the reader is nevertheless left wondering just what is meant by 'specialization' and its role as the 'motor of development' in these city-regions. It might well be the case that motion picture production is highly localized in Los Angeles compared to other US cities, and the computer software industry is likewise localized in the San Francisco metro-region; but the *localisation* of these sectors in these cities is not the same thing as saying the cities are *specialized* in these sectors. In the wider literature, some have sought to resolve the specialization-versus-diversity impasse by introducing other concepts, for example 'related variety' (Frenken et al, 2007) and 'diversified specialization' (Farhauer and Kröll, 2009). Yet another way of characterizing a city's economic structure is in terms of the notion of 'clustered diversity', that is the co-existence of several clusters of (specialized) activity. Further, in theory at least, it is possible for a diversified economy to be a high-wage one (if productivity across its various sectors – or sectoral clusters - is consistently high, for example).

Defining, measuring and theorizing specialization is, therefore, problematic, and the emphatic claim made in this book for its fundamental importance should not be accepted uncritically. Others in fact have argued that it is the tasks and functions that a city's workers perform that is more important than specialization (Duranton and Puga, 2005; Michaels et al. 2013). At the same time, highly interesting work is emerging that suggests that an economy's 'product space complexity' is the real key to its development and income growth (Hausmann and Hidalgo, 2006, 2010, Hidalgo et al, 2007; Hidalgo and

Hausmann, 2009). In this perspective, it is *diversification in product space*, not sectoral specialization, that matters; it is an economy's ability to accumulate capabilities and to combine them to produce new products that drives successful development. The authors make partial and passing reference to this literature, but could have devoted much more attention to its usefulness for understanding the comparative and divergent development and growth paths of cities. In fact this new 'economics of complexity and product network structure' has major implications for development theory, trade theory and the theory of comparative advantage, all highly pertinent to the study of urban-regional economies.

Which brings me more directly to the question of theory. In using four different theoretical schemas to distil 'testable' propositions about (comparative) city-region development the authors raise a key issue. In economic geography and regional and urban studies we now have a plethora of explanatory frameworks and perspectives for this or that aspect of city or regional economies. None provides a comprehensive explanation of any such economy as a whole, or why one such economy should differ from another. And this is the case in this book. So what should we do? Do we search for the 'best' theory, in terms of explanatory reach, recognising that it will never cover all aspects of city economic development? Or do we undertake some sort of 'theoretical bricolage', or 'engaged pluralism' using particular elements from different theories in some complementary way to produce an explanation (as seems to be the thrust in this book)? Or do we seek some sort of higher-level 'encompassing framework' capable of subsuming and synthesizing the ideas from different theories. Should we be seeking a 'big picture' account that explains the different development and performance of different cities in terms of their relationship to and role in the wider system (national and global) of which they are a part and in which they compete? These questions receive far too little discussion and debate in economic geography and regional studies. Yet if the aim, as in this book, is to compare the economic development paths of two large complex systems – two major city-regions – these questions are precisely those that loom large.

To some extent I can see why the authors include RSUE and NEG in their list of theoretical frameworks to be 'tested'. Both have accumulated large literatures in recent years, much of it by American scholars, and each casts certain light on particular aspects of urban and regional economies. But neither is really concerned with their long-run *development* or evolution. Most of the models found in these frameworks are equilibrium based and to the extent that they deal with the convergence or divergence of urban or regional economies over time, the assumption is that the economic landscape tends toward some equilibrium pattern. In the case of NEG, shifts in that pattern are assumed to be shifts from

one equilibrium outcome to another: the theory is essentially an exercise in comparative statics, rather than comparative developmental evolution.

Given the authors' concern with the latter, it is somewhat curious that they do not foreground and frame their approach explicitly in evolutionary-theoretic terms. The core focus of evolutionary economics, and its offspring evolutionary economic geography, is precisely on how economies develop and evolve structurally, organizationally, technologically, and institutionally (see, for example, Day, 2004; Metcalfe et al, 2006; Nelson, 2006, 2011; Boschma and Martin, 2010). The focus is on *adaptive growth* and the role that technological innovation, firm dynamics, institutional and cultural forms, and organisational change play in this process. Adaptive growth involves economic actors taking actions that break from previous behaviors, in an environment that is in continual flux because of the innovation and competitive changes taking place. While evolutionary economic geography has perhaps focused too much on industrial change and development, it lends itself directly to the study of development in a more general sense (see, for example, Nelson, 2006; Martin and Sunley, 2015). Not only this, but it is possible to incorporate ideas relating to specialization, agglomeration and institutions directly into an evolutionary-developmental framework.

Further, recent developments in evolutionary economics assign an important role to case-study research in the construction of theory. This new 'history-friendly' approach (see Orsenigo, 2005; Malerba, 2010) involves grounded 'appreciative theorizing' to analyse the evolution of firms, industries and sectors, based on detailed, concrete causal accounts of specific case studies. It seeks to overcome the tension between detail-rich, empirical historical case-study accounts and more general theories and principles. The aim is not only to derive a full explanation of the development of the specific industry or sector concerned, but to try to generalize inductively from this particular history and to extract robust insights into the observed patterns of industrial evolution more widely. There are useful lessons here for how we might construct and use a methodology of 'history-friendly' 'contrastive case-study comparison' in economic-geographic research. Indeed, the value of contrastive case studies is one of the central lessons I took from this book, and I suspect, and hope, that it will have a catalytic role in stimulating further city research based on this methodology.

References

- Binelli, M. (2013) *The Last Days of Detroit: Motor Cars, Motown and the Collapse of an Industrial Giant*, London: The Bodley Head.
- Boschma, R. and Martin, R.L. (Eds) (2010) *Handbook of Evolutionary Economic Geography*, Cheltenham: Edward Elgar.
- Cowell, M. (2014) *Deindustrialization: Adaptive Resilience in American Midwestern Regions*,
- Day, R. (2004) *The Divergent Dynamics of Economic Growth: Studies in Adaptive Economising, Technological Change and Economic Development*, Cambridge: Cambridge University Press.
- Dijkstra, L., Garcilazo, E. and McCann, P. (2013) The economic performance of European cities and city-regions: myths and realities, *European Planning Studies* 21, 3, 334-354.
- Doussard, M. and Schrock, G. (2014) Stability amid industrial change: The geography of US deindustrialisation, Ch 24 in Bryson, J. Clark, J. and Vanhan, V. (Eds) *Handbook of Manufacturing Industries in the World Economy*, Chichester: Edward Elgar, pp. 381-396.
- Duranton, G. and Puga (1999) Diversity and specialisation in cities: Why, where and when does it matter? Research Papers in Environmental and Spatial Analysis No. 56 (Department of Geography & Environment, London School of Economics).
- Duranton, G. and Puga, D. (2005) From sectoral to functional urban specialisation, *Journal of Urban Economics*, 57, pp. 343-370.
- Evans, R. and Karecha, J. (2014) Staying on top: Why is Munich so successful? *European Planning Studies*, 22, pp. 1259-1279.
- Farhauer, O. and Kröll, A. (2009) Diversified specialisation: going one step beyond regional economics' specialisation-diversification concept, *Jahrbuch für Regionalwissenschaft*, 32, 1, pp. 63-84.
- Frenken, K., Van Oort, F.G. and Verburg, T. (2007) Related variety, unrelated variety and regional growth, *Regional Studies*, 41, pp. 685-697.
- Glaeser, E. (2005) Reinventing Boston: 1640-2003, *Journal of Economic Geography*, 5, pp. 119-153.
- Hausmann, R. and Klinger, B. (2006) Structural transformation and patterns of comparative advantage in the Product space, *Working Paper 128*, Center for International Development, Harvard University,
- Hausmann, R. and Hidalgo, C.A. (2010) The network structure of economic output, *Mimeo*, Center for International Development and Harvard Kennedy School at Harvard University, (<http://arxiv.org/pdf/1101.1707.pdf>)
- Hidalgo, C. A., Klinger, B., Barabasi, A.L. and Hausmann, R. (2007) The product space conditions the development of nations, *Science*, 317, pp. 482-87.

- Hildago, C.A. and Hausmann, R. (2009) The Building Blocks of Economic Complexity, *Proceedings of the National Academy of Sciences of the United States of America*, 106(26), pp. 10570-10575.
- Hobor, G. (2013) Surviving the era of deindustrialization: the new economic geography of the urban rust belt, *Journal of Urban Affairs* 35, 4, 417-43.
- Jacobs, J. (1969) *The Economy of Cities*, New York: Random House. Vintage Books,
- Malerba, F. (2010) Industry evolution and history-friendly models. Plenary Paper presented at the International Schumpeter Society Conference on Innovation, Organisation, Sustainability and Crisis, Aalborg, Denmark, 21–24 June 2010 (available at: <http://www.schumpeter2010.dk/index.php/schumpeter/schumpeter2010/paper/viewFile/491/208>).
- Malerba F., Nelson R., Orsenigo L. and Winter S. (1999) History-friendly models of industrial evolution: the computer industry, *Industrial and Corporate Change* 8, 3–40.
- Marksuen, A. and Schrock, G. (2006) The distinctive city: divergent patterns in growth, hierarchy and specialisation, *Urban Studies* 43, pp. 1301-1323.
- Martin, R.L., Sunley, P., Tyler, P. and Gardiner, B. (2016) Divergent Cities in Post-Industrial Britain, *Cambridge Journal of Regions, Economy and Society*, 9, in press.
- Metcalf J. S., Foster J. and Ramlogan R. (2006) Adaptive economic growth, *Cambridge Journal of Economics* 30, 7–32.
- Michaels, G., Rauch, F. and Redding, S. (2013) Task specialisation in US cities from 1880-2000, *Working Paper 18715*, National Bureau of Economic Research, Washington.
- Moretti, E. (2010) Local multipliers, *American Economic Review, Papers and Proceedings*, 100, pp. 1-7.
- Nelson, R. (2006) Economic development from the perspective of evolutionary economic theory, Working Papers in Technology Governance and Economic Dynamics No. 2, Tallinn University of Technology, Tallinn.
- Nelson, R. (2011) Economic development as an evolutionary process, *Innovation and Development* 1, pp. 39–49.
- Orsenigo, L. (2005) 'History friendly' models of industrial evolution,
- Palan, N. (2010) Measurement of specialisation: the choice of indices, *Working Paper 62*, Research Centre for International Economics, Vienna, Austria.
- Power, A., Plöger, J. and Winkler, A. (2010) *The Fall and Rise of Great Industrial Cities*, Bristol: The Policy Press.
- Storper, M. (2013) *The Keys to the City: How Economics, Institutions, Social Interactions and Policies Shape Development*, Princeton: Princeton University Press.