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# 1. Introduction to the *Handbook on Regional Economic Resilience*

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## 1. INTRODUCTION AND OVERVIEW

In 2008, Mervyn King the then Governor of the Bank of England, spoke about the end of the NICE decade, a decade characterised across much of the global economy by Non-Inflationary Continuous Expansion. In the decade since enhanced levels of economic shocks and uncertainty for the future across national, regional and local economies has witnessed a growing interest amongst academics, policymakers and practitioners in the concept of economic resilience. One of the defining questions emerging from this decade is why some places are more able to cope with economic shocks than others. This is not simply an academic or policy question. It has real and lasting implications for the livelihoods and life chances of households around the world.

In seeking out answers to this question, a rich literature on both the nature and the characteristics of economic resilience has begun to emerge, particularly as it pertains to regional and local economies. Initially drawing on the traditions of ecological resilience and concepts from the fields of engineering, the concept of economic resilience is now beginning to mature and contribute insights to the wider resilience literatures. Yet as it matures, strong points of dissonance and debate can be found across the sub-discipline providing fertile ground for further methodological and conceptual development. The current *Handbook* is intended to synthesise and take forward this debate by drawing together critical insights from some of the leading writers in the field to examine what is known about regional economic resilience, what is contested and where the key avenues are for future exploration. We have intentionally included contributions from a range of different perspectives, from a range of different international contexts, and from scholars across a range of different career stages, in an effort to highlight the breadth of this emerging field of study and giving voice to its richness and diversity.

No consideration of economic resilience can begin without first understanding what we mean by the term itself. Original conceptions of resilience were grounded in engineering and ecological traditions, emphasising the ability to withstand a shock or, failing this, to recover (or bounce back) from a shock. This highlights the ability of an economy, firm or a household to cope with the consequences of a shock. As exploration of economic resilience has developed, so our understanding of the concept has broadened to recognise the importance of both the ability of actors to adapt to changing circumstances and for the economic system itself to transform. These approaches draw strongly on evolutionary theories of economic change and models of complex adaptive systems. In this *Handbook*, our contributions reflect the developing theorising around the conception of resilience and we deliberately avoid presenting one common definition of economic resilience. Rather, we demonstrate the developing breadth of conceptions

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as a means of exploring the richness of debate and identifying areas of potential commonality and dissonance.

Debates about resilience are also characterised by plurality in terms of the objects of analysis. In discussions of economic resilience a distinction is often made between the economic system as a whole (whether that is local, regional, national or supranational) and individual actors (such as firms, households, policy bodies or other actors). In this *Handbook* we explicitly focus on the economic resilience of local and regional economies. In particular we are interested in that critical question as to why some regions are more affected by economic shocks than others and why some prove more able to recover and to do so more quickly. Not only are the effects of economic shocks distributed unevenly, despite their often contagious nature, our understanding of the processes by which local and regional economies respond and react are still developing.

Part of the richness of the literature surrounding economic resilience is the wide variety of shocks that are subject to examination, ranging from economic shocks and recessionary events, to those that are induced through natural or anthropological events, such as earthquakes, floods, technological shifts or political decisions. In the past decade, the rising prevalence of debate relating to future uncertainties, whether this is around global climate change or, in the context of the European Union (EU) the withdrawal of the UK from the EU (BREXIT), has further stimulated interest in the resilience of economies to shock events. There is debate as to whether the factors that influence economic resilience to sudden onset events are similar to those that effect resilience to longer duration or slow-burn events that may play out over a period of decades. Indeed, some authors in this volume argue that the latter should not be considered in discussions of economic resilience, holding that it is a wholly separate process.

There are criticisms of the current emphasis on economic resilience. Chief amongst these is that the concept is ‘fuzzy’ and ill-defined. In her seminal paper on fuzzy concepts and scanty evidence Ann Markusen (1999) argues against the trend towards concepts that lack clarity and rigour and are difficult to test or operationalise, particularly where the empirical base is limited. Many authors suggest that resilience is a problematic concept arguing, for example, that it over emphasises individual attributes. Other researchers question the distributional aspects of resilience outcomes, asking ‘resilience for whom?’. Recent research has also challenged the notion that economic resilience is always a positive attribute – if it only relates to managing to ‘get by’ then this may not be a desirable outcome. To counter this, advocates highlight the importance of adaptability and transformation, raising questions as to the capacities required to enable these attributes and the ‘traps’ that might prevent this. Issues such as these run throughout many of the chapters included in this *Handbook* and form an important consideration in our critical analysis of what constitutes economic resilience and how this might be measured.

Whilst there are aspects of Markusen’s wider critique that are pertinent to the rising scholarship in the field of economic resilience, some authors (Martin and Sunley, Chapter 2 in this volume) see value in variations of definition and approach as it serves to stretch the boundaries of understandings of economic resilience in policy and practice. The contributions in this *Handbook* are thus deliberately heterodox in perspective and approach and are chosen to reflect the breadth of emerging scholarly enquiry and debate.

These debates demonstrate the dynamism of debates in the field of economic resilience and emphasise the timeliness of this *Handbook*. The field is at a critical juncture where

the compilation of evidence is beginning to highlight not just what has been learnt, but also how many questions and issues warrant further investigation, particularly if resilience is to be of utility in framing policy action and interventions. Based on the work to date, researchers are also beginning to raise valuable questions as to the ontologies that underpin our assumptions and our thinking. By highlighting the multiple resiliences that can co-exist or be produced (Simon and Randalls, 2016) scholars not only help to critically appraise the nature of policy approaches adopted but also contribute to wider conceptual and theoretical developments. In doing so, however, we should not lose sight of the fact that one of the most pressing challenges is to ensure that we are able to operationalise the concept of local and economic resilience so that it has an applied value as well as strong theoretical foundations. Together, the chapters set out in this *Handbook* provide a valuable contribution to addressing this challenge.

## 2. KEY QUESTIONS AND CHALLENGES

More specifically, the chapters in this *Handbook* focus on addressing a number of key questions that are fundamental to developing a deeper understanding of regional economic resilience.

First, the *Handbook* addresses the contemporary debate around the conceptualisation of regional economic resilience. It illustrates areas of commonality, particularly around evolutionary framings of economic resilience, but also areas of dissonance. One of the key questions facing scholars surrounds the types of shock that regional economies should be resilient to, and over what timescales. This highlights how critical studies of economic resilience can contribute to wider debates in Evolutionary Economic Geography (Henning, 2019) and progress understanding of how economic processes work across territories more broadly. An increasingly prominent debate in the resilience literature considers the distributional dimension to resilience outcomes, asking the challenging question of ‘resilience for whom?’. This is particularly pertinent for researchers considering the economic resilience of regions. The common challenge is to move beyond perspectives that regard resilience as no more than today’s buzzword or *zeitgeist* towards a new construction that challenges prevailing economic orthodoxies. In developing a more heterodox approach, regional economic resilience may contribute to the emergence of a new paradigm that takes a longer-term and more holistic view of what policy goals are desirable.

A second key question focuses on the measurement of regional economic resilience. Longitudinal analysis of economic trajectories is an essential element of economic resilience analysis (see for example, Webber et al., 2018). It is not enough, however, to simply suggest that long-term historical trends matter, or that regional economic futures depend on their past. As approaches to the measurement of economic resilience develop, so new and more complex questions arise. One of the most challenging is what to measure. Different authors choose to use different indicators, some of which are grounded in the different dimensions of economic resilience emerging on conceptual thinking, some which are more composite and aligned to the need for more functional indicators for practical measurement. Different indicators can change the measurable resilience outcomes for regions. There are also variations in the units of analysis being used by researchers,

reflecting the challenge of discerning the appropriate spatial scale for resilience analysis and the need to match policy and practice needs. As such, there are a range of technical and political factors at play. A further challenge relates to appropriate methodologies and approaches. In seeking to identify the factors that determine economic resilience, much research is limited to relatively simple bivariate analysis or the use of composite indexes. The use of multivariate approaches remains less common owing to the conceptual and methodological challenges of managing complexity, trade-offs and multiple pathways.

A third key focus for resilience research is analysis of the various determinants of an economically resilient regional economy. This has spawned a wide-ranging literature that has contributed to a strengthening of the understanding of which factors are most commonly associated with regional economic resilience and increasing recognition of the breadth of influences, including structural factors and those pertaining to actors and agency. What is also evident and a key feature of the chapters included here is the range of different approaches that can be taken to untangle what are often complex relationships between different factors shaping economic resilience in regions.

What is increasingly apparent is that many of the determinants of economic resilience are highly contingent on the nature of the shock that is experienced and the particular interplay between factors *within* regions as well as wider *external* forces and relationships. One of the challenges for researchers is to move beyond exploring the correlates of regional economic resilience to identify its more fundamental, structural determinants (Thorén, 2014). To do so will mean embracing the position of the regional economy in wider economic settings, recognising the role played by macro-economic processes (Webber et al., 2018) as well as national and international actors. Research is increasingly drawing attention to the multi-scalar dimension of regional economic resilience. The role of national stabilisers in providing a buffer to economic shocks has long been recognised, but attention is now also being given to the role of international assistance schemes, multilateral programmes and intra-company transfers in the provision of capital or experience that can assist in promoting regional economic resilience. Allied to this, a relatively recent area of exploration for economic resilience researchers is the role played in regional economic resilience by the longer-term and temporary migration of workers and their remittances to households that remain behind. Fundamentally, this recognises the complex interconnections that exist between regional economies and the wider world, emphasising that regional economic resilience does not occur in isolation.

A fourth key issue is that of human agency and choice. One of the fundamental developments in the field of regional economic resilience over the past decade has been the recognition of the importance of agency in shaping resilience outcomes. However, empirical research into the role of decision-making by firms, households, public authorities and other actors on regional economic resilience remains sparse and is largely implicit in most analyses. Here we raise some of the emerging questions and challenges surrounding the role of policy intervention in resilience, many of which connect to the unsettled definition and measurement of the concept itself. Deepening understanding of the role of institutions in framing resilience and the interplay between individual actors and collective responses remains an area for fruitful endeavour.

The final question that we highlight here concerns the role of innovation in promoting economic resilience. There is an increasingly substantive literature that stresses the role of innovation in promoting regional economic resilience. However, despite this attention, the

empirical evidence demonstrating how greater levels of innovation contributes to regional economic resilience remains limited. In part, this is a challenge of the data. Identifying robust, yet discrete, measures of both innovation and of economic resilience is remarkably difficult. However, there is also a question of attribution. To what extent are the innate characteristics underlying innovation performance and resilience outcomes, such as an ability to adapt or to transform, shared traits? To put it another way, are firms – or regions – that innovate naturally more resilient because of these shared characteristics or is it the novel and improved goods and services that emerge from innovation activities that confer the levels of resilience observed?

### 3. ORGANISATION OF THE BOOK

In addressing these and other questions, this *Handbook* is structured around three parts. Part I explores emergent thinking on how to conceptualise regional economic resilience. Part II examines the measurement of regional economic resilience, and Part III provides empirical analysis of critical factors influencing regional economic resilience from a range of different geographic and policy contexts.

Part I consists of four chapters which together provide a valuable synthesis of the current state of academic thinking in regional economic resilience and help to provide some pointers towards emerging research agendas. In Chapter 2, Martin and Sunley set the context for this *Handbook* through an exploration of the evolution of the concept of economic resilience. They highlight how our notion of what constitutes regional economic resilience has developed to incorporate ideas of transformation and transition as well as resistance and recovery. Yet, there are still many areas of contestation including around fundamental concepts such as what actually constitutes resilience and how this might be measured. This vibrant debate is helping to shape a much more informed and nuanced understanding of regional economic resilience and contributes to contemporary debates in economic geography. In demonstrating the limits of the concept, as well as the strengths, they caution that the popular notion of ‘constructing’ regional economic resilience through policy interventions may be running ahead of conceptual understanding.

In Chapter 3, Bristow and Healy argue that the role of agency in shaping regional economic resilience is fundamentally under explored. The choices and actions of agents, whether these are households, firms, public bodies or others, can have significant implications for how resilience processes play out across geographies. Incorporating an agency perspective requires a stronger appreciation of what shapes behaviours and how agents make decisions under conditions of uncertainty. This highlights the contextual significance of place and time and suggests that appreciation of regional economic resilience cannot be constrained to a search for structural determinants alone.

In Chapter 4, Hu and Hassink continue the theoretical exploration through an examination of the interplay of adaptation and adaptability. Contending that these concepts are amongst the most debated in urban and regional resilience research, they suggest that adaptation relates to the ability of a system to maintain its existing functions, through path extension, and that adaptability describes the ability to transform to new development paths. In their contribution they argue that the two concepts should not be seen as separate but as inter-related and dialectical dimensions of resilience. They sug-

gest that uneven regional resilience can be explained by variations in the framework of adaptation–adaptability relations between regions, particularly in relation to slow-burn shocks. Finally in this Part, Evenhuis provides a valuable reprise in Chapter 5 of several of the key contemporary debates in the field of regional economic resilience. In his work he emphasises the importance of adaptive capacities in shaping regional economic resilience whilst acknowledging that many of the underlying capacities of resilience can only be inferred from the data available. He also stresses the role of politics and ontologies in framing different definitions of resilience. In considering what this means for a new research agenda for regional economic resilience, he highlights the importance of engaging in comparative case study research that allows the processes of reorganisation and reorientation within regional economies to be fully explored.

Part II comprises six chapters that together provide examples of the different ways in which regional economic resilience is being measured at the present time. In Chapter 6, di Caro draws on five past studies of local Italian labour markets to explore the significance of factors such as the unit of analysis used, the time period covered, issues of measurement and different determinants of resilience in the assessment of regional economic resilience. In his conclusions, di Caro emphasises the areas where further research is required but also highlights how a focus on regional economic resilience has brought new insights to some long-standing debates. In Chapter 7, Pontarollo and Serpieri demonstrate an alternative empirical approach to measuring resilience through the development of a Regional Economic Resilience Indicator. Using principal components analysis they take three indicators and construct a composite index that is applied to 271 European Union (EU) regions. Their analysis provides insights that can help to inform policymakers of the relative significance of national-level structural reforms and more localised, place-specific, actions.

In Chapter 8, Mardaneh, Jain and Courvisanos, move the focus of regional economic resilience away from the EU to consider how 76 Australian functional/income regions have responded to various shocks over seven Census periods. Their work highlights how resilient regions are able to demonstrate timely changes in the pattern of regional industries without experiencing significant falls in employment or income, despite experiencing certain shock events. Drawing on four-phase panarchy models, they confirm the importance of diversity and flexibility as an attribute of resilient economies and stress the significance of the capacity to move between phases to enable a region to adapt, innovate and grow. In Chapter 9, Peter Benczur and colleagues explore a new approach for operationalising regional economic resilience. In doing so they move beyond standard economic measures to also include indicators of societal well-being. Using EU regions as a testbed they highlight the substantial differences between regions' resilience performance and confirm that there is no 'one-size-fits-all' characteristic that can be used a common indicator for regional economic resilience. They also note how the empirical evidence suggests different regional behaviours in the immediate aftermath of a shock and in the longer-run.

In Chapter 10, Diodato and Weterings focus on how to empirically observe the re-orientation dimension of resilience and test its relationship to a region's ability to resist or recover from a shock. The chapter defines re-orientation as the reallocation over time of productive resources across regions and industries, and develops a tool for its measurement which is based on a region's ability to match unemployed workers with firms with job vacancies. Using the example of the Netherlands, the analysis shows that

re-orientation is an essential feature of the adaptation process of a regional economy and that under shocks and also episodes of employment growth, regions undergo more re-orientation than they normally do. It also finds that the recovery of regions is affected by the region's options for re-orientation as shaped by its inter-sectoral and inter-regional labour mobility.

Our final chapter in Part II, by Tasos Kitsos, takes the example of Great Britain to explore economic resilience at a more local scale. Drawing on data from local authority districts in Great Britain he identifies differences in economic resilience outcomes to the 2008 recession. Kitsos then examines the factors that served to mitigate the effects of the recession to suggest that past economic performance, skills and demographics were all significant factors for those areas that proved to be more resilient.

Finally, Part III brings together a number of chapters exploring empirical analyses of key determinants of resilience in different contexts. In Chapter 12, Jérôme Vicente focuses on exploring the critical role played by the structural properties of knowledge networks in shaping the ability of regions to renew themselves over time and to be resilient. The chapter is founded on the perspective that regional systems of innovation can be conceived primarily as knowledge networks whereby network structures are comprised of nodes (organisations) and ties (voluntary knowledge flows). Looking at how different nodes connect to each other helps reveal the structural properties of the system and the topological properties of the networks that emerge from the micro behaviours of actors embedded in regional systems. The chapter shows how these topological network properties, namely their connectivity, hierarchy and assortativity, provide critical insights into why certain regions succeed in renewing and reorganising their resources, whilst others fail. In Chapter 13, Psycharis, Tsiapa and Tselios examine empirically the contribution of exports to regional resilience by providing empirical evidence from the Greek regions during the period 2008–2012. Exports have been a core subject in regional analysis and are regarded as one of the main drivers of economic performance of the regions. However, the role of exports during economic recessions has attracted relatively less attention in the literature. This chapter provides empirical evidence from Greece, highlighting that exports constitute one of the factors shaping regional resilience during the economic crisis. However, initial conditions, sectoral specialisation and adaptation capacity of the regions also play a critical role in influencing export performance and hence the resilience of regions to crisis.

In Chapter 14, Beqiraj et al. focus on NUTS2 regions of the Benelux area and a methodology for measuring resilience in regional business cycles. They focus on the relative ability of regions to absorb business cycle shocks (recoverability) and their ability to isolate themselves from external disturbances (resistance). Based on Bayesian estimations of regional dynamic stochastic general equilibrium (DSGE) models, the chapter focuses upon output variability around its natural level. After estimating region specific models by building counterfactual DSGE reference models, the authors disentangle the capacities for recovery and resistance in each region within the Benelux over the period 1981–2015. The results reveal very different capacities across the regions and highlight the significance of policy decisions taken in the aftermath of previous crises.

Chapter 15 focuses on the burgeoning interest in the resilience concept in economic development policy and planning discourse. Margaret Cowell explores the extent to which regional planning organisations in the United States have adopted the term 'resilience' in

their economic development plans and consider how resilience is defined and used within these policy documents. The chapter finds that whilst resilience is increasingly referred to and upheld as an important objective, it is poorly defined and articulated in plans. This raises questions regarding the connections between regional economic theorising and analysis and policy discourse and practice. Chapter 16 by Healy and Bristow continues the policy focus by exploring the role that external interventions can play in promoting resilience and considers whether they are able to provide an additional buffering mechanism in times of crisis.

Drawing on the experience of a number of EU Member States in implementing Structural Fund programmes during the 2008/09 financial crisis, Healy and Bristow explore how flexibly the Structural Programmes were deployed to support regions through the crisis, and draw out key issues relating to risk-sharing across different layers of policy and governance. In the final chapter, we draw together some key conclusions from the *Handbook's* various themes, and reflect on its contribution to our understanding of resilience.

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