

# Regional Economic Resilience: European Experiences and Policy Issues

Rüdiger Wink

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**Abstract** This introductory paper looks at recent debates on the concept of regional economic resilience and focuses on three elements of debate: (1) indicator systems and consideration of the normative content of the concept; (2) the evolutionary dimension of the concept and its inter-disciplinary linkages; (3) the policy dimension and challenges for the development of policy recommendations. The author discusses the state of the debate and presents some directions for future research priorities.

**Keywords** Regional economic resilience · Evolutionary economic geography · Multilevel governance

## Regionale ökonomische Resilienz: Europäische Erfahrungen und politische Dimension

**Zusammenfassung** Dieser einführende Artikel betrachtet aktuelle Debatten über das Konzept regionaler ökonomischer Resilienz und konzentriert sich auf drei Aspekte dieser Debatte: 1) Indikatorensysteme und der normative Gehalt des Konzepts; 2) die evolutionäre Dimension des Konzepts und ihre interdisziplinäre Verknüpfung; 3) die politische Dimension und Herausforderungen einer Entwicklung von Politikempfehlungen. Der Autor diskutiert den Stand

der Forschung innerhalb der Debatten und präsentiert einige Ausrichtungen für zukünftige Forschungsschwerpunkte.

**Schlüsselwörter** Regionale ökonomische Resilienz · evolutionäre Wirtschaftsgeografie · Multilevel Governance

## 1 Introduction

The career of “regional economic resilience” as a concept for regional economic policy is closely related to recognition of the latest global recession with its exogenous shocks to regional economic performance, combined with observations of the increased frequency of these shocks due to a multitude of potential causes (e.g. natural catastrophes, terror attacks, technological breakdowns, economic bubble processes or political conflicts) and an increased mutual interdependence between regions along globalised value chains and market systems (Rose/Liao 2005; Duval/Elmeskov/Vogel 2007; Swanstrom/Chapple/Immergluck 2009; Christopherson/Michie/Tyler 2010). In Europe, an intensified discourse on regional economic resilience can be particularly observed in the United Kingdom due to the relatively long duration of the recession, severity of structural challenges and threat of terror attacks experienced there.<sup>1</sup> With increased economic pressure on member countries of the

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Prof. Dr. R. Wink (✉)  
Fakultät Wirtschaftswissenschaften,  
Hochschule für Technik, Wirtschaft und Kultur Leipzig,  
Gustav-Freytag-Straße 42A, 04277 Leipzig, Deutschland  
e-mail: wink@wiwi.htwk-leipzig.de

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<sup>1</sup> Examples in the United Kingdom include several governmental initiatives on ‘climate resilience’, ‘resilience and security’, initiatives on local economic resilience, regional resilience index projects and governmental support for business continuity management (CLES 2010; UK Cabinet Office 2011; Experian 2012), as well as the special issues by the Cambridge Journal of Regions, Economy and Society on “The Resilient Region” (first issue in 2010) and on “The Geographies of Austerity” (third issue in 2011).

European Monetary Union (EMU) in sovereign debt crises, the discourse on economic resilience has also reached more and more member countries. As part of this process, the European Spatial Planning Observatory Network (ESPON) initiated a transnational research study on the resilience of regions in Europe.

Within their “Territorial Agenda for the European Union 2020 (TA 2020)”, the ministers in the European Union responsible for spatial planning and territorial development stated that the global financial and economic crisis made the increased exposure of European regions to external shocks more visible, but they also stressed that the crisis provided an opportunity for a transition towards more sustainable and resource-efficient economic structures (European Union 2011). These elements—vulnerability and exposure to external shocks, i.e. the ‘crisis’ element, and adaptability and adjustment to structural challenges, i.e. the ‘opportunity’ element—still dominate the debate on the relevance and consequences of regional economic resilience concepts as paradigms for policy and regional governance. Furthermore, economic theory has just begun to reflect the origins of resilience concepts in other disciplines such as ecology, engineering, medicine, and also psychology and sociology (Martin 2012).

This introductory paper to the special issue on European experiences with regional economic resilience concepts takes up some theoretical and practical approaches to look at upcoming debates on regional cohesion policies for the coming years. In particular, the inter-disciplinary roots and debates of the concept are considered in order to understand potential differences between the debate on regional economic resilience and other existing concepts and debates. Basic elements of these different perspectives and remaining research questions have already been presented in Christopherson/Michie/Tyler (2010). In this paper, however, these perspectives will be applied to European experiences and amended by more recent insights on preconditions for and causes of regional economic resilience.

Three main lines of debate will be discussed in the following sections:

- Indicators of regional economic resilience
- The evolutionary dimension of regional economic resilience
- Policy implications of the debate on regional economic resilience

## 2 Indicators of Regional Economic Resilience

The tradition of regional economic performance concepts focuses particularly on conventional economic performance indicators in economic analyses; such indicators include

Gross Domestic Product (GDP), Gross Value Added (GVA), and employment or unemployment quotas (Rodrik 1998; Eichengreen/Bordo 2002; Fingleton/Garretsen/Martin 2012; Cerra/Panizza/Saxena 2013). Studies of the impact of the global financial crisis on the United States and European regions have shown quite mixed results for metropolitan and peripheral regions. Many manufacturing regions were hit negatively but bounced back relatively quickly (Davies 2011; Christopherson 2011; in contrast to this Dawley/Marshall/Pike et al. 2013). Furthermore, exposure to regional bubble processes and dependence on state transfers have played an important role for explanations of differences. Within economic theory, this orientation has helped to support established models and discussions like the debate on hysteresis in macroeconomic theory from the 1990s (see for an overview Göcke 2002; Raurich/Sala/Sorolla 2006; Cross/Grinfeld/Lamba 2009). Accordingly, recommendations for structural changes from these concepts, such as labour market reforms and the liberalisation of markets, still play a major role in the macroeconomic strand of literature (Blanchard/Wolfers 2000; Göcke 2009; critical on this MacKinnon/Driscoll Derickson 2013). Macroeconomic theory dealing with economic stabilisation crises has influenced concepts of resilience, and, similarly, consideration of adjustments within resilience concepts has also had an impact on macroeconomic models. In contrast to models of economic vulnerability that simply consider short-term impact, computable general equilibrium (CGE) models include adjusting behaviour within regional economies to reduce negative impact (Rose/Liao 2005; Maisonnave/Pycroft/Saveyn et al. 2012). These macroeconomic models, however, still refer to equilibriums, i.e. they consider disturbances to existing equilibriums, adjustment behaviour afterwards and a new equilibrium as a result, and measure time and costs for assessment of effects.

Besides the close reference to equilibriums, such macroeconomic approaches might be thought to focus too narrowly on ‘objective’ indicators to define vulnerability and resilience. This focus on ‘objectivity’ may miss differences in cognition processes in regions, which influences acceptance of adjustment activities, and psychological concepts related to capabilities to change. Accordingly, concepts of vulnerability and resilience, as social constructs, look for human perceptions and specificities in recognising and coping with external shocks and changes. Following Jansen and Ostrom (2006), Christmann/Ibert/Kilper et al. (2012) stress the need to understand the role of human perception of hazards and options to prevent or overcome damages from these hazards. Hill/St. Clair/Wial et al. (2011) describe their experiences in Grand Forks (US), where ‘objective’ data like GDP and employment showed no resilience to crises, but people in the area expressed satisfaction with development in the region. In contrast, Karanikolos/Mladovsky/

Cylus et al. (2013) observed increased numbers of suicides and severe health problems—in particular infectious diseases—in South European EMU countries and linked this to fiscal austerity programs. Similar to the “Territorial Agenda for the European Union 2020 (TA 2020)” (European Union 2011), other studies link the recognition of economic crisis and its impact to issues of sustainability by stressing the ecological and social dimensions of potential shocks and the need to find adjustment pathways meeting sustainability objectives (see e.g. Schneidewind 2013). This perspective opens up opportunities to connect the debate on regional economic resilience with issues of regional vulnerability, in particular driven by recognitions of climate change (Christmann/Ibert/Kilper et al. 2012, with further links). The search for fast sets of indicators has led to several studies on regional levels. For example, the German Pestel Institute looked for resilience indicators on a regional level representing social security, housing, transport, energy, economy and land use (Pestel Institut 2010). Strikingly, most areas in economically lagging parts of East Germany reached high scores of resilience within this study. In the United Kingdom, Experian designed a resilience indicator scheme referring to business, people, place and community (Experian 2012). Similar studies have been designed in the United Kingdom for single regions (AWM Strategy Team 2010; Ekosgen 2011).

For the future of resilience studies it will be important to understand the normative content of any indicator scheme. Therefore, any policy setting and pursuit of resilience objectives on a regional level will have to cope with the challenge of adjusting to normative positions within the region, and there is a risk of dealing with resilience as a ‘fuzzy concept’ with no common interpretation. Within this special issue, the papers aim to achieve a broader perspective on regional economic resilience and its identification by reflecting on the relevance of resilience and its normative content for specific regions.

### 3 The Evolutionary Dimension of Regional Economic Resilience

Due to its reference to macroeconomic models of equilibrium and hysteresis, most economic studies of regional economic resilience start with looking at short-term economic performance in times of crisis (Swanstrom/Chapple/Immergluck 2009; Hervas-Olivier/Jackson/Tomlinson 2011). Correspondingly, short-term policies to cope with external shocks on regional economies focus on conventional fiscal and labour market policies to prevent further decline in demand and employment, such as, for example, the scrapping of bonus programs in many developed countries in 2009, short-term allowances in Germany, Japan and

Italy, and public loan programs to secure liquidity in firms affected by credit crunches or the insolvency of major clients (Cerra/Panizza/Saxena 2013). However, the intensity of GDP decline and the time required to recover, as well as the impact of policy measures, depended on the initial economic and institutional structure. Furthermore, any structural adjustment was influenced by long-term processes and mentalities within the regions. Consequentially, many studies on regional economic resilience looked for processes instead of results (e.g. Simmie/Martin 2010; Lukesch/Payer/Winkler-Rieder 2011). Following Martin (2012), three main strands of argumentation can be distinguished:

- “Engineering (equilibrium-focused) resilience”: Here the main focus is on maintaining or returning to an equilibrium and a given structure (examples for application to economic concepts can be found in Rose/Liao 2005; Swanstrom/Chapple/Immergluck 2009; Hill/St. Clair/Wial et al. 2011).
- “Ecological (panarchy-focused) resilience”: Here the main focus is on stress caused by shocks that a system can sustain and adjustment along adaptive cycle processes (see e.g. Martin/Sunley 2011, based inter alia on Holling 2001; Gunderson/Holling 2002).
- “Adaptive (complexity-focused) resilience”: Here the main focus is directed towards the adaptive stabilising capability of a complex system along evolutionary pathways (see Martin/Sunley 2007, based on arguments to be found in Dopfer/Potts 2008).

Just as equilibrium-focused resilience concepts reflect many ideas in macroeconomic theory, concepts of evolutionary economic geography joined approaches from complexity theory to improve the understanding of causes and preconditions for resilient processes. In this context, economic resilience is understood as a process of continuous change preventing lock-in constellations. Boschma/Balland/Kogler (2013) distinguish between exogenous economic resilience characterising capabilities to cope with external shocks and to maintain regional development pathways, and endogenous economic resilience characterising intrinsic processes of diversification and branching. This distinction underlines the evolutionary concept of resilience as a permanent process of adjustment and change, and the positive contribution of change to structural improvements without the need for crises and shocks. Within this paradigm of evolutionary economic geography, related and unrelated variety are important candidates to explain exogenous and endogenous resilience capabilities within regions (Frenken/van Oort/Verburg 2007 on related and unrelated variety). Unrelated variety, i.e. a high level of diversification without linkages between industries in the region, decreases vulnerability to external shocks as there is less risk of the regional economy suffering due to contagious effects through inter-industry

linkages in the area. In contrast, related variety—measured by technological linkages, skill linkages or linkages through joint production—may increase vulnerability to external shocks but support adaptability within a region, as released factors from negatively affected industries may be transferred to related industries with different demand characteristics. Diodato and Weterings (2012) confirmed this theoretical expectation by looking at the impact of fictitious external shocks to Dutch regions with different levels of skill-relatedness. The impact of related variety on endogenous resilience was confirmed by looking at its role during branching and diversification processes (Boschma/Frenken 2011 on these processes in general). This argument is also compatible with empirical observations in cluster life cycle concepts, where the generation of new clusters and industries was driven by spin-off processes, which supported a recombination of existing knowledge structures (Bünstorf/Klepper 2010; Castaldi/Frenken/Los 2013). Similarly, the resilience of social networks might be supported by low levels of assortativity, i.e. bridges, although weak ties, between core and periphery to prevent lock-in constellations within the core (Crespo/Suire/Vicente 2013). In contrast, unrelated variety may be the beginning of breakthrough innovations, which then turn hitherto unrelated industries into related industries (Castaldi/Frenken/Los 2013).

The lock-in metaphor within this evolutionary approach reflects to connections with concepts of path-dependencies (see on the discussion on path-dependency Martin/Sunley 2006; Sydow/Schreyögg/Koch 2009; Vergne/Durand 2010). In this context, resilience can be understood as a system of processes characterised by path-dependencies on the micro as well as on the macro-level within the regions, but with sufficient structural openness to avoid lock-ins (Boschma/Balland/Kogler 2013). This evolutionary perspective leads to challenges for economic concepts of efficiency. Regions with less diversity and higher levels of assortativity within their networks may demonstrate higher economic performance in the short-term but face challenges due to lower levels of adaptability in times of crises within the dominant industries (similar to arguments in Hassink 2009). The ‘smart specialisation’ strategy as a guideline for EU Structural Funds Operational Programs is intended to support regions to find this narrow line between efficient specialisation and necessary diversification along technological platforms and related industries by requiring regionally specific processes of identifying strengths and capabilities (Foray/David/Hall 2009; McCann/Ortega-Argiles 2013). Critical statements on the European Commission’s publications, however, still see problems in the strong focus on the digital agenda within the ‘smart specialisation’ concept, which may cause non-justified path-dependencies, and also regret the relatively modest consideration of creative contributions by cultural industries (Cooke/de Propris 2011; Cooke 2012).

The evolutionary perspective on economic resilience meets resilience approaches in other disciplines, e.g. sociology (Lucini 2013), urban planning (Lang 2011; Coaffee 2013), ecology (Folke 2006), cultural studies (Bijker 2006), and psychology (Seery/Holman/Silver 2010), and could be a way to better understand the complexity of interactions and feedback loops, as well as the relevance of historical pathways for the emergence of resilience capabilities and the role played by linkages between activities in building up resilience towards different kinds of shocks. Accordingly, longitudinal studies are needed to cover the processes along historical pathways. This need for longitudinal studies, the diversity of hypotheses and methods from different disciplines and the variability of research questions necessitate quantitative and qualitative studies and a mutual exchange of experiences and perspectives between researchers from different disciplines. This special issue pursues this goal by integrating quantitative as well as qualitative approaches and by looking at regionally specific processes.

#### 4 Policy Implications of the Debate on Regional Economic Resilience

As the discussion about preconditions for regional economic resilience is still relatively young, to date only few general papers have dealt with policies and policy recommendations, and the perspective on policies varies from international comparisons of macroeconomic policies (see e.g. Duval/Elmeskov/Vogel 2007; Cerra/Paniza/Saxena 2013) to single regional case studies (Simmie/Martin 2010; Luke-sch/Payer/Winkler-Rieder 2011; Hervas-Oliver/Jackson/Tomlinson 2011). Political activities can be distinguished according to their approach to strengthening regional economic resilience:

- Short-term reactions to soften negative impacts of external shocks
- Mid-term measures to strengthen adjusting capabilities after shocks
- Mid-term preventive activities to anticipate external shocks and develop strategies to reduce vulnerability or increase adjusting capabilities

Typical examples for the first group of activities are conventional instruments of fiscal policies to overcome short-term macroeconomic crises, for example short-term allowances, additional public infrastructure investments, or reduced taxes and social contributions. For the second group, reforms to increase labour mobility or public investments to strengthen emerging technologies and new market infrastructures are typical examples, while the third group includes broader measures to support local civil engagement, diversifying processes in leading economic sectors



or improved bridges along technological platforms. Before discussing specific economic resilience policies, however, it will be more relevant to deal with three specific challenges in this context.

#### 4.1 The Role of Path-dependencies within Political Processes

Policies should help to stabilise in times of economic crises and financial turmoil by creating binding commitments (Wink 2013). This stabilising effect depends on existing regional political and institutional pathways, as decision-making and implementation processes are based on region-specific routines and cultural mentalities. Experiences in Germany during the global financial and economic crisis in 2008/2009 illustrate these linkages. German industrial firms and regions with high shares of industrial exports were hit particularly negatively during the crisis, but recovered in a relatively short period. Despite a huge decline in GDP in 2009, employment decreased relatively weakly. Reports on the success of Germany in emerging from the crisis often refer to the extension of short-term work as an instrument to keep the workforce within the firms and to connect periods of less work with increases in qualifications. This success, however, was only possible because it fitted perfectly to the adjustment strategies of industrial firms and trade unions in Germany (Lichtblau/Demary/Schmitz 2010; Herzog-Stein/Horn/Stein 2013). After negative experiences in recessions in the 1990s, when firms reacted to the crisis by increased numbers of lay-offs and short-term decreases in production costs, this time the firms used flexible internal working time programs (for example flexible individual working time accounts) to keep their human capital within the firms and prevent future scarcities of qualified workforce. Furthermore, the firms increased their private equity ratios and their independence from bank-loan financing before the crisis and used the crisis for further innovation activities. Within these strategies, short-term work served as a perfectly compatible amendment, as it helped to subsidise further reductions in working time (beyond the internal programs) and offered opportunities for gaining qualifications, which could be used to increase the future competitiveness of human capital. The internal remaining fixed costs could be financed by the increased private equity ratios and mutual financial support in the supply chains. Therefore, transfers of these policy instruments are limited, as they need to fit into the regional context of firms and institutional routines (see also Bathelt/Munro/Spigel 2013). This embeddedness into institutional pathways, however, also causes threats of lock-in constellations if necessary adjustments of institutional incentives cannot be integrated into existing processes, for example labour market reforms to increase mobility, as these existing processes only support insiders,

who fear losing through the reforms. Any discussion of policies thus has to deal with issues of compatibility with existing policy settings.

#### 4.2 Multilevel Governance Context of Policies and Institutions

Further complexity within the political context is caused by the multilevel governance structure of policy-making in the EU (Bachtler/Mendez 2007; Conzelmann 2008). As evolutionary concepts of regional economic resilience support the idea of decentralisation and the stronger autonomy of regions to strengthen redundancy and varieties (Bristow 2010), resilience policies should be particularly fuelled by regional initiatives and ideas. These processes, however, have to fit into the system of regional cohesion policies in line with the idea of 'smart specialisation' as well as into private institutional processes. Accordingly, concepts of resilience policies and their adjustment should include evolutionary approaches to change on the micro-, meso- and macro-level within countries and the EU (Schröder 2011, based on Dopfer/Foster/Potts 2004). Here, connections with psychological and sociological concepts of change, adjustment and resilience can be quite helpful in providing a better understanding of opportunities and limitations within regional resilience policies.

#### 4.3 Need for Fine-Balance Tuning of Policies

Despite growing consensus on the value of evolutionary approaches to explain regional economic resilience, concrete recommendations for policies are still confronted with challenges by trade-offs between single measures. Typical examples of these trade-offs refer to the roles of related variety and connectivity. Related variety is a candidate to explain fast adjustment within affected regions due to labour and product market mobility beyond existing industry segments (Diodato/Weterings 2012; Boschma/Balland/Kogler 2013). For example, if skills in sector A are related to skills in sector B then crises affecting sector B might not hit a region too hard, as workers may find new jobs in sector A, which might not be affected by this crisis (Holm/Ostergaard 2010; Timmermans/Boschma 2013). Accordingly, cluster and platform policies should focus on these kind of linkages between the industries. Unrelated variety, however, does not open up these kinds of opportunities. On the other hand, studies refer to a lower vulnerability for common shocks in cases of unrelated variety within a region, and to more radical innovations (Frenken/van Oort/Verburg 2007; Castaldi/Frenken/Los 2013). Therefore, policies should also support linkages between hitherto not-related industries within platform approaches. Similarly, a high intensity of connections within a core should increase the productivity of collabora-

tions and could help to find common solutions in cases of external shocks. These intensive connections, however, also cause risk of lock-in constellations, unless they are amended by bridges to peripheral actors who might support diversification processes or create additional options to redundancy in case of crises (Crespo/Suire/Vicente 2013). Therefore, recommendations for policy-makers need to stress both opportunities and risks to prevent future lock-in situations.

## 5 Papers in this Special Issue

The papers in this special issue take up the challenges mentioned and consider different directions of regional economic resilience research and policy. *Adam Drobniak* presents an indicator system to measure resilience for regions in specific circumstances by looking at Central European post-industrial transformation regions. *James Simmie* analyses the role of innovations to explain different speeds of recovery in British regions following a Schumpeterian interpretation of regional economic resilience.

The papers by *Anne Otto*, *Ljubica Nedelkoska*, *Frank Neffke* and *Matthias Kiese* focus on specific dimensions of regional economic resilience. *Otto*, *Nedelkoska* and *Neffke* analyse the connections between skill-relatedness in the regional labour markets and regional economic resilience, while *Kiese* turns his attention to the role of regional cluster policies and their sustainability. Finally, *Iwona B. Sagan* and *Grzegorz Masik* as well as *Gillian Bristow* and *Adrian Healy* particularly stress the territorial perspective by looking at regional experiences, which are driven by specificities of people, place, business and community. With this broad perspective on conceptual developments, territorial perspectives and policy issues, this special issue takes the scientific debate on the integration of regional economic resilience as a policy objective in EU policy-making a step further, towards issues of policy design and implementation.

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