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Understanding regional resilience and the role of institutions in establishing policy and practice

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Understanding regional resilience and the role of institutions in establishing policy and practice

By

Richard Smith

September 2021



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***A thesis submitted in partial fulfilment of the University's requirements for
the Degree of Doctor of Philosophy***



Certificate of Ethical Approval

Applicant:

Richard Smith

Project Title:

Managing labour market restructuring in Europe

This is to certify that the above named applicant has completed the Coventry University Ethical Approval process and their project has been confirmed and approved as Medium Risk

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ABSTRACT

The concept of regional resilience has been used by researchers to examine patterns of uneven development, and to explore factors which contribute to the varied ability of regions to adapt to economic change. The financial crisis of 2007-2008, and the ensuing Great Recession, brought increased usage of the concept in academic research. Despite this being accompanied by significant conceptual discussion of the term, regional resilience remains a contested concept, with little consensus on definition or utility among academic researchers

Within the literature on regional resilience there remains a disconnect between policy and practice and the theoretical definitions developed in academic research. Additionally, despite a significant body of research focussing on institutions in regional policy, the role of institutions, agency, and the way in which policy approaches related to regional resilience are made remains an underdeveloped area of research. Previous research has largely focused on explaining structural influences on the way in which regional economies evolve, with much less consideration of the activities, actions, and motivations of those seeking to actively shape this development.

This thesis contributes to the understanding of regional resilience through exploring the policy making perspective to examine the extent to which the concept is reflected in policy and practice, and how specific institutional contexts influence approaches to regional resilience. To achieve this the thesis develops a novel analytical framework which conceptualises the key features of academic definitions of regional resilience and links these to policy approaches and actions.

The research comprising in-depth policy review and interviews with senior policy makers reveals distinct policy perspectives on regional resilience in two case studies contexts, which are fundamentally rooted in established institutional arrangements and institutional environments. In the Tees Valley the approach is predominantly a business-focussed form of policy for regional resilience, in Southern Denmark the prevailing form of regional resilience policy has a human capital-focus.

The analytical framework developed for this research was used to help demonstrate that regional resilience is a relevant and useful lens through which to understand particular policy approaches to anticipation and management of economic change and to explore the nature of economic growth policy makers seek to foster. The research also reveals approaches to regional resilience to be complex, a process which blends strategic and pragmatic approaches to anticipation and management of economic change, and to be heavily conditioned by factors outside of the region.

For sub-national policy, the thesis demonstrates that regional resilience can be used to provide a novel way of understanding the focus and form of regional growth policy. Analysing regions in this way can be useful in the design and implementation of devolution settlements which facilitate effective place-based policy making. More fundamentally, this insight encourages policy makers to consider the kind of regional growth they seek, the importance of resilience to it, and therefore, who benefits from public policy interventions.

Contents

1	Introduction	1
1.1	The focus and importance of the research.....	1
1.2	Key concepts and themes for this research	3
1.2.1	The changing organisation and widening scope of regional policy	3
1.2.2	Definitions of regional resilience	4
1.2.3	The role of institutions and agency in the formation of regional policy	5
1.3	Aims and research questions	6
1.4	Structure of the thesis	8
2	Literature Review	10
2.1	Introduction	10
2.2	The process of adaption and resilience in regional economic development	11
2.2.1	Regional adaptation and adaptive capacity	11
2.2.2	Definitions of regional resilience	14
2.3	Governance and policy	23
2.3.1	Institutions and agency in economic development.....	23
2.3.2	Policy and governance in academic definitions of regional resilience	27
2.4	Developing an analytical framework to explore regional resilience in policy and practice.....	31
2.4.2	Understandings of regional resilience and the process of adaption included in the framework.....	35
2.4.3	Policy concepts included in the analytical framework	36
2.5	Discussing national frameworks to identify a spatial focus for the research	41
2.6	Summary.....	46
3	Methodology	47
3.1	Introduction	47
3.2	Ontological and Epistemological positioning.....	48
3.2.1	A complex system approach	48
3.2.2	Critical realism.....	50
3.3	Use of case studies and method of selection.....	52
3.3.1	The role of case studies	54
3.3.2	Case study selection	57
3.4	Research methodology and specific methods	59
3.4.1	The research process and research methods.....	59
3.4.2	Document review.....	62
3.4.3	Secondary Data Analysis	72
3.4.4	Stakeholder Interviews	74
3.4.5	Analysis and testing of research findings.....	79
3.4.6	The process and forms of triangulation.....	82
3.5	Summary.....	84
4	Regional resilience in policy and practice.....	86
4.1	Introduction	86
4.2	Institutional context within which policy and practices are established.....	88
4.2.1	Institutional arrangements and environment in the UK	88
4.2.2	Institutional environment and arrangements in Denmark	92

4.3	Profile of policies and practices included in the analysis.....	96
4.4	Comparison of policies and practices with established definitions of regional resilience	103
4.4.1	Analysis of firm-level considerations.....	103
4.4.2	Analysis of innovation assets.....	104
4.4.3	Analysis of learning and skills.....	106
4.5	Chapter conclusions.....	108
4.5.1	Understanding of resilience / dynamics of change.....	108
4.5.2	Main agents of change	110
4.5.3	Role for public policy	111
5	Tees Valley case study	113
5.1	Introduction	113
5.1.1	The Tees Valley “region”	113
5.2	The policy making process in the Tees Valley	115
5.2.2	The influence of institutional arrangements on policy approaches	117
5.2.3	The influence of the institutional environment on policy approaches.....	124
5.3	Approaches to anticipation of economic change.....	127
5.3.1	Firm and sector level considerations	128
5.3.2	Learning, skills and employability	133
5.3.3	Infrastructure and place development.....	136
5.4	The approach to management of economic change: the SSI Steel closure	137
5.5	Explaining the way in which stakeholders anticipate and manage economic change	141
5.6	Conclusions.....	145
5.6.1	Institutions and the policy making environment	145
5.6.2	The Tees Valley approach as a contribution to understanding resilience.....	147
5.6.3	Implications from these findings	149
6	Southern Denmark case study	152
6.1	Introduction	152
6.1.1	The region of Southern Denmark	153
6.2	The policy making process in Southern Denmark.....	155
6.2.1	The influence of institutional arrangements on policy approaches	156
6.2.2	The influence of the institutional environment on policy approaches.....	160
6.3	Approaches to anticipation of economic change.....	164
6.3.1	Firm and sector level considerations	164
6.3.2	Learning, skills and employability	169
6.3.3	Infrastructure and place development.....	171
6.4	The approach to management of economic change: the Lindø Shipyard	173
6.5	Explaining the way in which stakeholders anticipate and manage economic change	175
6.6	Conclusions.....	178
6.6.1	Institutions and the policy making environment	178
6.6.2	The Southern Denmark approach as a contribution to understanding resilience.....	180
6.6.3	The implications from these findings.....	184
7	Synthesis of case studies and reflections on findings.....	186
7.1	Introduction	186

7.2	The importance of institutions in shaping approaches to anticipation and management of economic change.....	187
7.2.1	The importance of national framework conditions.....	187
7.2.2	The varied roles and influence of different policy makers	188
7.3	Comparing approaches to restructuring with academic definitions of regional resilience	189
7.3.1	Understandings and approaches to fostering economic growth	190
7.3.2	The dynamic nature of approaches to anticipation and management of economic change	193
7.3.3	Comparing regional policy approaches in case study regions with established definitions of regional resilience.....	197
8	Conclusions.....	204
8.1	Introduction	204
8.1.1	Research Questions.....	205
8.2	The empirical contribution of this research	206
8.2.1	The relevance of existing definitions of regional resilience for regional policy.....	206
8.2.2	Comparing policy and practice with established definitions of regional resilience.....	207
8.2.3	Implications for mobilisation and measurement of regional resilience in research	211
8.3	The theoretical contribution of this research	212
8.3.1	Contribution to the understanding of regional resilience	212
8.3.2	Exploring regional resilience as a process.....	215
8.4	Implications for policy and further research	221
8.4.1	Implications for regional policy discussion	221
8.4.2	Implications for further research	223
8.5	Summary.....	224
Appendix 1	Relevant EU policy related to economic restructuring.....	226
Appendix 2	Socioeconomic conditions and policy context for case study regions.....	230
Appendix 3	Topic Guide and coding structure for case study interviews	242
Appendix 4	Search terms for review of policy and practices.....	246
Bibliography.....		248

Table of tables

Table 2.1	A classification of national frameworks	44
Table 3.1	Search terms to identify relevant documents through web-search	64
Table 3.2	Framework to compare academic definitions of regional resilience with established policies and practices.....	66
Table 3.3	Issues included in the document review for case study regions	68
Table 3.4	Contextual information relating to case study regions	73
Table 3.5	Adapting theoretical concepts into issues and topics to include in interviews	74

Table 3.6	Structure of case studies and analysis undertaken for research questions 2 and 3	80
Table 4.1	Specific labour market policies and practices related to anticipation of change.....	97
Table 4.2	Specific labour market policies and practices related to management of change.....	100
Table 5.1	Forms of regional resilience - based on Tees Valley case study	148
Table 6.1	Southern Denmark key sectors for development: status and rationale	165
Table 8.1	Business related and human capital forms of regional resilience	214

Table of figures

Figure 2.1	Analytical framework.....	33
Figure 3.1	The research process, research methods and outputs	61
Figure 3.2	Forms of triangulation for this study	84
Figure 4.1	A comparison of Regional Development Agency and Local Enterprise Partnership boundaries.....	90
Figure 4.2	The Danish Institutional set-up in relation to employment policy	96
Figure 5.1	The formal policy making process in the Tees Valley LEP	116
Figure 5.2	The process through which a business-focussed approach is established in the Tees Valley.....	144
Figure 6.1	The regions of Denmark	153
Figure 6.2	The municipalities within the region of Southern Denmark.....	154
Figure 6.3	The process through which a Human Capital focus is established in Southern Denmark.....	177
Figure 8.1	Regional and sectoral development paths and approaches to regional resilience	210
Figure 8.2	A conceptual model: the process through which policy and practice related to regional resilience is operationalised	216

1 Introduction

1.1 The focus and importance of the research

The notion of regional resilience has been increasingly used as a way for academic researchers to conceptualise and analyse the varied performance of regions over the past decade. Fundamentally, regional resilience is concerned with the exploration of the factors which determine the process of adaption to economic change and explores factors which impact the adaptability of regions. Use of the concept has increased since the global financial crisis in 2007 -2008, this event was followed by wide-spread recession across Europe and globally – a period termed the great recession. This period of economic contraction had significantly varied impacts on the regions of Europe, with some showing a greater ability to withstand economic contraction and retain existing economic strengths or evolving to adapt to new development paths (Brackman et al., 2015; Crescenzi et al, 2016; ESPON, 2014; European Commission, 2019; Fingleton et al., 2012).

Academic researchers have defined Regional resilience in two principal ways. Firstly, equilibrist definitions, define resilience as the ability of a region to maintain or return to previous levels of output and/or employment following economic shocks or major closures. This can be through ‘engineering resilience’ – the ability to return to the same state, or ‘ecological resilience’ – the ability to form a new state (Fingleton et al., 2012; Isaksen, 2014; Simmie and Martin, 2010; Swanstrom, 2008). Secondly, resilience has been defined through use of evolutionary perspectives, which reject equilibrist definitions and assert that regions are in state of constant change with no settled equilibrium (Boschma, 2014; Bristow and Healey, 2010; Davies, 2011; Dawley, 2014; Martin, 2012; Martin and Sunley, 2015; Pike et al., 2010).

Despite increased usage, the concept of regional resilience has no widely agreed definition, with some researchers questioning the utility of the concept when considered alongside the range of analytical concepts already available for researchers concerned with uneven development (Hassink, 2010; Hudson, 2009; Gong & Hassink, 2017; Pendall et al., 2010; Wink, 2014). An additional criticism of the concept is a perceived over concentration on systems analysis and a neglect of the role of human agency in shaping outcomes (typically growth metrics such as employment and gross value added) which are frequently used in research to measure relative degrees of resilience (Bristow and Healey, 2014; Christopherson et al., 2010; Hudson, 2010; Wolfe 2010).

Accompanying these discussions have been increased interest among policy makers and researchers regarding the nature of economic growth (Bristow, 2005; Harvey, 1982;

Morgan, 2004, Pike et al. 2010) and specifically on the potential benefits of place-based policy and the reorganisation of institutional arrangements through devolution of powers and responsibilities for economic development over the last decade (Bachtler et al., 2016; Barca et al, 2012; Solly, 2016). However, such discussions have not been effectively linked with conceptual debates of the utility and definition of regional resilience, with discussions of regional resilience largely neglecting the role of regional stakeholders and institutions in shaping specific forms of regional resilience.

There are, therefore, important gaps in understanding policymaker perspectives, and the role of policy in shaping specific forms of regional resilience. This research develops the understanding of regional resilience through exploring the policy making perspective to understand the extent to which the concept is reflected in policy and practice, and how specific institutional contexts influence approaches to regional resilience. Ultimately the thesis shows how the concept of regional resilience can be useful as a way of contributing to discussion of how policy makers can anticipate and manage economic change and the form of economic growth that they seek to foster.

This is achieved by undertaking a review of policy and analysing the relationship between definitions of regional resilience and established policy and practices. The study then uses two case studies, Tees Valley in the UK, and the region of Southern Denmark, to explore the process and development of specific approaches to regional resilience, examining the role institutional arrangements and institutional environments play in establishing approaches to regional resilience.

Each of these regions have undergone significant economic and labour market restructuring over the past decade following the decline of previously dominant industries. The thesis reveals regional resilience to be a very useful analytical lens through which to explain and examine the approaches that each region has taken to anticipation and management of economic change.

What emerges is two distinct perspectives of regional resilience. In Southern Denmark there is a concentration on investment in human capital to support market trends, the approach in the Tees Valley places greater emphasis on the region reflecting national industrial strategy to attract investment, providing strategic and direct forms of support to companies. In each case the approach to regional resilience is situated within an overall appreciation of the place of regional industries and assets within global value chains.

The two case studies each demonstrate that the prevailing approaches to regional resilience are firmly rooted in the established institutional arrangements and institutional environments. However, the dominance of national framework conditions in shaping the

boundaries within which these regional institutional conditions develop resilience-related policy is equally clear. In this respect the research the thesis provides a challenge to the 'regional' nature of resilience.

The distinct policy approaches to regional resilience are also demonstrated to be established through a complex process involving endogenous and exogenous factors which shape strategic and pragmatic approaches which are heavily conditioned by factors outside of the region. The thesis demonstrates that regional resilience offers a useful concept through which policy makers can consider the design and implementation of sub-national institutions which facilitate effective place-based policy making.

1.2 Key concepts and themes for this research

This thesis explores the concept of resilience in regional development. In regional development research and analysis resilience has been increasingly used as a concept within which to try and understand the process and specific factors which contribute to the uneven nature of economic and social change within and across regions. The following sub-sections introduce the key themes and concepts for the research before briefly outlining the research questions which are investigated.

These themes provide the focus for the research as it seeks to engage with issues of the extent to which regional policy makers operate within a changing context to develop approaches to regional resilience. The themes introduced below are discussed in detail in Chapter 2.

1.2.1 The changing organisation and widening scope of regional policy

There is a significant body of academic research examining uneven development and, in particular, the process of adaption and influences on adaptability at regional level and local level (for example, Marshall, 1920; Massey, 1995; Martin and Sunley, 2006). One of the reactions to this has been an increasing tendency across Europe toward devolution of powers and responsibilities from central government to regions, this has taken varied forms between, and often within, the countries of Europe, altering the way in which economic development is organised within regions (Armstrong & Taylor, 2000; Bachtler, 2007; OECD, 2005).

Accompanying this increased devolution of powers and responsibilities to regions has been a greater concentration on place-based economic development policy, which emphasises the importance of tackling specific local market failures or persistent

inefficiencies which inhibit economic growth at local and regional level, particularly among certain geographic areas and / or among particular groups (Barca, 2009).

Additionally, there has been an increased awareness among policy makers and businesses that globalisation and increasing free trade have increased the inter-dependency of regional economies (Amin, 1998, Keohane & Nye, 2000; Storper, 1995, Weiss, 1999). In some respects, this has increased uncertainty and vulnerability to rapid market adjustment and economic crisis (Camagni & Capello, 2012; Fratesi, 2012; Rodrik, 2018). As such, the concepts of adaption and adaptability and consideration of ways in which people, businesses and places may better anticipate and manage change through becoming more resilient and adaptable have assumed increasing importance.

1.2.2 Definitions of regional resilience

The concept of regional resilience has been used in academic research to understand the process of adaption and the factors which influence adaptability to economic change for regions. Despite increased usage of the term over the past decade, regional resilience remains a contested concept, with no settled definition in research and little explicit use in policy statements. In academic studies definitions of regional resilience have been informed using thinking from a wide range of different disciplines, from mainstream economics to evolutionary science. The main definitions are briefly outlined below (and discussed fully in the literature review - Section 2), these encompass equilibrist and evolutionary perspectives.

There are two main forms of equilibrist definitions of regional resilience. An important aspect they share is that each assert that regional economies have a tendency toward settled equilibrium. 'Engineering resilience' understands resilience to be determined by the ability of regions to resist change or return to a previously held development path. By contrast, 'ecological resilience' describes the ability of, or process by which regions establish a new settled development path, distinct from the previous one (Pendall et al., 2007). Such definitions typically relate to the management and recovery from a particular identified event or economic contraction.

Evolutionary definitions of regional resilience challenge the central assertion of equilibrist interpretations, which is that regional economies tend toward equilibrium or static states. Martin (2012) incorporates an evolutionary perspective in identifying four main dimensions of resilience: (a) resistance, which refers to how sensitive regional output and employment are to a shock; (b) recovery, how fast and comprehensively the region bounces back from a negative shock; (c) re-orientation, the extent to which a regional economy changes after

a shock; and, (d) renewal, the extent to which regional economies 'renew' their growth paths.

The evolutionary perspective on regional resilience includes distinct perspectives which stress the importance of various factors. The Darwinist perspective stresses the importance of individual firms and sees the resilience as a function of aggregate firm performance. Within this perspective the importance of agglomeration economies and related variety are stressed. A path dependency perspective stresses the importance of previous development paths and identifies forms of lock-in as key to adaption and/or levels of adaptive capacity. Lastly, a complex adaptive systems perspective stresses the dispersed agents within the system operating at different scales.

Where the concept of regional resilience has been applied in research it has most typically been to operationalise equilibrist definitions of resilience in order to measure relative degrees of resilience, comparing regional performance in terms of employment or growth (for example, Crescenzi et al., 2016; Cuadrado-Roura, et al., 2016; Doran & Fingleton, 2016; Sensier et al., 2016); and following specific plant closures or as a result of wider economic shocks (for example, Bailey & Berkeley, 2014, Christopherson et al. 2010, Holm, & Østergaard, 2015, Hudson, 2010, Pike et al. 2010, Simmie & Martin, 2010).

Where evolutionary definitions have been used, they have mainly been applied to describe sector life cycles and the influence of various technological developments within this process (for example, Dawley et al, 2015; Martin, 2012). These studies also identify the important role of changing political contexts which can provide regional policy makers with resources and political capital required to institute changes to previously settled development paths. These types of issues are discussed in more detail in the next section.

1.2.3 The role of institutions and agency in the formation of regional policy

Much research into the determinants of economic development which has sought to understand the role of various regional properties in economic performance has concluded that the quality of institutions may matter as much as, if not more so, than factors such as the physical assets, and human resources attributes, or trade or technology capacity (Rodriguez-Pose; 2013). Despite this there has been relatively little research which has explored the extent to which varied institutional arrangements and institutional environments may result in development and delivery of policies and practices which establish different forms of resilience in policy.

To understand institutions in the policy making process, it is useful to make a distinction between 'institutional arrangements' and the 'institutional environment', thus recognising a distinction between hard and soft institutions (Amin, 1999; Gertler, 2010; Rodriguez-Pose; 2013). In this respect hard institutions are traditionally seen as the key stakeholders within regional economic development, such as: the range of government organisations, business representatives, worker representatives, education providers, and civil society organisations. Hard institutions organise and operate within defined institutional arrangements. By contrast soft institutions, which include prevailing norms, traditions and social conventions, interpersonal contacts, relationships, and informal networks make up the institutional environment.

Regional institutions operate within multi-scalar or multi-level governance structures which encompass vertical dimensions, such as the development of a set of relationships between supranational, national and sub-national governments; and horizontal dimensions, such as, the regional arrangements which increasingly involve non-governmental actors (for example, representatives from businesses, civil society organisations, labour unions) (Bache and Flinders, 2004; Sørensen, 2006; Piattoni, 2009). Such arrangements are not static and may change over time. These aspects of institutions do not play a significant role in academic definitions of regional resilience, this research addresses this gap in knowledge through considering the role of institutions in the process of forming resilience related policy and practice.

Within these institutional settings, a number of researchers have explored the nature of agency and explored the extent to which different forms of agency exist and how they operate at a policy maker level. Grillitsch and Sotarauta (2018) identify different forms of agency - innovative entrepreneurship, institutional entrepreneurship, and place-leadership. This usefully highlights the level of dynamism in regional policy and provides useful considerations when exploring policy connected with anticipation and management of economic change. Gertler (2010) identified the importance of institutions in establishing the character and evolutionary trajectory of regional economies. However, the forms of agency identified by Grillitsch and Sotarauta (2018) are instructive of the dynamism and varied forms of agency explored by this thesis.

1.3 Aims and research questions

The concepts and issues outlined in the previous section (which are discussed in more detail in the literature review) provide the context for the research aim and questions.

The primary aim of the thesis is to enhance the understanding of regional resilience through exploring to what extent policy makers reflect established definitions of the

concept and how specific institutional contexts operate to establish resilience-related policy. It is, therefore, firstly important to establish the overall relevance and application of the concept in policy and practice, and, secondly to explore how specific institutional contexts operate and influence the established approach to regional resilience. The research questions utilised to achieve this are outlined below.

Three specific research questions are addressed in this thesis. The first research question is addressed through desk review, research questions two and three draw on new case study research in the Tees Valley in the UK, and Southern Denmark:

1. *To what extent does the focus of national labour market policies and practices related to anticipation and management of economic restructuring reflect existing definitions of regional resilience?*

This research question analyses labour market policies and practices related to regional adaption to economic change in the UK and Ireland, and Nordic countries. The research question considers the extent to which policies and practices are consistent with academic definitions of regional resilience, the chapter considers policies and practices related to both anticipation and management of economic change. This research question uses in the analytical framework developed through the literature review to examine different elements of established policy and practice, including the role of policy makers in the process of resilience.

This question contributes to the empirical understanding of the circumstances within which different approaches to regional resilience are mobilised in policy and how this relates to academic and theoretical understandings.

2. *To what extent do regional policy makers understand, anticipate and respond to economic restructuring in ways that reflect existing understandings of regional resilience?*

This question involves detailed consideration of how policy makers in the case study regions of Tees Valley and Southern Denmark define regional resilience. The research for this research question provides a detailed understanding of how stakeholders define regional resilience, exploring their views on key priorities in their specific spatial context. The policy making process in the case study regions is explored to understand the ways in which policy and practices related to regional resilience are conceived and delivered.

The findings from this research question contributes to developing a policy maker perspective on regional resilience, identifying the way that different stakeholders see the role of public policy in delivering resilience in their region. This analysis provides a novel understanding of how regional resilience is understood in policy and has important

implications for more accurate analysis of regional resilience which is more closely related to policy maker objectives. To date, most analysis has applied common metrics to conduct cross-regional comparison based on a commonly applied definition of regional resilience.

3. *To what extent do regional institutional arrangements and institutional environments influence policy approaches to economic restructuring at regional level? How does this relate to existing definitions of regional resilience?*

This research question assesses the way in which the policy process functions in case study regions, specifically examining the way in which particular institutional arrangements and institutional environments operate to mobilise notions of regional resilience.

Undertaking analysis of institutional arrangements and the institutional environment is particularly important because it demonstrates how these two linked, but distinct, elements operate in different regional contexts. This provides evidence to show the extent to which there are significantly developed place-based definitions of regional resilience.

The findings from this research question contribute to the understanding of the relative importance of institutions in the formation of distinct forms of place-based regional resilience policy and the way in which institutions are part of a process, both shaping policy possibilities and being shaped by policy maker understandings of regional resilience-related policy priorities.

1.4 Structure of the thesis

The thesis is structured in the following way:

- Chapter 2 provides a literature review which outlines the relevant academic and policy discussion which leads to the research questions.
- Chapter 3 outlines the study methodology and the way that analysis has been undertaken.
- Chapter 4 uses the analytical framework established in the literature review and examines the extent to which policies and practices in the UK and Ireland and Nordic countries related to regional resilience are consistent with academic definitions of regional resilience drawing on a new review of published policy documents.
- Chapters 5 and Section 6 present the findings from the case studies which discuss regional resilience policy approaches in two different regions and examines the way in which institutional arrangements and institutional environments operate in those regions.

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- Chapter 5 analyses the Tees Valley which has established a predominantly business-focussed form of regional resilience
 - Chapter 6 analyses Southern Denmark, which has established a predominantly human capital-focussed form of regional resilience
 - Chapter 7 synthesises the findings from the case studies and reflects of the combined learning from them.
 - Chapter 8 details the conclusions and highlights implications for further research.

2 Literature Review

2.1 Introduction

The literature review is structured in three main sections. The first half (Section 2.2) explores the process of adaption and the way in which a contested concept, regional resilience, has been used in academic research to understand reasons for varied patterns of development. It discusses aspects of the development of the regional resilience literature and explores the particular ways in which academic researchers have defined regional resilience. It also examines the role of institutions, specifically discussing the varied role of institutions and agency in the way that the concept has been defined and operationalised in research.

This reveals that, despite significant use in research, regional resilience remains a contested concept, both in terms of its definition and contribution to research and policy within the existing range of conceptual and methodological tools. The section identifies some of the key elements and emphases within definitions of regional resilience, comparing and contrasting these factors as a basis for understanding what different notions of resilience may look like in policy and practice.

The second part of the literature review (Section 2.3) explores the issue of institutions and agency, discussing the ways in which these concepts relate to academic definitions of regional resilience. The section then reflects on the multi-scalar nature of regional policy making and discusses the role of policy and the scope for policy intervention within established equilibrium and evolutionary understandings of regional resilience.

This discussion establishes the ways in which different academic definitions of regional resilience place varying degrees of significance on different actors within the process of resilience. The section also discusses ways of conceptualising national frameworks within which regional resilience policy and practice are established, highlighting these frameworks as strong influences on shaping the institutional contexts within which regional approaches to resilience are enabled or restricted.

Lastly, in Section 2.4, the key issues which emerge from the literature review are summarised and used to develop an analytical framework which is used throughout the study. The framework is used to help identify policies and practices which are of particular relevance to regional resilience which allows for comparison in how institutional arrangements and institutional environments shape approaches to resilience at regional level (Chapter 4). The framework is then also used to guide the development of research tools and analysis in the case studies (Chapters 5-7).

2.2 The process of adaption and resilience in regional economic development

This section explores the idea adaption in regional development and discusses the way in which academic research has conceptualised and applied ideas of adaption and adaptive capacity in research. These ideas are an inherent part of the regional resilience literature and thus help to ground the later discussion on regional resilience in the wider literature, identifying aspects which remain important in the way that researchers frame particular notions of regional resilience.

A large number of studies have examined the varied degrees of success with which regions and localities have been able to adapt when faced with the economic and labour market challenges and opportunities arising as a result of economic change. The idea of adaption has been important in consideration of how and why some regions have been more / less successful than others, particularly in respect of changes resulting from the process of deindustrialisation.

2.2.1 Regional adaptation and adaptive capacity

A significant volume of research has used the ideas of adaption and adaptability to examine the processes and varied success of regional change and diversification from previous development paths to new industries (Pike, et al., 2010; Hassink, 2010; Martin, 2012; Boschma, 2014). In his classic study, Grabher (1993) conceptualised adaption and adaptability as part of his study of firm dynamics in the Ruhr Valley in Germany. Grabher suggested that there was an inherent trade-off between adaption and adaptability. The author also explored various forms of lock-in (further discussed in the context of path dependency in section 2.2.2.2 of this thesis), concluding that loosely coupled networks of firms (rather than rigidly coupled networks) provide the most likely way for regions to avoid the danger that 'adaption may lock a region into its trajectory and undermine its ability to learn and self-organise, that is. It may lead that region into the trap of rigid specialisation' (Grabher, 1993. P. 275). These ideas remain important in the way that researchers operationalise ideas of regional resilience (as is discussed later in Section 2.2.2)

Grabher and Stark (1997) further developed these ideas in their study of post-socialist economies in Eastern Europe. This work concluded that short-run adaption in these economies (as they are subject to privatisation and development of new markets) is likely to lead to a loss of adaptability over the longer term through a loss of organisational diversity. More recent research has focussed in to explore specific factors and drivers of change to research the process of adaption and identify drivers which may account for perceived greater or lesser success in adaption. This includes, for example, the

development of new growth paths (Isaksen & Trippl, 2014; Martin, 2010); regional economic diversification (Neffke, Henning, & Boschma, 2011); and factors which explain the varied ability of regions to make such changes. The main focus of these contributions has been on the process of regional adaption and varied ways in which adaptability plays out in different regions.

Settled definitions have developed around the concepts of adaption and adaptability. Adaptation is most commonly described as a process which is pre-conditioned by the experience and realities of prevailing development paths or primary functionalities of a system (Adger, 2010). As such, adaptability can be characterised as a path dependent process through which existing paths or primary functions of a system are maintained (Hu and Hassink, 2015), adaptation refers to the ability of a system to exhibit continuity through adjustment. Adaptability refers to the capability of a system to change, pursue new development paths and exhibit structural change, in short, the ability of a system to embrace possibilities for change through renewal.

Adaptation is based onto process adjustments within a regional economy, these changes are required as a result of developments within the overall trading environment(s) within which the regional economy operates. Adaption is not typically linked with economic shocks and short-term economic or labour market effects that occur as a result of such change. Rather the process of adaption is more closely associated with external market development, it is therefore also distinct from endogenously situated market developments / innovations that spring from within the region. Fundamentally then adaptation can be understood as a process of adjustments that result in, or aim for, growth / more economical performance of a regional economy. The process and form of adaption can be reactive and/or proactive as a reaction to endogenous development. (Martin, 2012, pp. 11-13). This idea of proactive and/or reactive actions is also developed in the discussion of regional resilience as it relates to the ways in which policy makers anticipate and manage economic change (section 2.2.2) and in terms of governance and policy (section 2.2.3).

Adaptability often refers to set of pliable attributes that can be moulded in to pursue new development paths and to reformulate the regional economy in the face of structural change (Pike et al., 2010; Boschma, 2015). Adaptability is also understood to be a property that is often revealed through endogenous economic shocks, with the idea being used as a way to understand the, often varied, ability of regional economies to “bounce-back” and also as a quality exhibited through regionally situated innovation (Hu, 2015; Martin et al., 2016).

In their conceptualisation of the concepts of adaption and adaptability, Grabher and Stark (1997), focussed largely on firm-level dynamics and argued that, where there were trade-offs between the two. They stressed that where there were strongly tied social agents, regional adaptability would be reduced because adaption (only) requires “exploiting known territory at the cost of forgetting (or never learning) the skills of exploring for new solutions’ (Grabher and Stark, 1997, 534).

The notion that there must be a trade-off between the two ideas has been a significant area of discussion among academic researchers exploring the idea of adaption and adaptability (Ibert & Schmidt, 2014; Mackinnon & Derickson, 2013; Martin & Sunley, 2006). Indeed, such discussion of the apparent trade-offs between adaption and adaptability is of particular significance for this research. Hu and Hassink (2017) note that in theorising regional resilience, adaption has tended to become linked to low levels of resilience, becoming synonymous with notions of resistance and recovery; whereas adaptability has been associated with re-orientation and renewal – and higher levels of resilience. The authors are critical of this so-called dualistic thinking which limits the utility of the ideas of adaption, adaptability and resilience thinking.

A number of other researchers have explored the ways in which adaptability and adaption can be conceptually complementary. Boschma (2015) explores sectoral composition and various forms of links between sectors. When discussing how regional economies may be more resilient, he concludes that achieving both adaption and adaptability simultaneously are the likely to most beneficial for a regional economy over the longer term. A number of other authors also assert the role of strategic actors at varying spatial levels in the process and identify their role as key facilitators of change. For example, Mackinnon and Derickson (2014) assert adaption and adaptability as a complex dynamic which is largely shaped within a multi-scalar institutional environment, involving state, capital, and labour operating at different spatial scales. Within this process it is important to understand varying power dynamics and incentives. Bristow and Healy (2018, p.147) also identify critical decisions and choices of a wide range of agents in the process such as, firms, governments, households, and workers.

These discussions are developed in more detail in this literature review through discussion of the characteristics of various academic definitions of regional resilience, the multi-scalar nature of institutions, and the nature of agency in regional policy making. It is important to note that in these discussions of adaption and adaptability there is a high level of recognition of various actors within the process, this is important for this research because the role and significance of various agents within the process of change remains

a contested element in the way in which regional resilience has been defined and operationalised. This aspect will be discussed in more detail in the next section.

2.2.2 Definitions of regional resilience

As described in the previous section, there has been significant research on understanding various elements of regional adaption and adaptability. Since the global financial crisis in 2007 -2008 and Great Recession which followed, the concept of regional resilience has been increasingly used in academic research to understand uneven development, particularly in relation to economic change. The focus on resilience reflects an increased interest in understanding the properties or attributes of regional economies as a basis for understand their varied capacity to resist and/or recover from economic change. Adaption is predominantly concerned with understanding the process of change, with resilience more closely concerned with understanding the way in which existing and emerging properties combine.

Increased usage of the term regional resilience has not, however, brought clarity in definition or unified measurement of the concept. Regional resilience has been predominantly defined in two different ways by researchers – using either equilibrist definitions, such as ‘engineering resilience’ (the ability to return to the same state), or ‘ecological resilience’ (the ability to form a new state); or adopting evolutionary perspectives, which explicitly reject equilibrist definitions and assert that regions are in state of constant change. The nature of these different understandings is considered in the following sub-sections. This discussion provides the basis for development of the analytical framework which is established in Section 2.4 in order to investigate regional resilience in policy.

2.2.2.1 Equilibrist understandings of regional resilience

Equilibrist definitions of Regional Resilience stem from characterisations of an economy in that is in a stable state, or which has a tendency towards a return to a stable state. There are two forms ways of characterising equilibrist understandings of resilience. Firstly, ‘engineering resilience’ understands resilience as the ability of a regional economy to resist change, with an assumption that this is a desirable outcome. This approach is perhaps restrictive in application if the understanding of resilience is concerned merely with calculation of the extent to which a region has returned to a previous state. However, this approach does provide a research framework within which to understand the impact of single economic events / plant closures (Simmie & Martin, 2010).

Secondly, the idea of ‘ecological resilience’ shares the equilibrist tendency but allows for the possibility that a region may establish a new development trajectory (similar to a pre-

shock state). In this context, a region may establish patterns of economic growth which are stronger / weaker, more precarious / less precarious than prior to an economic shock. Such judgements translate into greater / lesser degrees of economic resilience based on an assessment of the regional economy to resist economic shocks is assessed (for example, (Hill et al., 2011 and Martin, 2012).

A growing number of authors (for example, Boschma, 2011, Bristow, 2011, Martin and Sunley, 2013, and Dawley et al, 2010) identify a common issue with both of these equilibrist definitions is that they each have a tendency toward a relatively static notion of local and regional development. Indeed, whilst equilibrist definitions provide contributions to the discussion, ultimately they are limited in their usefulness because they do not necessarily correspond with the evidence of how regional economies evolve over a longer term and neglect the fact that some change may actually be desirable / necessary for the long-term health of the regional economy.

The concept of engineering resilience implies that it is desirable for resilient economies to exhibit a low level of change to established development paths over time, or rather to exhibit high degrees of adaptation in the face of change. This contrasts with the perceived benefit of evolution in successful regional economies (Pike et al., 2006). The idea of ecological resilience privileges a rather less static understanding of regional economies. Nevertheless, the idea of a return to equilibrium remains a central feature, with the role of periodic economic shocks, socio-economic trends, and technological change resulting in a state of 'punctuated equilibrium' (Simmie & Martin, 2010, p. 4).

Despite criticisms of equilibrist definitions of regional resilience, it is notable that, where the concept of regional resilience has been applied in research, it has most typically been to operationalise equilibrist definitions of resilience. Through a range of studies resilience has been used as a framework to measure relative degrees of resilience, comparing regional performance (for example, Crescenzi et al., 2016; Cuadrado-Roura, et al., 2016; Doran & Fingleton, 2016; Sensier et al., 2016). Such studies have examined the extent to which regional economies resisted negative economic impacts or were able to adapt to particular economic shocks, to assess the extent to which they recovered compared to a pre-shock baseline. These studies are focussed almost exclusively on outcomes, seeking to quantify the influence of a wide range of indicators including aspects such as: sector-specific factors including input-output relationships and labour market linkages between sectors; export levels; and various aspects of human capital.

The application of these methodologies and selection of output-based (employment and economic output) metrics to determine comparative levels of regional resilience, reveal

the focus of equilibrist definitions on systems-based measurement. Structural properties are revealed as privileged concerns in such approaches, with assessment of economic and labour market production assets and their influence on the ability of a region to resist / adapt to negative effects of economic change and return to previous development trajectories (Hill et al., 2011; Martin, 2012). Simmie & Martin (2010) also stress the role of cycles of adaption within ecological systems. Bristow and Healey (2014), however, note that much less research has focussed on understanding the role of human agency in the process of adaptation, they maintain that this should be a central concern if the concept of regional economic resilience is to add to the range of concepts and approaches used in regional policy and research. In this respect the authors assert that it is important to understand the decisions, behaviour and actions of various agents involved in the process of adaption to develop a fuller understanding of the issue of regional resilience. These aspects are discussed in more detail in Section 2.3.

2.2.2.2 Evolutionary understandings of regional resilience

This section focusses on different strands of the evolutionary perspective in order to distinguish their specific features and identify what the implications for what this means in policy and practice. The key elements from this discussion are used in the analytical framework contained in section 2.4.

In response to many of the criticisms of equilibrist approaches to regional resilience, a growing consensus developed around the idea that the concept of regional resilience is more usefully understood within an evolutionary context, rejecting equilibrist assertions, and stressing that regional economies are in a constant state of change (including Bristow & Healey 2014, Boschma, 2011, Bristow, 2011, Martin and Sunley, 2013, Pike et al, 2015, Storper, 2013). Understanding Regional Resilience as part of a wider process of evolutionary change does not necessarily reject all elements of equilibrist approaches, however, indeed Martin (2012) notes the possibility that regional resilience analyses may consider recovery from specific shocks and/or the degree to which regions were able to resist shocks, but also the extent to which emergent changes in regional economic structure are evident.

As a way of reflecting this process of change and adaption, Simmie and Martin (2010) identify four dimensions which should be considered within the process of understanding regional resilience:

- resistance, the degree of sensitivity or depth of reaction to an economic shock;
- recovery: the speed and degree of recovery from a recessionary shock;

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- reorientation, the extent of reorientation and adaption in response to recessionary shock; and,
 - renewal, the extent to which the regional economy renews its pre-recession growth path or hysteretic shift to a new path.

Building on this idea of a dynamic process to understand resilience, Martin & Sunley (2013) illustrate how the concept of Regional Resilience can be understood within sector development cycles. They note that regional economic growth can be a function of life cycles of industries and technologies located therein – with industries and/or technologies going through a process of emergence, youth, growth and maturity, with the hypothesis that as firms or sectors mature they become less flexible or dynamic when faced with economic change – resulting in reduced resilience at firm and aggregate sector / regional level. At a regional level, the competitive position of regional sectors within global value chains is therefore a key determinant of the impact of economic change on the region –as it can determine their degree to which they are vulnerable or can take advantage of economic change (and their ability to plan/react to it).

Furthermore, several researchers have identified the issue that within this process of adaption dominant successful firms in regions often act to increase or reduce the degree of regional adaptability which may be necessary to increase resilience through innovative practice and/or diversification of the business base (Frenken et al., 2007 & Hill, et al., 2011). This highlights a wider issue which relates to the fact that understanding what shapes actions and influences that facilitate adaption and/or stimulate adaptive capacity arguably provides improved insight to understand how and why approaches to regional resilience are taken, moving beyond measurement and comparison of degrees of stability. This is the aspect of regional resilience which this thesis seeks to engage with, as such an evolutionary understanding of regional resilience is therefore perhaps most useful to as it seeks to understand the constant process and inter-play between adaptation and adaptability, with resilience determined by the ability of the region to develop and maintain adaptive capacity.

Where evolutionary definitions have been used in academic research this has typically been through approaches which have explored the process of adaption and the significance of previous development patterns as a source of adaptive capacity. This has taken Schumpeterian ideas of technological advancement and innovation and applied this to understanding of sector life cycles and the influence of these wider developments to such processes (Castellacci, 2007; Fagerberg, 2013; Martin, 2012; Nelson & Winter, 1982). Indeed, Dawley et al (2010) note that such evolutionary approaches to

understanding regional resilience are useful in this regard because they do not restrict analysis to an assessment of change compared to a baseline scenario (accepting that this baseline scenario may not have been desirable / sustainable).

The following sub-sections explore specific strands of evolutionary aspects of regional resilience. These discussions are important for this thesis because they provide a clearer articulation of related concepts and different emphases within the evolutionary perspective. The aspects discussed in this sub-section are then used to inform the developed analytical framework (presented in Section 2.4) for this thesis which provides a focus for the research undertaken to answer the specific research questions.

A Generalised Darwinism perspective

The Generalised Darwinist perspective on adaption sees individual firms as the key determinants of resilience, with resilience understood as the overall result of firm-level performance. Within this process, firms adjust operations based on market conditions, unsuccessful firms cease trading, those with successful operations grow and their methods of operations, products, innovations influence other firms (Boschma and Frenken, 2006). Regional level resilience is therefore a macro-level judgement, or aggregate function, of micro-level processes of individual firms.

Exploring this perspective, there are links to the idea of clustering and related variety. Regarding clustering, similar firms are established or locate within a region, supporting infrastructure then can be understood to 'co-evolve', such as networks and institutions to support innovation networks and support for knowledge sharing and learning and skills support. Such infrastructure can generate or support innovative activity and the development of additional (and supporting) industries. A generalised Darwinist approach highlights the importance of related variety between firms and sectors: the optimum cognitive proximity between economic activities. It should be optimum in the sense that it is not too large, so that it enables relevant and effective learning; but not too small, as agents with the same knowledge cease to gain advantageous learning from each other (Frenken et al., 2007; Boschma and Frenken, 2011; Asheim et al., 2011).

Resilience, therefore, also depends on the related variety between industries within a region, as this will be important for the continued emergence of new economic activities (Boschma, 2015). The higher-level infrastructure that emerges, can over time act as constraining rather than enabling, and reduce the development of new initiatives and hence the variety available (Schamp, 2010). To enable adaptive capacity to develop, it is important that such constraints are removed and that processes which encourage greater

variety in the regional economy are encouraged (e.g., through linkages with firms in other regions; Boschma, 2004; Bathelt et al., 2004; Boschma, 2015).

A key determinant of resilience in this perspective is the extent to which regions are understood to offer competitive development spaces (considering things such as innovation and entrepreneurship) with firms accessing opportunities to locate / relocate operations in different regions (Boschma and Frenken, 2006).

A path dependency perspective

Within the framework of path dependency, the idea of 'lock-in' directly relates to adaptation and resilience. The notion of lock-in suggests that the process of adaptation is hindered, and in the face of change, the resilience of an economy is reduced. Grabher (1993) distinguished between lock-ins at three levels within a regional economy:

- Functional lock-ins: rigidities that inhibit entrepreneurship of people and firms as a result of deeply entrenched relations between firms in the supply chain, and investments in specific assets and technologies.
- Political lock-ins: arrangements between local businesses and the political leadership that ensure that previous development paths are privileged, with supporting public policy to support the status quo and inhibit renewal.
- Cognitive lock-ins: rigidities in the outlook, perspective and ways of thinking of key regional actors. This may emerge through strong political / functional lock-in.

Grabher (1993) also distinguished that within these domains, mechanisms of lock-in (inhibiting adaptation) but also mechanisms of renewal (facilitating adaptation) can be present. Indeed, considering the latter, path dependent development does not necessarily imply a state of lock-in, but may also exhibit on-going incremental development, new path creation, and path branching. With regard to adaptation and resilience it is therefore interesting to consider what determines the extent to which a regional economy becomes locked-in to self-reinforcing processes that constrain opportunities or alternatively, whether it maintains dynamism and an ability for renewal based on positive enabling elements (economic assets, skills base, leadership etc.) of previous development (also see Hassink and Shin, 2005; Martin, 2010).

In the context of this research, the issue of political economy offers an important perspective and set of considerations within which to consider the process through which various forms of lock-in may be reinforced and/or challenged. Mackinnon et al (2019) identify how, a global political economy (GPE) perspective is of interest, identifying that:

In the context of path creation ... a GPE perspective focuses attention on diverse forms of social and economic agency, and the struggles of actors to initiate and

reproduce regional paths in the context of broader, spatially uneven processes of production, consumption, circulation, and regulation (p.115)

Consideration of global political economy and the way in which different actors exercise varied forms of agency is an important area of focus when considering ways in which they may seek to anticipate and manage varied forms of economic change. This is particularly important in a path dependency framework as policy makers may be concerned with issues of how regions can initiate and reproduce regional paths. However it is also of interest for this thesis which will discuss how different institutional arrangements and institutional environments enable or restrict different policy approaches related to regional resilience.

A crucial aspect of the GPE perspective is that it does not separate economic influences and concerns from a wide range of other influences, but rather seeks to form an integrated perspective on factors and influences on development (Perrons 2004). In this respect Mackinnon et al (2019) identify key intersecting dimensions of path creation informed by a GPE perspective which are cross-cutting issues for this research: regional and extra-regional assets; economic, social, and institutional actors; mechanisms of path creation; market construction; and institutional environments. (Mackinnon et al., 2019. p.115).

At a regional level Martin and Sunley (2006) assert the existence of 'path interdependencies', highlighting that there are multiple forms and scales at which historical paths and path trajectories may be observed. Such specificity in the scope of inquiry allows for a greater degree of precision when seeking to analyse aspects of policy and governance which determine path dependencies and different forms of lock-in.

There has been significant research using the idea of path dependency to explore the influence of dominant firms and sectors on regional economies, focussing on the extent to which various forms of lock-in have enabled or disabled the process of adaption. One hypothesis in this respect has been that sector or cluster growth can lead to high sunk costs, particularly in industries such as manufacturing or heavy industry. Over time, investment in the capital base and infrastructure presents self-reinforcing mechanisms especially which make more radical strategic options or exit less likely, and hence facilitate continuation along the same development path (Martin and Sunley, 2006). Additionally, when a few large firms dominate the local industry, this can result in a lack of competition and reduced pressures for continuous renewal (Hassink, 2010; Hervás-Oliver et al., 2011).

Dominance by specific firms or sectors can also reduce the capacity / potential scope for new path creation and path branching (Martin and Sunley, 2006). In the long run, an

important mechanism for positive path dependency encompasses a certain amount of diversity in the economic structure, and in particular some related variety in the knowledge and technological base, from which continued dynamism and renewal will arise (Neffke et al., 2011).

There are also important policy considerations in relation to skills which can result from an over reliance on dominant industries. As dominant industries contract, the labour market will be characterised by skills that are largely obsolete and a culture that does not promote entrepreneurship and enterprise (Hudson, 1994; Huggins and Thompson, 2015). A 'low-skill equilibrium' may result, in which only new economic activities will emerge in the region that will try to capitalise in on low skills and this characteristic culture, without much prospect of investments in upgrading these skills (Finegold and Soskice, 1988; Finegold, 1993; Dawley et al., 2014). However, in some regions, a 'high-skill equilibrium' may be established or result, in which existing high human capital attracts and fosters firms that capitalise on this human capital, resulting in a more desirable virtuous cycle.

A complex adaptive systems perspective

The most important feature of the complex adaptive systems way of understanding adaption asserts the importance of distributed and dispersed agents with a system, each of which asserts some influence. Further complex adaptive systems theory includes strong positive and negative feedback loops, and an element of redundant variety (Martin and Sunley, 2007, pp. 598-590). Adaptation takes place through a restructuring of the relations between components utilising some of the resources and aspects within the system which were not fully used. Feedback loops reduce the effects of the shock through the system (though in some cases feedback loops may act to compound and reinforce these effects).

Relations between the 'connectedness' and resources in the system on the one hand and resilience on the other, have been further worked out in the Adaptive Cycle Model (Holling and Gunderson, 2002), which suggests a dynamic relation between these aspects. The model suggests complex systems go through a four-phased process: first connectedness and accumulated resources build up until a period of stability sets in (from exploitation to conservation phase), then at a certain point the system contracts and declines and loses connectedness and resources (release phase), after which it starts to restructure and recombine again (reorganisation phase), subsequently the cycle starts again and a period of growth and increasing connectedness sets in (from reorganisation to exploitation phase). The degree of resilience – within this model will vary in each of these phases (Martin and Sunley, 2011).

Another feature of the model is that it suggests adaptive cycles at various scales, with those at lower scales 'nested' within those at higher scales. Higher scale cycles will go through the cycle at a much lower speed, than those at lower scales; hence they will normally have a stabilising influence on the smaller scale cycles they also encompass. Within the literature on adaption in economic development this has been applied to the development and role of inter-firm relations and knowledge and technology networks (e.g. Cooke, 2012; Crespo et al., 2013; Wink, 2014). At a higher scale, complex adaptive systems theory has been applied to explain and understand the way in which actors have operated collaboratively (e.g. Cowell, 2013, 2015; Bristow and Healy, 2014, 2015).

Within this framework, the adaptive cycles at different scales could represent how economies and institutions at the regional level are embedded within those at national, supranational and global levels (Simmie and Martin, 2010). Martin and Sunley (2011) have extended and modified the adaptive cycle model somewhat to make it less deterministic, and to better account for the agency and intelligence of actors in the setting of a regional economy, as compared to ecological systems (for which this model was developed). They propose that there is no necessity for a regional economic system to go through the four phases, but instead they may also exhibit constant mutation (and hence stay in the exploitation phase), stabilisation (stay in the conservation phase), re-orientation (go from stabilisation onto reorganisation without going through a release phase), or permanent failure (despite efforts to reorganise, the economy does not enter a new cycle of growth).

Hence the framework suggests that there seems to be a 'natural' tendency for connections to ossify, and accumulated resources to become obsolete, which will then diminish ecological resilience; while on the longer run a regional economy may successfully restructure after a severe crisis and find new growth again (a type of transformative 'meta-resilience' in the model). However, following the modifications by Martin and Sunley (2011), depending on the circumstances and the actions of actors involved, a regional economy may also display the on-going creation of new connections and the constant upgrading of its resources, avoiding decline altogether, hence showing a more persistent adaptive resilience. Conversely, an economy may also never really recover from a severe crisis, thus dismissing the existence of any type of inherent 'meta-resilience'. The framework also suggests that the interactions with higher scales may be important for the adaptation processes and capacity for resilience at lower levels; but in the context of regional economic development, it has yet to be worked out in what ways exactly.

2.3 Governance and policy

This section builds on the ideas of adaption and resilience discussed in the previous sections and discusses governance and policy. The previous sections discussed that the role for different agents varies depending on the way in which resilience is defined. However, the extent to which different institutional arrangements and institutional environments enable or restrict policy decisions in the process of adaption and for different ideas of resilience is not well addressed in current research. This following sub-sections discuss these issues and explores relevant dynamics in different national frameworks that provide the basis for exploration in the empirical research undertaken in this thesis.

The section first establishes the importance of institutions and agency in economic development, establishing the centrality of this element in the study of regional adaption and change. The section then identifies the specific ways in which institutions feature in different definitions of regional resilience, factors which are then used in the analytical framework established in Section 2.4.

2.3.1 Institutions and agency in economic development

Inclusion of various regional policy makers (such as those in public, private, education, and voluntary and community sectors), within a regional economy, in regional resilience analysis is founded in the belief that such stakeholders may be well place to anticipate and manage impact of economic change. Indeed such actors may be able to cope and learn from the experience (as well as inform their response through learning from previous experiences (Bristow and Healy, 2014; 2018). Groups of actors may also draw upon available resources (such as economic, financial, social, political, legal, intellectual, reputational capital) (Evenhuis, 2017). This points to the important role of relations and interactions between actors for adaptation; not only between actors in the private sector (mainly businesses), but also between actors in policy and civil society, and citizens (Bristow and Healy, 2014a; 2014b). Moreover, it also points to the important role of institutions in organising these relations and interactions and coordinating efforts of various actors; and thus, to arrive at “purposeful collective action” (Lang, 2012, p. 290). As it is in a central position, the public sectors plays a key role as a facilitator bringing together key partners and also applying it’s significant resources and powers over various domains, such as: financial, legal, symbolic, intellectual (Eraydin, 2015; Evenhuis, 2017; Hill et al., 2012). The focus of this thesis on institutions, governance and policy will explore the role of collective agency in different contexts.

Researchers have also reflected that dynamism in the relations between governments at various spatial scales within nations, is part of a larger movement towards more 'multi-level governance' (e.g., Bache and Flinders, 2004; Sørensen, 2006; Piattoni, 2009). 'Multi-level governance' indicates the increased interdependence of governments operating at different territorial levels, not just regarding national and subnational levels, but also regarding the supranational level (in particular the European Union for European countries). The concept arose in the context of European cohesion policy, to stress the direct involvement of subnational governments in policymaking (Piattoni, 2009). However, over time the meaning of the concept has expanded somewhat, as it has been applied to policymaking in other fields. The concept now not only encompasses vertical dimensions (the development of a complex set of relations between supranational, national and subnational governments), but also horizontal dimensions: the increased involvement of non-governmental actors (representatives from businesses, civil society organisations, labour unions, etc.) in social dialogue at various territorial levels (Bache and Flinders, 2004).

The result is that there has been a blurring of the traditional distinctions of central and subnational, of domestic and international, and of state and society (Piattoni, 2009) illustrating that there is varied importance, or potential importance, of a wide range of interests in policy making. Understanding the role of various institutions and the ways in which they define resilience and associated priorities is therefore likely to be highly place-specific. There has been substantial discussion among policy makers and academic researchers regarding the debate about the importance of place-based factors in economic development. This debate has been characterised by an overwhelming consensus that formulation of economic strategy can most effectively be undertaken in a manner consistent with addressing the strengths and opportunities of specific regions and localities (for example, Barca, 2009, Commission of the European Communities, 2009; Hildreth & Bailey, 2014; Krugman, 1997; McCann & Ortega, 2015; Rodríguez-Pose & Gil, 2005). This has been accompanied by novel forms of devolution which have placed an increasing onus of regions and regional policy makers to devise novel or bespoke settlements, for example: Regional Growth Agreements, Growth Deals, Territorial Pacts, City Deals, Territorial Development Contracts involving different tiers of government (e.g. central, state, local) and/or different organisations and sectors (e.g. public, private, voluntary).

This inevitably brings greater challenges given the multi-scalar nature of policy making outlined above and, when set within different institutional arrangements and institutional environments, has implications for the formation of relevant regional resilience policies

and practices. The following section explores some of the regional resilience-related policy responses that have been developed within these policy making structures.

The academic theory related to regional resilience has described the various processes and scenarios through which regional economies evolve, for example through mobilisation of concepts such as path creation, related variety, and the role of economic shocks. However, relatively little research has explored the role and significance of institutions in shaping different forms of regional resilience. This section discusses institutions and the ways in which they are linked to regional resilience.

Institutions are understood to matter in a wide range of contexts because they define the “rules of the game” through establishing the framework under which economic agents operate in an economy. According to Gertler, (2010, 2) institutions exert an influence on the character and evolutionary trajectory of regional economies that is often subtle, sometimes dominant, but undeniably pervasive. When applied to regional economic development, Storper, (1995) asserts that an institutionalist approach draws attention to the extent to which region’s internal characteristics or ‘social infrastructure’ influences the ability of the regional economy to grow.

Indeed, this latter issue has been the focus of significant discussion among economists and other social scientists for some time (perhaps dating back to Max Weber’s ‘Economy and Society, 1922) as well as policy makers concerned with regional economic development. Rodriguez-Pose and Storper (2006) demonstrated that there is a quantitative impact of institutions on economic outcomes, validating and enthusing approaches which seek to establish how institutions work best and which elements are most important (for example, Glaeser et al., 2001; Rodrik, 2004; Tabellini, 2010).

The present research is not concerned with the specific issue of economic growth per se, but rather to better understand the role of institutions in the policy making related to regional resilience. In this sense Rodriguez-Pose, 2013, identifies two important reasons for institutional inquiry, the second of which is an important consideration for the research. The first reason is the fact that the evidence that previous approaches to regional economic development have been successful is not clear, therefore there is value in identifying potential new approaches to regional policy through assessing how best regional assets may be harnessed. Secondly, researchers have turned to institutional analysis to try and develop a better understanding of the way in which the process of economic development works – specifically how and why it takes place. It is the understanding of this process in relation to regional resilience which is of interest to this research. This aspect is important given that, as will be discussed below, it is the role of

institutions in the processes of adaption and adaptability in different contexts which is not well understood.

Of concern to this thesis is to develop an understanding of regional resilience and to try to identify the mechanisms through which development paths is maintained or path creation is enabled, thus identifying the institutional and other drivers of regional resilience. In this respect the three main forms of agency identified by Grillitsch and Sotarauta (2018) are instructive. The authors argue that policymakers are influenced by both historical growth paths and their perception of future opportunities, identifying three main forms of agency which influence growth paths: innovative entrepreneurship, which relates to the behaviours of businesses and individual entrepreneurs in disruptive path creation based on market opportunities, or classical Schumpeterian disruptive innovation.

The second form identified by Grillitsch and Sotarauta (2018) is that of institutional entrepreneurship, which recognises the role for regional development institutions as 'a force moulding rules of the game and playing fields for innovative entrepreneurs to surface and succeed' (Grillitsch and Sotarauta 2018, p.13). This aspect of path creation presents a more gradual change driver and a more strategic role for institutions in place development. This aspect is interesting as it raises questions regarding the extent to which institutions environments are embedded and may seek to protect existing institutional arrangements and sunk-costs.

Lastly, the notion of place-leadership is identified. This aspect relates to the ability of regional leadership to influence a range of actors involved in regional governance over a sustained period of time in ways that drives change. In this respect a combination of the prevailing institutional arrangements, institutional environment, and leadership skills of particular individuals within the process are important in understanding the regional approach.

The authors assert that place leadership is effective when it is 'concerned with (a) launching and guiding interactive development work that crosses the many organizational boundaries and professional cultures, and (b) guaranteeing the versatile engagement of various stakeholder groups and helping them to both contribute to and take advantage of development processes and their fruits' (Grillitsch and Sotarauta 2018, p.15).

In this respect place leadership and commitment of regional partners to particular approaches or development paths is likely to be most successful with the collaboration between most relevant, if not all, regional partners. However, as Mackinnon et al (2019, pp.145) observe in analysing the way in which institutional environments operate in practice: 'states play a central role as differentiated ensembles of institutions, meaning

that particular policies and initiatives may be subject to political contestation between different branches of the state...the legitimisation of an emerging path requires a critical mass of actors who can form packs of entrepreneurs, working through industry associations and other collective agencies'

In this respect, consideration of governance and policy and the extent of its role in shaping forms of regional resilience clearly benefits from a GPE perspective, as described in relation to path dependency in (Section 2.2.2.). As identified by Pike (2020), a GPE perspective provides significant value given the fact that it places an emphasis on the fact that actors responsible for seeking to foster economic change operate within their own existing wider structures and networks. As such, social relations, multiple interests, dynamics and politics are important elements to explore. Understanding this is important in understanding some of the drivers and barriers related to forms of agency identified by the Grillitsch and Sotarauta which were discussed earlier in this section. Of particular interest to this study is the way in which this process operates and to what extent this contributes to understanding of regional resilience.

2.3.2 Policy and governance in academic definitions of regional resilience

This section considers different academic definitions of regional resilience discussed in Section 2.2 and considers the extent to which they allow a role for policy and governance. This discussion is reflected in the analytical framework presented in Section 2.4, and also informs lines of enquiry used to investigate policy and practices identified in case studies undertaken for this thesis.

The purpose of this section is to build on the discussion of the various features of definitions of regional resilience outlined in the previous section of this literature review and establish what these various notions of resilience may look like in policy and practice. This helps to distil some of the key elements in a way that can then be brought together in the analytical framework presented in Section 2.4.

The fundamental purpose of this is to provide a way in which to close the gap between theory and policy and provide a framework within which to answer the thesis research questions.

Equilibrist understandings of regional resilience

Such understandings of Regional Resilience stem from characterisations of an economy in that is in a stable state, or which has a tendency towards a return to a stable state. The 'engineering resilience' definition relates to the ability of a regional economy to resist change, with an assumption that this is a desirable outcome. The idea of 'ecological

resilience' shares the equilibrist tendency but allows for the possibility that a region may establish a new development trajectory, establishing a new equilibrium (or may return to a pre-shock state). In this context the region may establish patterns of economic growth which are stronger / weaker, more precarious / less precarious when compared to the situation prior to economic change. Such judgements translate into greater or lesser degrees of economic resilience as the ability of the regional economy to resist economic shocks is assessed (for example, Hill et al., 2011 and Martin, 2012).

Mobilised in policy, equilibrist definitions privilege maintaining a settled equilibrium or re-establishing equilibrium following economic change. In the case of engineering resilience this translates into maintaining the previous development patterns. By comparison, an ecological resilience also seeks to return to a settled equilibrium, however this is based on an update version of the previous development trajectory. The nature of the new development path is therefore dependent on new or emerging possibilities for regional development. The ecological perspective of equilibrist resilience therefore potentially allows for a greater scope of policy interventions based on a range of possible growth paths. It also potentially allows for a greater scale of policy intervention dependent on new possibilities.

A Generalised Darwinism perspective

The Generalised Darwinism framework explains the emergence of phenomena on higher scales from the population dynamics and interactions between micro-level actors (primarily firms). This leaves scope for the incorporation of the emergence and evolution of some institutional arrangements (and possibly also some governance arrangements) through co-evolution. Furthermore, a notion of collective action of different firms (and other micro-level actors) deliberately working together to achieve common objectives, could also be included within the framework (Boschma and Frenken, 2009, p. 155; Boschma and Frenken, 2015, pp. 9-10).

However, there are limitations in the framework regarding the role for policy and governance. There is consensus in the academic literature regarding the importance of institutions and the role of policy in positive regional economic and labour market outcomes (e.g., Boschma and Capone, 2015; Boschma, 2015; Boschma and Frenken, 2015). However, there appears little room to analyse a role for the state or policy interventions in the adaptation and resilience of regional economies (see also MacKinnon et al., 2009). These are strictly speaking, exogenous forces within the framework.

The framework does include incorporation of institutions that have come about through the operation of co-evolution with firms and industries in a region (in relation to, for

example: production practices, regulation of conflicts within firms, specialised education and training, patenting, social capital, representation of interests) However, those institutions that could not plausibly be explained by co-evolution are not part of the framework and would not be included in the analysis (such as the state and many forms of policy interventions, but also aspects that make up overarching institutional frameworks, such as industrial relations, corporate governance, or the general education system). The framework therefore somewhat plays down the role of policy making / place-shaping with the process of adaption and does not seem consistent with the general consensus (noted above) of the importance of institutions, influence of policy.

A path dependency theory perspective

Grabher (1993), suggested that politicians, business leaders, and trade union officials may have constituted 'growth coalitions' in which they protected each other's interests. As a result they failed to facilitate renewal on time, and the crisis in the steel and coal industries in the 1970s and 1980s took them by surprise. In the cognitive domain, forms of complacency and myopia may create rigidities in the outlook of local elites (also Maskell and Malmberg, 2007).

Additionally, in this domain, mechanisms of positive path dependence may exist, which facilitate renewal and ongoing development based on the legacies of the past. Indeed, while the development of governance arrangements and policies may be path dependent, they do not necessarily entail 'lock-in' and their development may depend on certain circumstances. These findings suggest the importance of a more open-ended notion of path dependence that emphasises on-going dynamism (as suggested by Martin (2010)), and also point to the importance of examining the wider context in which mechanisms of positive and negative path dependence take place.

The idea of 'path contingency' was introduced to counter the tendency within path dependence to afford primacy to structure, i.e., to see only a very minor role for agency in the development of a path; agency instead being limited to 'critical junctures' when new paths were being created (Johnson, 2001; Hudson, 2005). Path contingency wants to focus instead on the dynamic interaction between agency and structure both in the continued development of the path, and also in times of critical junctures.

Path plasticity refers to "the dynamics within a path and the way actors use the narrowed down or the limited range of choice (...) in creative ways for the development of innovation without breaking out of the path." (Strambach and Halkier, 2013; p. 1). Starting from the presumption that paths are not completely coherent in themselves, a broad range of

options will exist at any moment to combine different elements that have been handed down from the past within the path.

In this respect, the three main forms of agency, outlined above, identified by Grillitsch and Sotarauta (2018) are a useful consideration. The authors identified three main forms of agency which can be understood within a path dependency framework influence growth paths: innovative entrepreneurship (which can act as a form of creative destruction); institutional entrepreneurship (the ability of institutions to mould the rules of the game and influence development paths); and place leadership (the extent to which regional leadership influences a range of actors in ways that drives change).

The Path Dependency framework thus offers a good basis for analysing the aspects of policy of governance in regional economic adaptation and resilience. It directs attention to the various interdependent mechanisms of continuity and change in different domains and at different levels of scale. The role for policy and governance in adaptation and resilience is to break through mechanisms of lock-in and try to create mechanisms of positive path dependence (based on on-going dynamism) in the functional domain.

A complex adaptive systems perspective

A focus on complex adaptive systems asserts that the degree to which different actors in a region are able, or enabled, to undertake collective approaches and specific actions which may make a region more resilient has a clear link to governance and policy.

Bristow and Healy (2014, 2015) consider the role of policy and governance in regional resilience from a Complex Adaptive Systems framework. They highlighted the interactions and connections between actors to be able to arrive at an adequate response in the face of a shock. Their work illustrates the importance of anticipation, information, communication, and narratives for such collective agency. Moreover, they distinguished between immediate policy responses to manage an emerging crisis, and interventions aimed at the longer-term transformation of the regional economy.

Cowell (2013, 2015) analysed the role of policy and governance (under the heading of 'leadership') in 'transformative' adaptation and resilience from a Complex Adaptive System perspective. The author compared how eight metropolitan regions in the American Midwest dealt with deindustrialisation, concluding that regions with a diverse set of actors involved in decision-making generally performed better than regions that lacked diversity among decision makers.

A Complexity Theory framework highlights the importance of connectedness and collaboration between various actors, and the collective agency and leadership they may

exhibit though this. Potential limitations with the complex adaptive systems regarding the role of policy and governance can be identified:

- The framework has not much to offer with regard to the question of how governance arrangements and policy evolve over time. The role of agency in pushing the development of connectedness, governance arrangements, and policy would is therefore not given significant prominence. Consequently, the analysis of policy and governance so far has remained essentially static, i.e., purely as structures ('networks') or agency ('leadership') at certain points in time, without much reference to an 'internal dynamic' between structures and agency, that would explain the development of policy and governance over time.
- Conceptualising governance arrangements in terms of 'connectedness' highlights the fact whether or not connections between actors exist (or not) but overlooks the exact nature of these connections. That is, governance arrangements are more than just 'networks', especially when they involve coordination and decision-making; and the way arrangements structure the interactions between actors, and the way they shape the use of powers and resources, should take centre stage. That Bristow and Healy (2014, 2015) have drawn attention to the processes of anticipation, sense-making, and communication, constitutes an important addition in this context, as such processes may also be embedded in governance arrangements.
- The role of relations with actors external to the region is not significant in previous work on this framework. More specifically the extent and specific nature of connectedness between actors for policy and governance has not been a significant part of the framework as applied in previous research.

2.4 Developing an analytical framework to explore regional resilience in policy and practice

This section outlines an analytical framework for the study which is based on the discussion of regional resilience and institutions in regional policy outlined in Section 2.2 and 2.3. The purpose of the analytical framework is to link definitions of regional resilience with potential policy approaches through using the key features and emphases identified in the preceding sections.

To construct the analytical framework, this section maps the different academic definitions of regional residence, comparing equilibrist understandings of engineering and ecological resilience with different understandings of the process of adaption, such as the Darwinist

perspective, complex adaptive systems perspective, and a path dependency perspective. The purpose of the framework is to provide a way of understanding how theoretical understandings of regional resilience translate into policy approaches to anticipation and management of economic change so that this can be used in analysis.

The framework draws out different characteristics and emphases within definitions of regional resilience and the process of adaption to compare the nature of the dynamics of change and to identify the role and significance of different underlying processes and concepts. The framework includes key issues for anticipation and management of economic restructuring which are identified in theoretical understandings of regional resilience: firm-level considerations, regional innovation assets, learning and skills, and infrastructure development. The analytical framework also identifies the role of agency, policy and governance in the process of regional resilience, identifying how the role and influence of policy varies between different definitions of regional resilience.

The overall purpose of the analytical framework (presented below in Figure 2.1) is to provide a basis upon which to use existing definitions of regional resilience to design research tools for the thesis and provide a framework for analysis which ensures that empirical inquiry remains consistent with established theory.

The framework below (Figure 2.1) summarises the issues discussed in this chapter.

Figure 2.1 Analytical framework

Dimension / linked concepts	Equilibrist understandings of regional resilience		Evolutionary understandings of the process of adaption		
	Engineering perspective	Ecological perspective	General Darwinist perspective	Path Dependency perspective	Complex Adaptive Systems perspective
Understanding of resilience / dynamics of change	Resilience is determined by the ability to return to previous development paths and settled equilibrium.	Resilience is determined by the ability to return to previous or related development paths and settled equilibrium.	Resilience is based on an aggregate of firm-level dynamics, based on Darwinian principles of variation, inheritance, and selection.	The regional development path is ongoing /dynamic. But may be subject to various lock-ins.	Resilience of the system is derived from the ability of components to restructure / reform relations (collaboration and coordination).
Firm level considerations – Related variety – Sector life-cycles – Global value chains	Settled development paths and the role of pillar firms and key sectors within a settled equilibrium are the key focus. Resilience is provided by key sector(s) competitiveness.	Previous development paths, pillar firms and key sectors key to resilience, these key assets also provide sources for diversification.	Economic adaptation at regional level, are an aggregate of the processes at the micro-level of individual firms within a region.	Distinct path dependencies may operate within firms / sectors. Extent to which firms / sectors take advantage of global value chain developments may be constrained / enabled by endogenous lock-ins.	Firms play an important role within the system, but other actors also important. No significant concentration of firm / sectoral demography.
Regional Innovation assets – Innovation systems – Cluster dynamics	Innovation assets and support structured around key sectors, based on supporting settled development paths.	Structured around key and emerging sectors and supply chains.	Networks naturally emerge (or are established) to support clusters as they emerge.	Extent to which innovation systems / cluster support is provided may be constrained / enabled by lock-ins / path creation.	The regional innovation system is key: (networks) connectedness and collaboration a vital feature of the system.
Learning and skills – Skills-equilibria / learning regions	Regional strategy and educational institutions directly supportive of key sectors / pillar firms, closely linked to innovation systems support.	Regional strategy and investment to support existing and new sector needs, closely linked to innovation systems.	Not a significant feature of resilience. Support firm and sector needs as new demand is created.	Learning region is an important aspect. Provision may be constrained / enabled by lock-in / path creation.	The learning region is an important aspect for all parts of the system / network.

Infrastructure and place development	Explicitly supporting existing development paths.	Supporting existing and emerging development paths.	Not explicitly described.	Not explicitly described.	Not explicitly described.
Main agents of change	Public sector and dominant firms / sectors.	Public sector and firms.	Firm behaviours understood to be the leading drivers of change.	Wide range of public and private sector actors, involving various spatial scales.	Wide(est) range of public and private sector actors, with varied power relations a focus of interest.
Role for public policy <ul style="list-style-type: none"> – Institutional structures – Institutional environments – Global Political economy 	The main purpose for public policy is to provide support to maintain settled development paths of return to settled equilibrium(s). Supportive of historically important existing development paths.	The main purpose of public policy is to supports existing development paths and related paths (diversification). Supportive of renewal / new paths to develop a new settled equilibrium.	Limited / not significant, no place-shaping. Co-evolution of some supporting institutions alongside sector growth. Potential role for public policy in reducing barriers to enable innovative entrepreneurs to function.	Policy and governance are key to resilience. Presence / importance of forms of lock-in (functional, political, and cognitive); forms of institutional entrepreneurship, place leadership & political economy of adaption are possible key dynamics of resilience.	Policy and governance understood to be key to successful adaption. Networks of decision makers an important focus for analysis. Collective agency and the role of a variety of decision makers is seen as important for sustainable adaption.
Policy outcomes and forms of measurement / assessment of level of regional resilience	Resistance (initial impact of economic change) Recovery (extent of return to previous levels and type of employment / economic output)	Resistance (extent of initial impact of economic change) Recovery (extent of return to previous levels of employment / economic output) Reorientation (degree of reorganisation or reorientation of existing functions)	Reorganisation (observed as an open-ended process, not contingent on previous forms of development) Reorientation (extent to which there has been reorganisation or reorientation based on existing and new development paths)		

2.4.2 Understandings of regional resilience and the process of adaption included in the framework

The framework distinguishes between equilibrist and evolutionary definitions of regional resilience, with the first part of the framework summarising the overall dynamics of change that are important for different understandings. Section 2.2 of the literature review discussed the distinction in between engineering resilience, ecological resilience, and evolutionary understandings of resilience. Engineering resilience implies a return to some previous equilibrium; ecological resilience suggests economic shocks may transition regions into a different equilibrium state or growth trajectory. Evolutionary understandings of resilience assert a dynamic process of adaption and constant renewal, ejecting the idea that regional economies are in equilibrium.

An important aspect of the distinction between engineering, ecological and evolutionary ideas of resilience is the extent to which engineering and ecological understandings of resilience focus on the ability of regions to withstand and/or rebound from economic shocks. As such, engineering and ecological definitions are mainly concerned with resistance and renewal and the reestablishment of a previous or renewed settled development path, with an engineering conception stresses the importance of returning to previous development paths. Whilst the ecological understanding is more concerned with reorganisation and reorientation, such changes take place within the boundaries of previous development paths - the character of the economy, its essence and basic operations, and size are not fundamentally changed (Maru, 2010, p. 16).

By contrast, the evolutionary definition places a heavy emphasis on the processes of reorientation and reorganisation. In this conception, adaptation and resilience are then essentially associated with, and descriptive of, a capacity for transformation (Pendall et al, 2010). Maintaining an existing development path and supporting infrastructure is no longer understood as an objective in itself; and the processes of reorganisation and reorientation behind adaptation and resilience are seen as entirely open-ended (Evenhuis, 2017).

Within the evolutionary framework of Generalised Darwinism applied to regional economic evolution, the most significant actors and units to understand regional adaption are individual firms. In this sense adaptation in regions is an aggregate of the adaptation processes that relate to firms, with successful firms adapting operations where they are no longer profitable, with firms that are not able to successfully implement such changes ceasing to trade, successful firms are able, by contrast to

adapt to changing market conditions and/ new opportunities (Boschma and Frenken, 2006). Adaptation processes at the level of regional economies, are then entirely a function of these micro-level processes of individual firms within the region

Within the evolutionary framework complex adaptive systems approach recognises that regions constitute complex adaptive systems, involving a range of actors such as, (firms, institutions, networks, and individuals (Martin and Sunley, 2007). Each of the components of the system exhibit distinct behaviours and reactions to the behaviours of others within the system, as such the system is not fixed but rather adapts and changes over time (Bristow and Healey, 2014). The system is recognised as evolutionary in nature as the system is open and subject to change through unplanned or unforeseen actions of actors.

Lastly a path dependency, evolutionary framework stresses the importance of previous economic trajectories and directions to current development paths. Martin and Sunley, (2006) stress that a path dependency framework does not imply a static (or equilibrium) regional state, but rather that regional economies can exhibit a constant process of change. Through this process new industries will expand and contract in ways that are consistent with the previous economic and social development paths, with the emergence and adoption of new technology a critical driver in this process. Henning et al. (2013) outline three principles which help to illustrate change dynamics of path dependency in regional resilience. Firstly, the authors state, improbable events have a long-run effect on economic structures; secondly, mechanisms such as increasing returns or network externalities persistently reinforce the situations created by chance events, a phenomenon often known as lock-in; thirdly, external shocks can disrupt the persistence of the locked-in pattern.

2.4.3 Policy concepts included in the analytical framework

This section discusses policy concepts included in the framework which are related to regional resilience and which play an important role in understanding the concept and its connection to policy and practice. The role and significance of these concepts varies between different understandings of resilience.

The importance of firm demographics, variety/related variety, and sector life-cycles

The importance of the sectoral mix as a key factor in enabling regions to react to economic shocks and to take advantage of new market developments is well established in the regional resilience literature (Boschma, 2014; Bristow and Healey,

2010; Crescenzi et al, 2016; Davies, 2011). In this respect there has been discussion of the importance of industrial variety as a potential shock-absorber, with a so-called portfolio approach acting to limit negative impacts and provide a platform for diversification (Neffke and Henning, 2013).

In relation to resilience, the nature of the links between firms and industries operating in region is explored in previous research. Boschma (2015) argues that industrial variety may be most beneficial for resilience when there are limited input-output relationships between industries in a region. Frenken (2007) argues that the shock absorber effect is increased when regional industries are disconnected in cognitive terms, with Neffke and Henning (2013) stressing the importance of skills relations between industries are strong. The latter facilitating transfer of labour between industries as required during economic shocks or longer-term economic change.

The strength and nature of firm demography and links between firms is important in various notions of regional resilience, however this varies depending on the way that resilience is defined. This is reflected in the framework below; the following points are relevant.

Within equilibrist perspectives of resilience, firm dynamics play a key role, analysis of the sector mix, sector competitiveness and position of key sectors within global value chains plays an important role. Within evolutionary understandings, a Generalised Darwinist perspective stresses the centrality of firm dynamics to adaption. In this respect, growth of a successful firm and the spin-offs and/or spillovers it will generate, will likely be in one geographical location, and hence over time industry clusters will emerge – this also leads to development of institutions, networks that are put in place to support successful firms and clusters as they emerge (Frenken, 2007; Boschma and Martin, 2010). Within a complex adaptive system, firms are important actors, but they are not dominant with other key actors involved in coordination equally influential in the process of adaption, through governance and policy (Bristow and Healey, 2015; Cowell, 2015).

Similarly, in a path dependence approach to adaption firm dynamics and behaviours are important but the concept of path dependence can equally be applied at lower scales, in the case of particular technologies, and higher scales, in the case of clusters or industries (Henning et al., 2013).

Regional innovation systems and learning regions

Consideration of innovation conditions and innovation performance are a consistent feature of analyses of regional resilience, the basis for this is that economic performance of regions can be influenced through innovation capacity – or rather their capability to generate new knowledge and/or the capacity of firms within the region to absorb this (and externally generated) new ideas (Fagerberg, 2013; Martin, 2012; Martin & Sunley, 2013; Nelson & Winter, 1982). Additionally, as Crescenzi et al, 2016 identify, regions that invest, and are understood to be investing in, innovation and human capital capacity are most successful in attracting high value-added inward investment. This, they note has the potential to anchor the regional economy in most advanced stages of global value chains.

As such policies and practices aimed at investing in human capital for regional development initiatives to foster innovation may act support and regional sustain adaptive capacity in mutually reinforcing ways. There is clear potential for such effects to support positive regional adaption when faces with seemingly negative exogenous events. Therefore, both of these structural characteristics may be important in understanding how regions respond to economic change, and potentially re-form and/or support renewed development paths. This is an important feature of equilibrist definitions of regional resilience and is recognised in Figure 1 above, in this respect innovation support is most clearly aligned to sectors supporting, or closely aligned to previous development paths.

The link between innovation and regional resilience is also further explored in the literature, with Clark et al. (2010) drawing a link between levels of innovation in small firms and increased resilience. In this respect the authors draw a link between policy which enables / encourages innovation in small firms irrespective of sector increasing the overall resilience of regions. There are therefore strong links between innovation capacity and regional resilience, with a clear role for policy (and funding) to enable such activity.

The impact of dominant industries or firms within regions is as also explored in regional resilience literature, most notably that which analyses the process of adaptation in a path dependency framework. In this respect, it is noted that different effects are possible. In terms of positive impacts, Porter (1990) identifies the potential for pillar firms to encourage agglomeration effects which stimulate smaller firms to innovate and to become more entrepreneurial as a reaction to possibilities for economic growth. However, the extent to which this plays out in practice remains contested. Indeed, this

is not a new question, Chinitz (1961) identified potential negative effects of dominant firms and/or industries on smaller firms, which can play out over short or long term timeframes. The author identified a range of potential effects (including input prices, capital accessibility, and reduced regional labour supply – due to increased specialisation). Each of these effects may reduce regional economic activity but the significance of individual factors will vary depending on contextual factors

Labour market competencies: skills and human capital

The importance of education and, more specifically, the orientation of educational assets toward the needs of the regional labour market is well established in academic studies that discussing regional resilience (for example, Clark and Bailey, 2018; Christopherson and Michie, 2010; Glaeser et al., 2012)

Within the literature on equilibrist definitions of regional resilience the importance of skills and labour force competencies is established as a particularly important explanatory factor influencing relative levels of regional resilience, particularly regarding the ability of regions to resist and return to previous development paths. In such analysis, factors that contribute to more / less resilient regions include indicators to compare the skill levels / human capital capacity of regions, with this understood to be an important contributory factor to successful regional reactions to economic shocks. In this respect, for example: regional educational attainment levels; unemployment and long-term unemployment data; and concentrations of unemployment / worklessness (Crescenzi, et al., 2016; Davies, 2010; Doran and Fingleton, 2016)

In evolutionary understandings, adaption or the ability of a region to take advantage of opportunities for renewal, the emergence of a new industry or sectoral niche is understood to be facilitated or enabled 'by the pre-existing resources, competences, skills and experiences inherited from previous local paths and patterns of economic development' (Simmie & Martin, 2010, p. 6), indicating the focus on human capital is important – with a requirement to link skills levels to other regional assets and policy responses that seek to enable reorientation or transition to other forms of economic activity following economic shocks or longer term change.

In this respect skills should be understood alongside the ability of individuals and regions to mobilise necessary capacity to enable the competencies of individuals (and firms) to take necessary actions to adapt where necessary to changing conditions. In relation to complex adaptive systems and path dependency notions of regional

resilience the application of the concept of the learning region (Morgan, 1997) is relevant in this respect, with the role of actors involved in the process to establish necessary networks to support human capital development to support adaptation.

The role of agency in regional resilience

An identified gap in the current academic research on regional resilience is the neglect of political and socio-institutional dimensions of regional development (Hassink, 2010; Pike et al., 2010). Some research has sought to fill this gap through exploring the nature of agency and the extent to which prevailing institutions provide effective mechanisms within which relevant stakeholders may establish policy and practice relevant to regional resilience (for example, Bristow and Healy, 2018; Hassink and Gong, 2020).

Application of the equilibrist approach to regional resilience has included a wide range of studies that have calculated comparative resilience of regions based on their ability to resist and/or recover from economic shocks. In this respect there have also been a range of studies that have evaluated the success of policy in facilitating maintenance of current or reinstatement of previous development paths compared to previously assumed stable states of equilibrium.

As noted above, in a General Darwinist perspective on adaption, there is little consideration of the role for policy makers in shaping regional resilience policy and outcome. However, there remain endogenous and exogenous forces which shape regional resilience opportunities and outcomes, many of which are linked to factors discussed in this section (firm -level decisions, labour market competencies, and the presence and quality of regional innovation systems).

In relation to the process of adaption, the literature review outlined an increasing interest in path creation and the role of various agents within the process (MacKinnon et al, 2019; Morgan 2017; Neffke et al., 2011) as a way of explaining regional resilience. In this respect the typology offered by Grillitsch and Sotarauta (2018) to explore the way in which different forms of agency may operate to facilitate path creation at regional level is important. Here it is argued that distinct forms of agency may shape regional development: innovative entrepreneurship (which focusses on firm-level dynamics and the importance of entrepreneurs in path creation); institutional entrepreneurship (a more gradual form of path creation supporting particular path creation agendas); and, path advocates, or place leaders, referring to leadership that delivers place-renewal through public-private partnership to develop a collective vision

Grabher's (1993) three forms of lock-in relate to the concept of path dependency in a regional economy (functional lock-ins, political lock-ins; and cognitive lock-ins – also discussed in Section 2.2.2) are of significance because they offer insight into the path dependent understanding of regional resilience but also provide aspects which can be explored to understand approaches to regional resilience more generally. Additionally, the literature review discusses the multi-scalar nature of policy making which impacts on regional resilience approaches. Most understandings of the multi-scalar nature of policy making stress two distinct but linked aspects - vertical dimensions (the development of a complex set of relations between supranational, national and subnational governments), but also horizontal dimensions: the increased involvement of non-governmental actors (representatives from businesses, civil society organisations, labour unions, etc.) in social dialogue at various territorial levels (Bache and Flinders, 2004). In this respect, actions and policies of national governments and supranational bodies such as the European Union, or multinational corporations, have a large influence on the performance of a region during and after a shock (Evenhuis, 2017; Lang, 2012; Pike et al., 2010;). Appendix 1 contains details of specific EU policy relevant to the focus of this thesis.

2.5 Discussing national frameworks to identify a spatial focus for the research

This section discusses how best to deploy the analytical framework for this thesis developed in the previous section. The section considers the way in academic researchers have approached and classified institutions, discussing the relevance of different classifications for this research. The section identifies two quite different institutional set-ups in the UK and Denmark as appropriate settings to conduct the research for this thesis (specific discussion regarding case study selection related to methodology is outlined in Section 3.3).

Within the literature on comparative capitalisms, there is a focus on institutional diversity across national contexts, with key policy domains and leading institutions and their efficacy in various areas frequent foci of enquiry, such as: education and skills formation, employment relations, financial systems, inter-firm networks, internal firm dynamics, ownership and corporate governance, and the institutions of the state (Jackson & Deeg, 2008, Witt & Jackson, 2016). Studies have also explored how various institutional configurations result in various classifications of arrangements. The 'varieties of capitalism' literature (Hall and Soskice, 2001) is often cited in this respect.

Hall and Soskice identify two types of economy: co-ordinated market economies and liberal market economies, under which four systems operate: an industrial relations system; a financial system; an education and training system; and an inter-firm system.

The authors also identify specific elements which distinguish national systems, such as: corporate governance and finance arrangements; organisation of the labour market; product market organisation; and social protection and competition. Amable (2003) identified five types: market-based, Asian, Continental European, social democratic, and Mediterranean. Whitley (1999) describes six major types of business systems: fragmented, coordinated industrial district, compartmentalised, state-organized, collaborative, and highly coordinated.

The classification of different countries by these categories highlights the importance of national framework conditions and provides an indication of the framework conditions upon which regional policy is developed. However, these frameworks are contested, with subnational factors such as sectors (Hollingsworth et al. 1994) and local factors (Crouch et al. 2004) put forward as more appropriate units of analysis.

The basic premise of this approach which is relevant for this research is that institutions combine to establish the framework conditions upon which firms establish the most efficient way for them to function (Hall and Soskice (2001)). In this sense the efficiency of the national system depends upon 'institutional complementarities'. Applied at regional level it may be understood that such institutional complementarities are desirable both between institutions operating within regions and also between the region and relevant national / European institutions. Appendix 1 contains details of specific EU policy relevant to the focus of this thesis, such policies arguably contribute to institutional complementarities between nations and regions of the EU.

The extent to which there are significant and persistent differences between institutions is subject to some debate. A significant body of research previously rejected the possibility of institutional convergence (Hall & Soskice, 2001; Whitley 1999; Yamamura & Streeck, 2003). Schmidt (2008) provided a challenge to such assertions however, identifying common trends such as the rise of corporatist approaches in the 1980s, followed by liberalisation of financial markets, and deregulation of business (Schmidt 2002). The rise of international and regional trade organisations, such as the European Union and European institutions governing economic development, challenge the degree, at least in Europe, that divergence in approaches are sustainable over the longer term (Schmidt, 2008).

The frameworks identified above are influential and do, to some extent, provide useful understanding of the way in which academic theory has conceptualised the differences between countries and offer a starting point for identifying potential case studies which could explore institutions and their role in shaping policy related to regional resilience. Indeed, it is through consideration of the distinct national frameworks of the UK and Denmark were first identified as possible case study countries within which regions could be selected.

As a result of the criticism of the frameworks described above, alternative, more applied ways of understanding national systems have been developed. The European Commission through its *Flexicurity* policy statement (European Commission, 2008) distinguishes between five different systems in Europe: the Anglo-Saxon system; the Continental system, the Mediterranean system, the Eastern European system, and the Nordic system. They identify four components of national systems: contractual arrangements from the point of view of both employer and worker; lifelong learning strategies; active labour market policies; and social security systems. These four components operate depending on formal and informal social dialogue between various institutions in the process of relevant policy formation. The classification outlined in the Flexicurity framework is therefore useful, adding to those identified above - but it is the underpinning process of social dialogue which is of specific interest to this study – it is this process which is influenced by the institutional arrangements and institutional environment. The case of Denmark is interesting given that provided an example of a strongly consensus-led national framework which is quite distinct from most others in Europe, and especially distinct to that of the UK.

The findings of two studies, each sponsored by the European Commission provide further insight useful in the case study selection. Firstly, a study for the European Trade Union Confederation (2006) outlined a set of criteria upon which to determine European countries as either having a: Market-based framework, State-led framework, or Social Partner-led frameworks. These criteria, along with the way in which they have been applied to European Countries in a European Commission study of restructuring practices European Commission, 2016) are outlined in Table 2.1, and discussed in more detail below. This classifies national frameworks as either market based, state-led, or social partner-led depending on a number of attributes.

Table 2.1 A classification of national frameworks

	Market-based framework	State-led framework	Social Partner-led framework
<i>Nature of the framework</i>	Business-driven	State-driven	Negotiation-driven
<i>Tools and measures beyond company level</i>	Voluntary structures, e.g. regional task forces	Tripartite dialogue (government, worker, and company representatives)	Formalised tripartite dialogue and regional and sectoral initiatives by social partners
<i>Typical measures for the anticipation of change</i>	Voluntary initiatives: regional, sectoral and company level.	As a basic function of public administration / authorities	Based on social partners initiatives
<i>Nature of employee involvement in management of change</i>	Formally, information but no real consultation	Formally, consultation and negotiation depending on strength and bargaining power	Negotiations
<i>Countries with tendency toward this framework</i>	UK, Luxembourg, Malta.	Belgium, France, Greece, Ireland, Italy, Spain.	Austria, Denmark, Finland, Germany, Netherlands, Sweden.

Source: Adapted from ETUC (2006) and European Commission (2016).

This table outlines various features of national frameworks. The main tools beyond company are perhaps illustrate the key differences in the institutional frameworks and institutional environments between these types of frameworks, from voluntary structures in the case of the business-driven framework through to more formalised (often legally binding) agreements in the case of negotiation-driven frameworks. In this respect it should be noted that the classification is a little crude as it does not reflect some of the finer, more recent, detail which may exist beneath such classification – one example is that in the UK there are formal city deal agreements between national government and Local Enterprise Partnerships operating sub-nationally.

Considering the information regarding the typical measures for the anticipation of change and also the nature of employee involvement in the management of change, there are significant differences between the classifications of the three frameworks. In this respect the stronger role of public authorities in the state-driven systems may suggest that they have a more dominant role in establishing and delivering regional resilience-related policy than in the other systems, this may lead to institutional environments and explicitly designed arrangements which reflect this, potentially to the detriment of other stakeholders. In negotiation driven frameworks the stronger role for

social partners in designing and delivering restructuring policy reflects that institutional arrangements and institutional environments are established within which a wider range of stakeholder involvement can be expected.

By contrast the relatively informal arrangements of the business-driven framework suggest that the institutional arrangements and environments in such systems is perhaps quite different to the other two systems in terms of the extent to which institutions work together. This last point would suggest that the study would benefit from including as case studies regions which have established structures in place that have operated over a long period of time – as such those which pre-date the great recession would be most useful. This would allow a longer-term perspective to be accounted for in the analysis of how definitions of regional resilience have become operationalised, and the extent to which understandings of regional resilience have changed.

The evidence presented above suggests that the classification of national frameworks as business-driven, state-driven, and negotiation-driven is useful in considering from which countries to draw regions for case studies. Denmark was chosen due to the fact that is a good example of a well-established negotiation-driven system. Whilst there are other countries that may offer a good example of this system, the significant history of the approach seems to suggest that this system may offer most interesting contrast with other institutional arrangements and institutional environments in Europe.

Southern Denmark is recognised through the OECD review of partnerships (2001) as having a well-established partnership which has strong collaborative and consultative features – as such it would offer a good case study within this system.

Understanding the extent to which various institutions operate in this offered useful contrast to other systems in Europe. In this respect the example of the UK provides an example of a large economy with a business-driven system, with the other countries identified under this system, Malta, and Luxembourg, consisting of fairly small economies which are dependent on particular industries. Reflecting the usefulness of an established partnership and a recognised functional economic area, the Tees Valley, in North East England, provided a useful case study given the fact that the partnership has been established for more than 20 years, with an economic and spatial plan which is agreed by local authorities, by contrast many other sub-national partnerships in the UK are newly formed Local Enterprise Partnerships with new arrangements and plans which were more recently established.

2.6 Summary

The literature review discussed the process of adaption in regional development and discusses the way in which academic research has conceptualised ideas of adaption and adaptive capacity. It identified that adaption is most commonly understood as a path dependent process through which existing development paths are maintained. By contrast, adaptability refers to the ability of a regional economy to change and develop new development paths. The nature of these two concepts and the potential trade-offs and complementarities between are important aspects of the way in which academic researchers have defined and operationalised regional resilience in research.

The chapter then discussed the various ways in which academic researchers have defined regional resilience in equilibrist and evolutionary ways. Through this discussion various elements are identified, with contrast drawn between different definitions of regional resilience, to help outline a framework which can be used to identify policy and practice that is consistent with different notions of regional resilience.

The chapter then considers the way in which academic researchers have identified regional policy as being set within an increasingly multi-scalar framework, involving an increasing degree of vertical and horizontal integration. Set within this context, the role of national framework conditions potentially plays a key role in shaping approaches to regional resilience. The discussion identifies contrasting national frameworks in the UK and Denmark as potentially useful to explore this proposition.

The analytical framework established in this literature review then also takes on board these discussions and incorporates consideration of the way in which different definitions of regional resilience understand the varied role for different types of stakeholders within the process of anticipation and management of economic change. The framework also considers the ways in which various definition of regional resilience privilege specific policy outcomes, this aspect is useful given the relatively low level of use of the term regional resilience in published policy documents.

The next chapter of this thesis outlines the methodology to undertake research using the analytical framework developed to answer the specific research questions for this thesis.

3 Methodology

3.1 Introduction

This chapter outlines the approach to addressing the issues discussed in the literature review through a methodology which employs the analytical framework established in the literature review to answer three distinct research questions:

1. *To what extent does the focus of national labour market policies and practices related to anticipation and management of economic restructuring reflect existing definitions of regional resilience?*
2. *To what extent do regional policy makers understand, anticipate and respond to economic restructuring in ways that reflect existing understandings of regional resilience?*
3. *To what extent do regional institutional arrangements and institutional environments influence policy approaches to economic restructuring at regional level? How does this relate to existing definitions of regional resilience?*

The chapter outlines the method used to undertake desk research to answer the first research question which involved identification of policies and practices related to established academic understandings of regional resilience to compare key aspects of these policies and to try and bridge the gap between established policy and academic definitions. The chapter then outlines the approach and specific techniques used to undertake case study analysis to answer research question two and three. The way in which this research is undertaken shares aspects of the critical realist research approach to analyse the way in which the process of policy formation operates in two different regional contexts, Tees Valley in the UK and Southern Denmark. These two case studies were selected due to their distinct institutional contexts in order to explore in what ways institutional arrangements and institutional environments operate to operationalise regional resilience policy and practice.

This chapter has the following structure: Section 3.2 discusses the epistemological, ontological and theoretical positioning of the research, outlining the way in which specific applications of critical realism and realist evaluation provide an appropriate approach for this research. Section 3.3 then details the specific research methods and the individual research tasks undertaken to conduct the research and the analysis of findings. Section 3.4 discusses the selection of case studies based on theory driven

criteria, empirical evidence, and additional pragmatic reasoning. Section 3.5 provides a chapter summary.

The methodology presented in this section was approved through Coventry University Ethics, the Ethics Certificates are included at the front of this document.

3.2 Ontological and Epistemological positioning

The question of the ontological and epistemological positioning of the research is important because it influences the selection of appropriate research methods and analytical techniques. Ontology concerns the nature of reality, or what one believes to exist, epistemology relates to the way in which one believes this can be examined or known. There is a broad academic literature examining ontologies and epistemologies. This literature distinguishes various ontological and epistemological positions (for example through comparison of positions such as subjectivism vs. objectivism; positivist vs. social constructionist; empiricist vs. interpretive), indeed there are many different sub-divisions between the main ontological and epistemological positions. Given the multitude of different approaches the discussion below is limited to the consideration of positivist, subjectivist, and critical realist approaches; each offers significantly distinct approaches often resulting in the selection of different research methodologies and deployment of particular analytical techniques. Furthermore, these distinct positions require consideration as they have been used in previous research with similar themes.

3.2.1 A complex system approach

Positivist or objectivist or approaches commit to an empiricist ontology which broadly asserts that there are a series of observable facts which can be identified, with the nature of knowledge being such that things that cannot be confirmed through observation are not considered to be real or legitimate (Pratt, 1995, Sayer, 2010, Von Wright 1971). As such what is known, and what constitutes knowledge, is empirically observable. From an epistemological perspective such approaches assert that research should be scientifically deterministic in the sense that researchers should seek to identify causal properties of specific phenomena, research should therefore be mechanistic in the sense that hypotheses are developed with specific research methods subsequently applied to prove or disprove such propositions. Acceptable knowledge usually consists of that which can be quantified and correlated through

establishing significant relationships, typically through statistical analysis (Boylan, 2007, Von Wright 1971).

In the context of regional resilience, such approaches have been widely deployed to determine the degree to which regions are understood to be most or least resilient. Such analyses have been primarily based on equilibrist notions of regional resilience, using employment or growth indicators as dependent variables, undertaking quantitative analysis to determine which factors have greatest explanatory power in understanding resilience outcomes. In such studies the relative importance of various hypotheses regarding drivers of resilience are established and tested. A significant body of such research emerged following the great recession in order to understand relative regional resilience, for example: Brakman et al., 2015; Crescenzi, et al., 2016; Cuadrado-Roura et al., 2016; Davies, 2011; Doran & Fingleton, 2015; Martin et al., 2016; Sensier et al., 2016;

Positivist approaches in relation to regional resilience have the ability to yield interesting results – indeed the analyses referenced above have operationalised the equilibrist concept of regional resilience and have also been used in related analysis of specific plant closures (For example Braidford et al., 2012, Bailey et al., 2008, Elliason & Storrie, 2006). What these analyses do not seek to develop, however, is a deeper understanding of the potentially varied perspectives of regional resilience and understandings of what type of outcomes deliver greater / lesser degrees of resilience. Indeed, this reflects a specific criticism of positivist approaches in that they can be reductionist in their treatment of the subjects of research, failing to capture the impact of and significance of individuals and institutions and their complex influence on others (Sayer, 2007).

In summary, in the context of this research it would be problematic to develop an epistemological approach which adhered to a positivist ontology seeking to establish *observable* fact. Indeed, in this respect the literature review demonstrated the policy making environment related to regional resilience is characterised by context-specific and complex social relationships, impacted by structure and environment. Bristow & Healy (2014) developed the idea of individual and collective agency in the understanding and measurement of regional resilience, embracing a wide range of actors based on the assertion that a wide range of behaviours interact often with uncertain or unpredictable outcomes. Purely positivist approaches potentially undervalue the importance of such contextual factors where they cannot be expressed

in summative terms, preventing important treatment of this important consideration (for this research) of power structures and power relations (Edwards et al., 2014, Sayer, 2007).

More fundamentally, the tendency of positivist approaches toward establishing universal rules is not consistent with the research questions in this study. Whilst the research is using existing academic definitions of regional resilience, it is not suggested that testing and refining such definitions will result in a definition of regional resilience which applies to all other regions – nor even to all regions which share common characteristics with those included in this study. The research is exploratory in nature as it is not seeking to test or refine hypotheses suggesting that there are a set of optimum institutional arrangements or an institutional environment which should be privileged above others. In this respect the research is consistent with previous studies in the field of regional studies which assert that place-based solutions are preferable to arrangements that are imposed on areas (discussed in the literature review). Indeed, as the research is exploratory, in this respect the a priori formulation of various hypotheses may prove to be misleading as research tools become tailored to address specific hypotheses which may or may not cover the most relevant issues.

3.2.2 Critical realism

This research is consistent with the principles of the critical realist ontology. Critical realism asserts that ‘a world exists independently of people’s perceptions, language, or imagination. It also recognises that part of that world consists of subjective interpretations which influence the ways in which it is perceived and experienced’ (Edwards et al., 2014: 29). Critical realism emerged in the 1970s and 1980s through the work of Roy Bhaskar, and was further developed by Sayer (1992), Collier (1994), and Lawson (1997) of specific relevance for this research, the critical realist approach stresses the value in research of the distinction between ontology and epistemology. Indeed Bhaskar (1978: 56) criticised positivism for what he termed an ‘epistemic fallacy’, which he stated limited reality to that which can be empirically known through scientific experiment and testing.

Importantly, critical realism asserts the position that theory can help to move research and research findings nearer to reality through assisting with the identification and interrogation of causal mechanisms which drive social phenomena and processes. This is important in the context of this research because the research questions require engagement in both theoretical propositions and empirical evidence to provide

explanation (understanding definitions of regional resilience) and causal analysis (the role of institutions in explaining operationalised policy and practice).

Bhaskar (1978: 56) outlines that in critical realist ontology there are three different levels of knowledge. Firstly, an empirical level – the level of events as we experience them and at which they can easily be measured. This level is subject to a filter of human experience and interpretation in terms of language and concepts which are relative and changeable. In the context of this research this will include specific data related to regional resilience, that which can be empirically observed and measured. Secondly, the actual level – the level at which events occur whether they are experienced or observed, this level does not involve the filter of human experience. For this research, this level consists of factual information which may be different from what which can be demonstrated or observed at the empirical level. Thirdly, the real level – at this level causal structures or causal mechanisms exist. These are the inherent properties in any structure which produce particular events. For this research, the real level consists of the functioning of institutional arrangements and the institutional environment.

Importantly it is crucial that analysis which is consistent with critical realist ontology is cognisant of the interaction between these different levels of knowledge. As Bhaskar (1979: 49) states: social structures are in fact activity-dependent, causal mechanisms 'exist only in virtue of the activities they govern and cannot be empirically independently of them' This means that human actions and ideas are generated by these mechanisms, making these phenomena relevant for scientific investigation (Fletcher, 2017). The relevance and importance for this research is that it is concerned with the concept of regional resilience and the way in which it is mobilised in policy through social structures. It is therefore a useful way of approaching consideration the inherent properties of social structures (defined in this research as the institutional arrangements and the institutional environment) and consider how these properties enable or constrain operationalisation of notions of regional resilience.

The issue of causation noted above is of particular interest to this study, indeed realism rejects the notion that regularities among sequences of events determines causation (Sayer 1990: 14), rejecting the notion of *post hoc ergo propter hoc* (after it, therefore, because of it) or as Sayer notes - what causes something to happen has nothing to do with the number of times we have observed it happening. Explanation depends instead

on a more deeply contextualised understanding, developed in this thesis through case studies of particular regions.

As noted above, the critical realist ontology asserts that our knowledge of reality is placed within the material world, but in an imperfect and dynamic way (Pratt, 1995; Sayer, 2010) which negates the applicability of universal laws. The approach taken in this research is to determine what works in which context, and how. As such the approach rejects concepts of a single truth and/or reality (Tashakorri & Teddlie 2003) but rather seeks to understand perspectives through an evaluative process.

In this respect there is consistency with the ideas of Pawson and Tilley (1997) who apply a critical realist approach to evaluation of public policy. They assert the importance of the use of theory, applied to different contexts as an effective way of using a common framework within a realist approach to investigate linkages and relative strength of various causal mechanisms. In relation to this study this approach is relevant and useful because it applies the principles of critical realism and allows that different institutional arrangements and institutional environments can be considered.

Furthermore, consideration of the multi-scalar nature of regional policy (discussed in Chapter 2), and the way in which this plays out in different contexts is also consistent with this approach, allowing for the fact that there are varied levels of interaction in public policy (spatial and hierarchical) which potentially results in varied levels of relevant evidence and hence different degrees of relevance to real explanation. Operationally this allows that the investigation of different contexts can take place in an uneven spatial and thematic coverage, providing that the research remains consistent with the overall issues of regional resilience and the specific institutional arrangements and institutional environments.

Compared to positivism and interpretivist approaches, critical realism endorses, or is compatible with, a relatively wide range of research methods, but it implies that the particular choices should depend on the nature of the object of study and what one wants to learn about it (Sayer, 2010). This is considered in the next section.

3.3 Use of case studies and method of selection

The discussion regarding the ontological and epistemological issues for this research in the previous section highlighted the importance of designing appropriate research tools which capture complexity and reflect differences in context. Prior to this, several other issues were highlighted in the literature review which suggest that an appropriate way

in which to conduct this study would be through case studies which reflect different institutional environments and institutional arrangements. This section briefly recaps the salient points which support this approach before going on to discuss an appropriate approach to conducting case studies, considering the advantages and disadvantages of the approach in the context of this research, and the implications for the methodology.

The literature review identified the significance of institutions in management of economic change, particularly in design and delivery of approaches to anticipation and management of economic restructuring. The literature review also identified some important empirical considerations which influence the research questions and the methodology. Firstly, the change in economic output and employment levels in which regions of Europe showed significant variation in the extent of the impact and rate of recovery between regions. Secondly, there were a range of policy responses developed as a result of the great recession, these have been established within established national development models and the extent to which there was an explicit regional dimension to such actions varied across Europe.

The literature review also outlined that the wider context of discussion among policy makers and academic researchers regarding the importance of place-based and place-neutral approaches is also important (Barca et al, 2012). This debate has been characterised by an overwhelming consensus that place-based considerations must be considered in analysing the underlying processes in economic change and in the design of effective policy making (for example, Barca, 2009, Commission of the European Communities, 2009; Hildreth & Bailey, 2014; Krugman, 1997; McCann, 2011; Rodríguez-Pose & Gil, 2005). The study therefore requires a research method, or a set of research methods, which capture the place-specific complexity of varied institutional frameworks and institutional environments and the way in which they impact on the policy making process. It is such considerations which make case studies the most appropriate approach

It is first important to consider what exactly is meant by the term *case study* and what specific type of case study is relevant to the research questions. A case study can be defined as an in-depth study of a single unit typically with the aim of extracting wider meaning or application to a larger section of similar units (Gerring, 2004). This provides a basic description capturing the fact that an in-depth analysis is required to understand the character of the particular social systems (institutional arrangements

and institutional environments) that function to operationalise, potentially varied, understandings of regional resilience. Furthermore, as is discussed in the literature, there are varied institutional arrangements and institutional environments established in Europe.

In relation to the study of social systems in specific contexts, Gilham (2010) identifies an important issue, specifying that in social science, the case study relates to human activity that can only be studied or understood in context and that the object of study can often merge with its context, resulting in a difficulty in drawing precise boundaries. In the context of this research this is important given that the concept of regional resilience remains contested. This highlights the importance of preparatory analysis, relating the concept of regional resilience to particular context (discussed in more detail in the sections on document review and institutional mapping).

3.3.1 The role of case studies

The research questions for this thesis require engagement in both theoretical propositions and empirical evidence to provide explanation (exploring policy maker understandings of regional resilience) and causal analysis (the role of institutions in explaining operationalised policy and practice). Exploring such highly context contingent factors is most useful through comparison of more than one region. As Bryman states, 'social, economic, and spatial phenomenon can be better understood when they are compared in relation to two or more meaningfully contrasting cases or situations' (Bryman, 2008: 58).

Furthermore, as Yin (2009) notes, case study approaches become more relevant when research seeks to understand social phenomena and to compare specific contexts. In the case of this research the literature review discussed the fact that previous research (Amin, 1999, Rodrik, 2004) has identified that context and institutions are important due to the fact that specific soft institutions and institutional environments directly influence policy outcomes.

Fundamentally institutions (both institutional environments and institutional arrangements) are social constructs which are the product of particular economic and social history (Amin, 1999). In the context of this research this is an important consideration due to the fact that the thesis seeks to understand the way in which institutions operate to establish regional resilience policy and practice. This necessitates exploration of particular contexts to establish the degree to which differences in social, economic, and spatial phenomena are significant in establishing

particular policy and practice. This is particularly important when research engages with contested concepts, such as regional resilience. In this respect, Yeung & Liu, (2006) contend that exploration of specific empirical examples is particularly useful in conceptual development.

Further considerations for the case studies are identified by Edwards et al (2014). In discussing the operationalisation of critical realist ontology in the study of organisations they identify two useful considerations. Firstly, the extent to which the research is intensive, focussed on generative mechanisms, or extensive, examining the context within which cases operate. Secondly, considering the degree to which the researcher is detached from the research or is rather seeking to facilitate some form of change through intervention in the research process.

Regarding the second consideration, this research is not seeking to facilitate direct change in the institutional arrangements and the relationships between different institutions that are subject of the research. This would not be a realistic ambition for a single researcher, given the multitude of organisations and the wide range of representative groups involved in the policy making process. This research is exploratory in nature rather than seeking to test specific hypotheses. In one sense then the research can be understood to be detached from the policy making process. However, the research is not considered to be wholly detached in the sense that it will interact with various organisations to interrogate the views that they have and to test evidence gathered, this is important in establishing the characteristics of what Edwards et al., (2014) term 'generative mechanisms' (in the context of this research, this term is closely related to institutional environments and institutional arrangements).

The first consideration identified by Edwards et al, (2014) is interesting because the role of context is clearly important for the research, particularly in respect of the prevailing particular institutional arrangements and institutional environments. The authors outline that case study research that is considered extensive is mainly concerned with understanding historical causality, or else involves significant analysis of survey or census data. The appropriateness of using surveys in the research is discussed in more detail in the methodology section in relation to the rationale for conducting stakeholder interviews, however the depth of information generated from such a source is not likely to provide information sufficiently focussed on the specific research questions for this study as they relate to the themes of regional resilience and institutions.

The potential of case study research to be extensive in examining the wider context of specific cases is not, however, unrelated to this research. Indeed, through this method it would be possible to undertake historical analysis which may be interesting in understanding the role of path dependency in the process of adaption and adaptability (a concept discussed previously in the literature review). However, such an approach would require greater time and resource to engage with a greater volume of documentary evidence, historical data, and, potentially, greater numbers of additional interviewees. This would likely limit the number of case studies that could be included in the research to a single case and would not provide the possibility to compare regions and different institutional arrangements and environments.

A further consideration for this research is the fact that the research questions require examination of contemporary events, in the form of current understandings of, for example, regional resilience in particular contexts, reflection on recent events in the form of particular closures, the impact of such events on previous understandings of regional resilience, and, the policy making process as regards institutional arrangements and institutional environments. Such examination necessitates interviews with individual stakeholders involved in regional policy making but also includes other sources of information. It is only through a case study approach that a full variety of evidence can be incorporated into such analysis (Yin, 2009: 10).

For the purposes of understanding uneven development there is a rich tradition of using case studies to contextualise and provide greater depth to analysis than is available through positivist quantitative approaches which seek to determine drivers of uneven development (some examples with specific relevance to regional resilience include: Bailey & Berkley, 2014, Bristow & Healey, 2015, Cellinil & Torrisi, 2014, Dawley et al., 2015, Đokic et al. 2016, Lagravinese, 2015, Rutherford & Holmes, 2014). This demonstrates the usefulness of the approach in the discipline and also demonstrates that a mixed method approach which combines available quantitative data with qualitatively derived understandings is useful in understanding issues related to regional resilience.

There are of course limitations and risks in employing a case study approach. The extent to which data gathered can be analysed and compared between cases requires consideration (this is discussed in Section 3.2.3 on triangulation). In this respect cross-case analysis is transparent in presentation of data sources and in the discussion of findings.

The literature review discussed the nature of the policy making process as a social phenomenon, the specificities of which are heavily influenced by institutions, themselves both a product of, and influencers of, economic and social processes. As a result, the economic and social contexts are important – establishing to what extent these conditions vary between case studies. This research, therefore, favours the detached, intensive case study approach. This approach is the most appropriate for the proposed research questions. However, the case studies themselves are a mechanism within which a number of other research methods and analytical techniques are used.

Case studies will play a role in answering each of the research questions, most significantly research questions two and three:

- To answer research question 1, the main source is document analysis, however, the analysis of established policies and practices relating to restructuring in specific case study regions also helped to verify some of the document review undertaken for research question 1.
- The answer to question 2 is informed through document analysis and analysis of secondary data to understand the regional context to answer the questions of how stakeholders define regional resilience, and who develops and delivers regional resilience policy. Literature review analysis and analysis of secondary quantitative data is also used to understand interview findings and understand key issues from the perspective of different stakeholders.
- Lastly, question 3 uses information from all of the case studies and other evidence gathered to address research question 1 and address the question of the role of institutional arrangements and the institutional environment in developing regional resilience related policy.

As outlined above there are a range of data and methods involved in this research. The way in which these methods are operationalised is discussed below in section 3.3.3. The section below outlines considerations relating to how the evidence is combined through a process of triangulation.

3.3.2 Case study selection

This section briefly outlines the particular case studies for this research, the rationale for case study select is discussed detail in Section 2.5. In summary the two case study regions are expected to provide somewhat contrasting institutional set-ups, offer examples of well-established regional partnerships, and have each undergone

significant economic change over the past decade or more as they have transitioned from a reliance on dominant sectors. The two case studies are outlined in brief below.

Case Study 1: Tees Valley, UK

Tees Valley is located in the North East of England. The area has a strong industrial heritage and maintains a higher share of manufacturing than the UK average. The region faces significant challenges of educational attainment levels that are lower than national average, employer reported skills gaps and low economic output per head. Despite these challenges recent years have seen employment growth in digital, healthcare, logistics and automotive industries (Tees Valley Unlimited, 2016 p.8).

The institutional environment within which policy making takes place in the UK is characterised by an informal policy formation process. The general approach in the UK is distinct to that commonly found in continental Europe, within the UK policy 'dialogue' at least at national level is generally taken to mean 'consultation' with no formal tripartite (worker representative, business representative, and government) structures in place for the determination of policy. At regional level there is more discussion of policy approaches but no legally defined roles for certain stakeholders.

Among the general economic contraction of the great recession there were continued efforts to keep the steel works open in the Tees Valley. Despite this the SSI steel works closed in Tees Valley in 2015 leading to the loss of 2,000 employees. This closure ended 100 years of steel making in the region and followed significant efforts over a number of years among local economic development policy makers to secure investment to keep the plant open. Following this a taskforce was set up to provide assistance to affected workers, local businesses, communities, and the wider economy by delivering a programme of tailored support.

Case Study 2: Southern Denmark

The region of Southern Denmark borders Germany and as such is the gateway to Europe for Danish exports. The region has a strong tradition of employment in shipbuilding, with the first shipyard opened around 100 years ago. Compared with the national averages, the region has lower than average educational attainment, higher than average unemployment, and lower than average economic output.

The institutional environment in Denmark is characterised by a far more formal and consensus-based policy formation environment than is found in other European countries. This approach to co-developing economic and social policy (the tripartite

approach) through social dialogue has a long tradition and is formally designed and implemented much economic and social policy at national and regional level.

During the great recession, the Odense Shipyard closed due to reduction in secured revenue which rendered the business unable to continue operating. This 2010 closure led to the loss of 4,000 employees and necessitated the formation of a formal coalition of social partners in a taskforce to provide assistance to dismissed workers.

3.4 Research methodology and specific methods

This section discusses the research methods involved in the case studies and the way in which these methods were used to form a coherent research methodology. The section outlines the rationale for particular research methods and details the evidence collected through these methods. In so doing some of the practical and analytical issues encountered are discussed. The section concludes through discussion of the way evidence was analysed and triangulated to answer the particular study questions.

3.4.1 The research process and research methods

Figure 3.1 overleaf demonstrates how various research methods were used to build the evidence base and which task and research question they contributed to. This illustrates the following research process and outputs:

Initial desk research was undertaken to produce draft research tools and consider the most effective ways of undertaking analysis. This resulted in refining of the research questions, establishing research tools for data analysis, literature review, and stakeholder interviews.

Upon completion of this task the more detailed review of literature and data was undertaken. The process, key search terms and way in which this will be analysed is outlined in the document review section (section 3.3.3). Analysis of secondary quantitative data was also undertaken alongside the literature review. The purpose of this was to understand the different economic and labour market conditions within case study regions. This is discussed in section 3.3.4 below. In addition, this analysis assisted in understanding the position of stakeholders in the region regarding their understandings and prioritisation of policy and practice related to regional resilience.

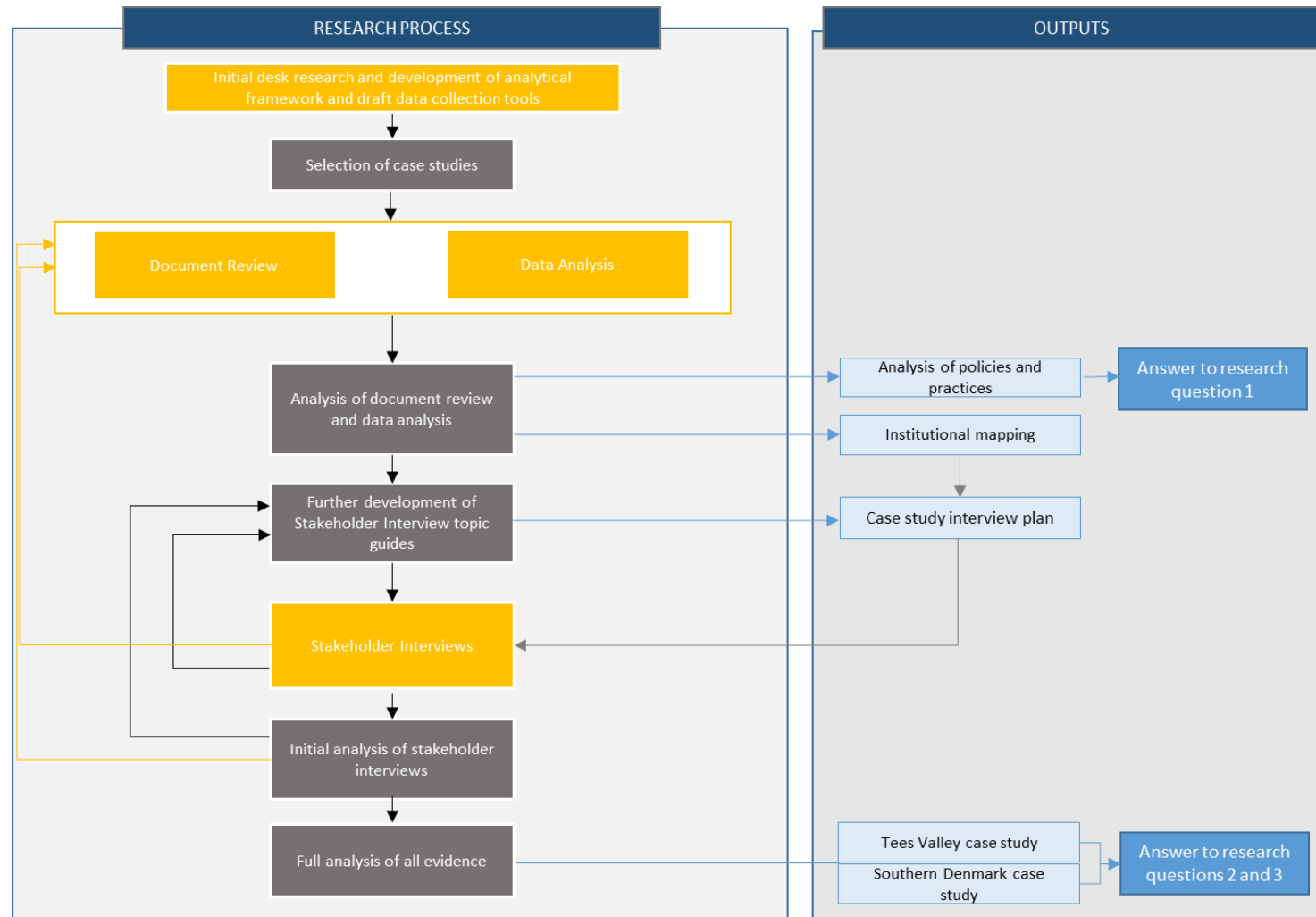
In addition, the document review, supplemented through understanding gained during the interviews provided a detailed picture of the relevant stakeholders in each case study region and will result in a prioritised list of stakeholders and a tailored topic

guide for semi-structured interviews. The interviews were then undertaken, section 3.3.5 outlines key considerations in this regard.

Figure 3.1 also shows that the process of undertaking individual stakeholder interviews, completed for case study regions, identified new issues for research for the document and data review and subsequent interviews. Additionally, as more in-depth analysis of case study interviews was undertaken new issues for research for the document and data review and subsequent interviews emerged. This iterative approach to developing additional issues for further research, was important in developing answers to the research questions (this is discussed in more detail in the discussion of the way individual tasks and analysis was undertaken in the remaining sub-sections of this chapter).

As shown in Figure 3.1, the research process concluded with analysis to develop and test the answers to the research questions – this process is specifically discussed in Section 3.4.5.

Figure 3.1 The research process, research methods and outputs



Source: Author

3.4.2 Document review

Two forms of document review are important for this research. Firstly, a review of documents which contain details of policies and practices related to regional resilience in Europe, and, secondly, documents which are relevant for case studies. The latter contain information on policy and practice but also evidence of the institutional arrangements and institutional environment in case study regions. Each of these two forms of document review are discussed in separate sub-sections below

As such, document review contributes to answering each of the three research questions in this thesis and takes place throughout the research as new information is identified, corroborating, and/or challenging emerging findings.

For both the review of policy and practice and the case studies, a systematic meta-analysis of the provenance of documents and their contents was undertaken to determine the reliability of the sources included in the analysis, and also to determine the status of these documents among regional stakeholders. A number of considerations were considered and recorded for documents:

- When was the document produced?
- Who are the authors of the document?
- For what purpose was the document produced?
- To what extent the document is accepted or contested by policy makers in the region (and if appropriate by relevant national and European stakeholders) – if applicable, what are the key contested issues?
- Is the document a stand-alone document or does it link to other analyses / policy documents?

These issues provided a first stage evaluation of sources prior to using them as part of the research. These considerations are important in evaluating the strength of the evidence gathered, considering whether the status of the document and how it can be used in analysis – considering the key issues involved in the triangulation of data (outlined in section 3.2.3). For both forms of literature review, the document review included a range of sources such as

- Strategic plans outlining structure, key stakeholders and agreed decision making mechanisms;
- Strategic statements of policy aims, objectives and specific priorities;

-
- Action plans detailing specific actions and activities to be implemented;
 - Reports into specific delivered actions, policies and or reports, including expenditure, activities, and outputs, and outcomes; and,
 - Processes reports, such as the activities of steering groups and easily measured outcomes such as attendance figures.

Document review of relevant policy and practice

The aim of this form of document review was to establish an understanding of how academic definitions of regional resilience compare with policy approaches in Europe. This was undertaken through assessing the information available on established policies and practices in relation to academic definitions of regional resilience. The analytical framework established through the literature review (and presented in Section 2.4, Figure 2.1) was used to set the boundaries for the literature review – both in the selection of keywords used to search for literature and to determine whether the identified literature was indeed relevant to the study.

The task involved a desk review to collect information on policies established in European countries and regions. The main academic definitions of regional resilience used in this task were the equilibrium (ecological and engineering) and evolutionary approaches. The review explored to what extent policy approaches to regional resilience can be considered consistent with academic definitions. The review arranged a range of policy areas such as: development of human capital; business and enterprise support; place development; and environmental / low carbon investment.

The information collected included examples of specific policies relating to resilience in anticipation of restructuring events; and examples of specific policies which relate to the management of restructuring events, with policies likely to target the following types of issues identified in the analytical framework established for this research (Figure 2.1):

- specific labour market measures (for example, training / retraining);
- business / enterprise and innovation support (for example, grants for relocation / loans / bailouts etc.); and,
- examples of specific physical development measures (for example, planning policy / land use strategies).

Information was found through internet searches using *Google Advanced Search* (the specific process and method followed is discussed in detail in Chapter 4) involving the following types of sources: academic papers; EU, national and regional government papers; policy papers, such as those produced by Think Tanks and EU Social Partners (business and worker representative bodies); evaluations of specific interventions; and, other data and information produced by other international organisations. Additionally, sources that contained multiple useful examples of policy and practice were also identified during the literature review, for example:

- European Commission evaluations and research reports, Communications: the EU Quality Framework for anticipation of Change and Restructuring, and project databases, such as the European Globalisation Adjustment Fund and the European Social Fund.
- Information from Eurofound: the European Monitoring Centre on Change: the restructuring events factsheets, restructuring support instruments factsheets, and restructuring related legislation factsheets.
- Research and policy analysis papers produced by Social Partners at different levels (in Europe, Nationally and regionally, and in specific sectors.
- Other sources, such as, the OECD evidence: papers from the OECD Committee for Industry, Innovation and Entrepreneurship and papers from the World Bank and World Economic Forum.

No single source contained all information needed for this analysis and not all sources provided all of the information that will be needed for comparing academic definitions of regional resilience with existing policies and practices. Nevertheless, this review gathered as much information as possible, employing key research terms, using Google Advanced search, to undertake web searching to locate other sources will also be useful. In this respect, the initial key search terms for this task, are outlined in Table 3.1 below.

Table 3.1 Search terms to identify relevant documents through web-search

<i>Search terms</i>	<i>Additional terms / conditions</i>
restructuring policy	AND specific <i>country names</i> - EU 28 <i>in UK</i> <i>in Ireland</i>
restructuring practice / practices	
restructuring support instruments	

anticipation of restructuring	<i>In Denmark</i> <i>in Tees Valley</i> <i>in Southern Denmark</i>	
management of restructuring		
active labour market policy	AND support for restructuring OR Redundancy OR job loss	AND <i>in UK</i> <i>in Ireland</i> <i>In Denmark</i> <i>in Tees Valley</i> <i>in Southern Denmark</i>
dismissed worker support		
redundancy support		
supply chain support		
social partners		
business support / bail-out		
land remediation	AND sector diversification OR economic reorientation	
sites and premises redevelopment	OR following closure / bankruptcy	

Source: Author

The mapping exercise used the examples of policies and practices gathered and compare them with academic definitions of regional resilience based on the overall aims and details of the particular measures that they involve.

As noted above, for information included in the literature review, some basic information for each source was gathered, including when the document was produced, who are the authors of the document, or what purpose was the document produced, Is the document accepted or contested by policy makers in the region (and if appropriate by relevant national and European stakeholders) – if applicable, what are the key contested issues, and is the document a stand-alone document or does it link to other analyses / policy documents? Table 3.2 (overleaf) provides the basic template that was used to collect information for each policy and practice.

Table 3.2 Framework to compare academic definitions of regional resilience with established policies and practices.

Specific information	Explanation of information being collected	Rationale for collecting the information
Policy / practice detail information		
1. Name of policy / practice (native name)	Name in EN. Name in native language in brackets	To distinguish between policies / practices
2. Country	Country / countries where the policy/practice is in operation	To distinguish between policies / practices
3. Geographical coverage (European / national / regional / sub-regional)	What territory does the policy apply to (Europe / national / regional / sub-regional)	Indicates scale / scope of European, national, regional policy makers to tailor RR policy / practices
4. Geography of implementation	At what level are details of delivery decided / can the policy take account of regional conditions	Indicates scale / scope of various RR policy / practices
5. When (a) established (b) amended	The approximate or actual date of the policy / practice being established	Background detail to assess comparability of information collected
6. Duration (permanent / temporary)	Is the policy / practice temporary or permanent	Detail on the character of various RR policy / practices
7. Broad classification of policy (business / people / place)	Area(s) of regional policy to which the policy practice relates	Indicates scope of RR policy
8. Target group(s)	Who the policy / practice is aimed at influencing	Indicates scope of RR policy
9. Involved actors – lead organisation	The organisation(s) with overall responsibility for establishing policy / practice rules	Indicates who key organisations are in design and delivery of RR policy and practice
10. Involved actors – delivery partners	To include the providers of services / implementers / enforcers	
11. Involved actors – other stakeholders	Other organisations - may be involved in policy oversight / steering group / key interest groups	
12. Funding sources - who is responsible	Further indication of which organisations are responsible for design of the policy	
Assessment of policy/practice compared to academic definitions of Regional Resilience		
13. What is provided?		

14. Intended outcomes for economy / labour market / physical environment	<p>These factors are used to assess consistency of regional resilience policies and practices in terms of Engineering resilience; Ecological resilience; and Evolutionary resilience.</p> <p>A full exploration of the factors contained in this assessment section is contained in Section 4.2</p>
15. Intended outcomes for beneficiaries: (business, individuals/groups of individuals, and places)	
16. When is this provided? (proactive / anticipation) (reactive / management)	
17. How long is it expected that outcomes will take to deliver?	

Source: Author

Document review in case study regions

Document review was also used to identify specific policies and practices in the case study regions, comparing them with other areas of Europe and also with the academic definitions of regional resilience. This provided an opportunity to identify similarities and differences between regions – relative to each other and other parts of Europe. This resulted in more detailed mapping of policies related to regional resilience in the case study regions than that taken in the previous task which relied on European and national sources.

The review at regional level targeted sources specific to the case study regions – either produced by the economic partnership in the region or produced by external organisations with their policies and practices as a focus (for example OECD or the European Commission). As such, the search terms for this task were the same as the previous task but also included specific region names.

A preliminary assessment of literature was undertaken to develop a deeper understanding of four particular aspects that were important for the case studies: the way in which regional resilience is understood and defined by stakeholders; the institutional arrangements in the region; the institutional environment in the region; and any evidence to suggest these factors have changed over time.

As outlined in Figure 3.1, this research exercise was ongoing throughout the study. Initially this was useful to position the case study regions within the context of the previously undertaken analysis of regional resilience policies and practices in Europe (described above); it then provided information that could be included in the analysis for research questions 2 and 3 (definitions of regional resilience and the role of institutional arrangements and institutional environments). Table 3.3 outlines how this initial review and the ongoing review were undertaken for the elements listed above:

Table 3.3 Issues included in the document review for case study regions

<i>Relevant element for research</i>	<i>Initial document review (prior to stakeholder interviews)</i>	<i>Ongoing document review (throughout the research process)</i>	<i>Format of information collection</i>
1. Definitions of regional resilience – the causal mechanisms which provides a rationale for	<ul style="list-style-type: none">• Examination of the operationalised policies and practices relating to regional resilience• Identification of the policy rationale and fit with various	<ul style="list-style-type: none">• Further examination of details regarding the rationale of various definitions of regional resilience that are outlined during the interviews by	This exercise was undertaken using factors included in Table 3.2 above and the analytical

specific policy and practice:	<p>definitions of regional resilience</p> <ul style="list-style-type: none"> • Identification of the evidence base for the policy rationale and way in which regional resilience appears to be approached. 	<p>different stakeholders.</p> <ul style="list-style-type: none"> • Further review of the policy rationale through documents identified during interviews. • Exploring the evidence base that they either cite or can be identified that is consistent with their viewpoint. 	framework developed for this thesis (Figure 2.1)
2. Varying contexts: the institutional arrangements and institutional environment (the issue of context in terms of socio-economic data will be considered through data analysis discussed in section 3.3.4)	<ul style="list-style-type: none"> • Identification of the institutional arrangements – including the key stakeholders involved in policy making at European, national, and regional level. • Identification of the decision-making process for policy related to regional resilience. 	<ul style="list-style-type: none"> • Information exemplifying issues identified in interviews - the extent to which institutional arrangements and the institutional environment impact on policy making in relation to regional resilience. • Examples of how context may support stakeholder views that other policy possibilities exist within this institutional framework. 	This informed stakeholder mapping and data analysis (discussed below). Stakeholder mapping was also revised and refined through interviews.
3. Resultant outcomes (the established policies and practices):	<ul style="list-style-type: none"> • Identification of specific operationalised policies and practices relating to regional resilience. • Identification of specific events (business closures) for which a policy response was organised – identifying what was done and whether this was different to mainstream provision. 	<ul style="list-style-type: none"> • Further examination of the way in which policies and practices operate in practice – e.g. through monitoring and evaluation information. 	This exercise also used Table 3.2 above and the analytical framework developed for this thesis (Figure 2.1)
4. Change perspective.	<ul style="list-style-type: none"> • Any evidence which suggests that the specific operationalised policies and practices relating to regional 	<ul style="list-style-type: none"> • Evidence which explains any changes in the policies and practices related to regional resilience. 	This exercise was examined for each case study region and refined through

	<p>resilience have changed over time.</p> <ul style="list-style-type: none"> • Evidence of specific policies and practices introduced during the great recession. • Evidence of any change in the rationale for policy changes – understandings of appropriate regional resilience policies and practices. 	<ul style="list-style-type: none"> • Any evidence identifying drivers / inhibitors of change to policy in the institutional arrangements and institutional environment 	<p>stakeholder interviews.</p>
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Source: Author

This table shows that the document review played in initial and ongoing support to address the study questions in a number of ways. Firstly, the output from the initial review developed an understanding of the extent the case study regions took approaches which are consistent with academic definitions of regional resilience and provided evidence regarding to what extent the policy approaches taken in other parts of Europe were similar with the case study regions, placing the case study regions within in a wider context. Secondly, the initial review supported the process of institutional mapping, a vital step taken prior to stakeholder interviews. Thirdly, the initial process of document review helped to develop the stakeholder interview topic guides through identifying specific issues for discussion, such as issues relating to institutions, specific policies and other regionally specific context which may be important.

Institutional Mapping

Institutional mapping is a process of identifying institutions and organisations involved in a particular issue (in this case regional governance and the development of policy and practice related to regional resilience). Institutional mapping involves identification of various institutions' roles. Through this process the research identified key stakeholders that were targeted for interview and developed an initial understanding of their relative power, influence, and interests in regional resilience related policy in the region.

Stakeholder mapping was important to ensure that the most relevant stakeholders were consulted in case study regions. Furthermore, the document review also provides evidence of the way that the organisational set-up functions in practice. This ensures that the most relevant issues can be discussed with stakeholders. This approach is consistent with that outlined by Aliglica (2006), who notes that institutional mapping can

be used to go beyond mapping organisations and to consider how power, influence and interests operate. In the context of this study, such an exercise provided a first understanding of the institutional arrangements and the institutional environment in the case study regions. Aliglica (2006: 80) suggests a number of criteria are important, these are outlined below with their relevance to this study.

- The identity of stakeholders – names of organisations and/or individuals
- Their relative power and influence – their power and influence within the policy area of regional economic development, and specifically to resilience-related policy in the specific case study region.
- Their particular interests – in relation to regional resilience policies and practices.
- Their role and actions in relation to specific issues – in relation to general resilience-related policy and also to specific restructuring events.
- The relative priority to the success of the project – a judgement as to how important the stakeholders are to the project (as a minimum it would be expected that worker representatives, business representatives, and government representatives should be interviewed, given the importance of each set of potentially diverse interests in the policy making process).

These issues are further developed by EPSON (2019) where the iterative process of institutional mapping is explored. The authors further note the value of institutional mapping in comparative studies and as a means of facilitating dialogue between territorial actors and researchers in discussion of stakeholder relationships. This aspect is particularly useful for this study as it enabled exploration of the extent to which the planned institutional influenced regional resilience policy and practice and what influence the institutional environment had.

This resulted in a diagram providing an understanding of the various stakeholders and their responsibilities in relation to regional resilience-related policy. This initial institutional mapping exercise was revisited during the case study field work to develop the understanding of the way in which the process works in practice and from different stakeholder perspectives. Understanding how the process works in practice was informed in two ways, firstly through the interviews to discuss general policy making in relation to regional resilience related policy and also discussion of specific restructuring events with stakeholders. Specifically asking whether the extent to which, from their

perspective the understanding of the policy making process developed through the institutional mapping exercise reflected their experience of the process. Secondly, through document review to illustrate or challenge the way in which institutional arrangements operate in practice through specific examples.

3.4.3 Secondary Data Analysis

The literature review clearly identified that the great recession had a varied impact on regions of Europe. Furthermore, there was significant diversity in the regional implications of actions taken by (predominantly national) governments in seeking to manage the impacts of the great recession. As such quantitative data is useful in order to set the scene and outline key differences and similarities between regions.

Furthermore, it is useful in that it can set the great experience of the great recession in the context of longer-term trends and potentially illustrate the rationale for the ways in which various stakeholders understand regional resilience and which policies and practices are important in this respect.

The rationale for the use of quantitative data in this study is therefore that it can add to the available evidence and help to illustrate two separate issues:

1. It provides the ability to understand differences in context between study regions – relative to the rest of the country and the rest of Europe, but also in terms of their sub-regional dynamics (the most relevant of which can be determined through document review and interviews).
2. It demonstrates the rationale for some of the, potentially divergent, notions of regional resilience, between regions and among the stakeholders within case study regions.

Analysis of secondary assisted in developing the description of the context within which each of the regions operates. This aspect is important for the research, for example the trends in labour market, sectoral and population demographics may act to shape understandings of regional resilience or may determine which specific approaches the regional stakeholders believe best support the economic and/or social outcomes that they wish to foster.

Given the fact that there are a wide range of socio-economic data available at regional level it is useful to obtain such data from a single source, where this is possible. Eurostat collect and publish relevant data regularly, using data from this source ensures that they are compliant with standardised definitions and are therefore

comparable, both in terms of the other case study regions and set within the wider context of other European regions.

The data analysis was undertaken for specific study regions alongside the document review. Interviews and further document review were undertaken throughout the study to uncover other relevant data for analysis. Outlined below is a description of how the initial secondary data desk research was undertaken.

The initial data review was also used alongside the document review to produce a case study plan for each of the case studies, with refined topic guides for the stakeholders to be interviewed, informed also through the institutional mapping exercise (discussed above). The data analysis will be included key contextual indicator information relating to each of the case study regions outlined in Table 3.4 below which will provide a detailed picture of the social and economic context, where possible data will be sourced from Eurostat¹ in order to maintain comparability between the case study regions.

Table 3.4 Contextual information relating to case study regions

Domain	Indicator
<i>Economic performance</i>	<ul style="list-style-type: none">• Regional GVA• Regional employment• Enterprise count• Details of major business closures and expansions.
<i>Sectoral profiles</i>	<ul style="list-style-type: none">• Regional sectoral demography• Identification of particular sectoral specialisms• Public sector employment by region (compared to national levels)• Private sector forms per 1,000 of population.
<i>Human Capital</i>	<ul style="list-style-type: none">• Regional educational attainment levels• Share of temporary and part-time employment• Regions with high population density / low population density• Unemployment and long-term unemployment data• Details of main areas of unemployment / worklessness concentrations
<i>Geographical</i>	<ul style="list-style-type: none">• Details of sub-regional travel to work areas• Share of territory by type: urban, rural, border, metro-regions etc.• EU regional classification of regions: Convergence, Competitiveness and Employment, and Territorial Cooperation region.

Source: Author

The table above includes data which cover the broad issues of human capital, business demography, and place-specific issues. This covers the broad areas of policy which

¹ One exception was the indicator 'major business closures and key details'. The details of these closures were obtained from a database published by Eurofound, which details closures and business expansions involving job change of more than 500 jobs.

inform regional economic development policy. The data analysis was undertaken in MS Excel to allow easy comparison for different regions and with European averages.

3.4.4 Stakeholder Interviews

The literature review demonstrated that both the institutional arrangements and institutional environments are important in the policy making process. There are no data sources which provide insight into these issues and how they influence policy related to regional resilience, it is therefore necessary to undertake consultation with relevant stakeholders in order to establish how these aspects influence resilience policy. In order to gather such data, the main options are to undertake a survey of stakeholders or undertake a series of interviews.

The approach to conducting interviews is somewhat consistent with realist evaluation approach of Pawson and Tilley (1997). Firstly, the causal mechanisms – in this case specific definitions of regional resilience, for it is such understandings of resilience which combine with other factors (for example, political, economic, power relations) to establish particular policies and practices. Secondly, varying context, as it is understood that regional policy is likely to be driven by the specific regional conditions and requirements. Such context includes socio-economic conditions and also institutional arrangements and institutional environments. Thirdly, resultant outcomes, in this case specific policies, the detail of which maybe complex and may differ in terms of theory of specific aims and actual operation in practice. Table 3.5 provides a higher-level overview for these issues when compared with the analytical framework presented in Section 2.4 of the literature review.

Table 3.5 Adapting theoretical concepts into issues and topics to include in interviews

Issue for interview	Examples / Relevance to the specific research topic of this study	Specific topics for discussion with stakeholders
<i>Causal mechanisms (drivers of restructuring and ways in which regional policy can address this)</i>	Stakeholders: definitions of regional resilience The rationale of various definitions of resilience.	The overall approach to regional resilience – how it is defined by particular organisations How this relates to the established policies and practices.
<i>Varying contexts (institutional aspects and</i>	The extent to which institutional arrangements and the institutional	The way in which institutional arrangements and institutional environments operate in theory and practice.

<i>specific regional strengths, weaknesses, opportunities and threats in relation to above understanding of causal mechanisms)</i>	environment impacts on policy making in relation to regional resilience. Policy possibilities – including availability of funding to implement specific resilience related policies.	The role and influence of national and European policy on formation and delivery of policy and practice in relation to regional resilience.
<i>Resultant outcomes (policies and practices established to address restructuring)</i>	Specific policies and practices relating to regional resilience.	The established policies and practices – how they operate in practice (and in relation to specific events) and how this related to the particular ways in which regional resilience is defined by various stakeholders.
<i>Information (factual information to build on document review and illustrate opinions)</i>	The interviews can be used to gather factual information ² . Follow up questions may also uncover additional evidence to support / challenge views provided at interview.	Particular evidence or specific examples of particular events which may explain the rationale, for example: <ul style="list-style-type: none"> • Views regarding definitions of regional resilience • Rationale for particular policies and practices
<i>Perspective (varying perspectives of a range of different types of stakeholders)</i>	The research is concerned with regional resilience and <ul style="list-style-type: none"> • The extent to which definitions and operationalised policy has changed over the course of the great recession. • Uncovering the drivers / inhibitors of such change(s). 	Extent to which views have changed as a result of the experience of particular events and experiences. Extent to which various drivers of change were responsible for this – to include external policy drivers, such as European / national policy priorities and funding.

Source: Author

An alternative approach to interviews which could have been used in this research was observational research which observes the policy making process over a long period of time using a set of specific criteria, or the use of surveys to gather the views of policy makers through responses to specific questions. The first of these methods would require a significant time and resource commitment which was not possible. It may have also resulted in few findings if there was little to actually observe during the

² Though the extent to which the interviewees provide completely new information that should have been discovered through desk research prior to interview should be minimised (discussed below in Task 1.2).

fieldwork, inevitably the interviews will involve some reflective questions for interviewees.

A survey of relevant stakeholders would have been inexpensive and would have the advantage of potentially expanding the number of stakeholders and potentially the number of case studies included in the research. This approach would however have sacrificed specificity in favour of generality. Woodside, (2010, p.62) notes that notes that 'accuracy (validity) comes first, not generality. The dominant logic in seeking generality by using surveys whereby informants write-out answers, tick boxes, and never have the opportunity to answer questions that they themselves frame fails to deliver accuracy' Surveys would therefore have resulted in far a less comprehensive and in-depth understanding in each case study due to the fact that the approach would not have allowed scope to ask follow-up questions to probe for a further information or clarify the meaning of responses provided. Furthermore, given the low level of explicit use in policy making of the term regional resilience it is important that the specific information is gathered from stakeholders.

Undertaking stakeholder interviews

The most appropriate way of undertaking interviews which cover the sorts of issues outlined above in Table 3.5 above was through a semi-structured interview to allow that key issues can be discussed with each interviewee (using a common set of interview questions to enable comparison) but also providing the opportunity for some follow up inquiry to gain more detailed explanation of answers and to develop specific examples where appropriate. The interviews were undertaken with key stakeholders involved in the policy making process in case study regions.

The interviews were semi-structured. This type of interview is more appropriate in the interview of senior, or elite, interviewees (Sabot, 1999; Schoenberger, 1991) as it provides the opportunity for interviewees to provide their opinions without feeling constrained by, for example, a closed question approach interview. It also allows that the order of questions may change depending on the flow of the interview and the answers previously provided. In conducting the interviews there were two important considerations, firstly, access to interviewees, and second, maximising the volume and quality of data gained.

In terms of access to relevant interviewees, it was important to consider power relations within the region when approaching interviewees. In this respect, stakeholders who appeared to be the most involved in resilience-related policy in the region were

prioritised, as their involvement may be most valuable to the research because of the insight that they could provide but also through their ability to identifying other interviewees which will be most useful to the research.

This research required interviews with senior policy makers or senior members of particular organisations – charged with either with policy development or delivery. As such these interviews could be classed as interviews with elites (rather than with service users / beneficiaries or members of the public). This requires particular planning, Mikecz (2012) notes that elite interviews can be difficult to obtain as the interviewees may have limited time and willingness to participate, given their unique position and the fact that there are limited opportunities to identify suitable replacement interviewees, the interviews are next to impossible to repeat or replicate. The interviews were therefore undertaken by telephone so that it was easier to schedule with interviewees.

Conducting interviews by telephone in this case was appropriate given the seniority of the stakeholders concerned, with the following considerations important:

- the research topic did not deal with any personally sensitive issues, whilst some issues may be considered politically sensitive, the individual interviewees are used to justifying their positions;
- most interviewees were individuals that are used to discussing the issues in this research with each other, as such their views are likely to be already known to each other and they are not uncomfortable providing opinions to a researcher;
- some interviewees were not based in the region, as such it would have been expensive and time consuming to travel to meet them;
- most of the interviewees were well used to giving interviews for research and policy evaluation purposes; and,
- as noted above, as senior stakeholders, the interviewees had limited available time, meaning, as discussed above, being flexible in scheduling these interviews and being able to react to changes in the interviewees' schedules was important.

Linked to these considerations, Sabot (2012), highlights the importance of showing sufficient deference to the interviewees and ensuring that the interviewee understands that their view is of value to the research. Conversely the issue of power imbalance

between researcher and interviewee is also understood to be an important consideration in terms of researcher positionality. Mikecz, (2012), highlights the importance of researchers stressing their own credentials relating to their experience, legitimising themselves and their research in the eyes of the interviewee. This is something which is useful in building rapport with the interviewee. In the context of this research, previous experience of the research topic and of undertaking research in these countries was used in order to illustrate credibility to potential interviewees.

Further considering the issue of positionality, Welch et al. (2002) note that researchers that are neutral outsiders but who have a good understanding of the perspective and conditions faced by insiders can deliver useful insight. In this sense, interviewees may perceive the interview as an interesting discussion. Indeed Sabot (1999), notes that the informed outsider can be a useful tool which serves to relax interviewees as they understand the interviewer to be no threat to their status and position.

These interviews demonstrated the way in which relevant stakeholders understand regional resilience in particular contexts. Comparison with academic definitions of regional resilience was undertaken at the case level and between types of stakeholders. Additionally, the interviews provided an understanding of the role and significance of institutional arrangements and institutional environments in operationalising notions of regional resilience in policy. The topic guide for these interviews is provided in Appendix 3, this was prepared through initial desk research and developed through undertaking interviews. The topic guide provided the basis for discussion, with some stakeholders providing more detail on certain aspects than others.

As illustrated in Figure 3.1, upon completion of the first interviews for each case study the topic guides were evaluated with small amendments made to clarify terminology used in the questions. The interviews also resulted in identification of issues that were raised in subsequent interviews and desk research.

Informed consent was gained prior to conducting the interviews through providing a description of the purpose of the research, topics to be discussed, and an outline of the way in which their answers would be used in the research. A key point summary was written immediately after completion of each interview, this included key findings in relation to each of the subheadings in the topic guide, highlighting issues that could be further examined, wither through desk research and/or in subsequent interviews. This

process served as an aide memoire for the purposes of following up specific action points requiring further research.

Secondly, the interviews were fully transcribed. The interview transcripts were coded and entered into NVivo to undertake analysis for each research question (the coding structure is contained in Appendix 3, along with the draft topic guide and a full list of interviewees.

3.4.5 Analysis and testing of research findings

Once research had been conducted for each case study, a process of initial review and synthesis for each of the research questions was undertaken. This process involved organisation of the evidence by research question to understand emerging findings and the extent to which further research in the form of document and data review or additional interviews was required. The following sections outline the process in more detail for each of the three research questions.

Review of evidence and synthesis of initial findings for RQ 1

This research task involved a review of the findings from the literature review in order to assess how complete the information gathered for various policies and practices was. It was accepted that there would be some gaps in the information available as this was dependent on what had been published, and how much information was available in English. However, it was useful to assess the scale of gaps in information available, whether these gaps could be filled, and to what extent this would inhibit the planned analysis. This initial assessment of evidence was important as it ensured that the proposed analysis and a robust answer to research question 1 could be developed which was the first output for the research.

Review of evidence and synthesis of initial findings for RQ 2 and 3

The case study evidence was gathered and organised in a manner that enabled the evidence gathered to contribute to answering the research questions, but which also enabled the case studies to be understood as discrete cases. The latter element was important in understanding whether a full picture of the approach and process for resilience policy development has been developed or if there are particular issues not explained.

As such the case studies were structured in a logical manner but also with an understanding that they will inform particular thematic chapters of the thesis. Table 3.6 below shows the key themes used to organise the evidence base for the case studies

in the first column, with a description of what each section contains in the middle column and the analytical contribution of this to the research the final column.

Table 3.6 Structure of case studies and analysis undertaken for research questions 2 and 3

Structure for case studies	Description of content	Analytical purpose
I. Introduction: the regional socio-economic context (additional information in Appendix 2)	Background on regional development and position of the region within national development context	Extent to which specific regional socio-economic context is taken into account in stakeholder views (definitions of regional resilience and policy making process).
II. The policy making process in the region	Consideration of the way that the policy making process works in theory and practice	Focus on the way in which different institutional arrangements and institutional environments operate in theory and practice. Analysis of the role of different stakeholders at different spatial levels in the policy making process.
III. Regional resilience: conceptual analysis and discussion.	Consideration of the ways in which key stakeholders define regional resilience. Analysis of the form of regional resilience operationalised in policy.	Identification and analysis of the key features of regional resilience operationalised in the region. Comparison of regional stakeholder perspectives of regional resilience. Comparison between regional approach and academic definitions of regional resilience.
IV. Conclusions: defining and operationalising regional resilience	Summary of findings from the case study, structured to provide input to research question 2 and 3.	Provide conclusions on the function and significance of institutional arrangements and institutional environment on established form of regional resilience. Provide input into thesis conclusions relating to policy maker perspectives of regional resilience. Implications for future research to contribute to thesis conclusions.

Source: Author

Following completion of draft case studies, a review of the evidence base for the case studies was undertaken to ensure that the case studies were internally coherent and contained presentation of robust evidence and analysis, from which logical conclusions had been developed.

Through this process it was also possible to identify and fill gaps in the evidence base which emerged. The primary purpose of this was to ensure that the case studies contained comparable information. Gap filling to improve the evidence base involved further desk research and information requests to interviewees.

Following improvements to the case studies, a comparative analysis of the case studies was undertaken in order to develop the answers to the study questions (primarily study questions 2 and 3). The first step in the process was to consider comparability of the following elements:

- Consideration of regional context. Consideration of the similarities and difference in the socio-economic context and the extent to which specific regional settings identified in the document review and by regional stakeholders in the interviews.
- A comparison of the policy maker perspective on regional resilience in the two case study regions, specifically the ways in which key stakeholders approach anticipation and management of economic change. It had been intended to test for similarity between similar stakeholders in different regions, however, the strong consensus between stakeholders in Southern Denmark meant that this did not provide meaningful findings.
- Comparison of established regional resilience policies and practices. In this respect the comparison of the ways in which major events were handled, which policies and practices were put in place and to what extent this related to established understandings of regional resilience.
- Consideration of the way in which policy maker understandings of resilience, and specific approaches to anticipation of economic change are shaped by both region-specific and external developments (endogenous and exogenous factors).
- A comparison of the institutional arrangements and the institutional environment in each region and an assessment based on the interviews and literature review to determine the extent to which this influences regional policy, and which features are most significant in this process.

The evidence base was organised by the themes identified above and analysis of case studies was undertaken through consideration of this evidence, ultimately this established the case study synthesis which is presented in Section 7 of this thesis.

Consistent with the principles of triangulation set out in Section 3.4.6, the assessment of the evidence base involved testing the evidence base to understand the degree of convergence, corroboration, or correspondence in the evidence gathered through the case studies.

3.4.6 The process and forms of triangulation

The approach for this research was to use a mixed method approach, combining interviews, data analysis, and document analysis to collect relevant data for case studies. An important element of the mixed method approach is triangulation.

Triangulation is a useful way to strengthen research findings through using multiple sources of data.

As noted above, the nature of the research questions being investigated in this research rendered a monomethod approach inappropriate, due to the fact that there are a wide range of potentially relevant qualitative and quantitative data relating to institutions and regional resilience-related policy. As such the concept of triangulation is crucial to help develop a more comprehensive evidence base and undertaking analysis. This involves examination of the available evidence for patterns of convergence, corroboration, or correspondence, fundamentally improving the validity and credibility of findings (Somekhand & Lewin, 2011). Tashakkori and Teddlie (1998) describe four types of triangulation which are useful to consider in relation to this research:

- Theory triangulation – using multiple theoretical propositions. In the case of this research, exploring definitions of regional resilience.
- Methodological triangulation – using a range of different research methods (for example, secondary data analysis, document review, and analysis of stakeholder interviews).
- Data source triangulation – through the use of multiple data sources (for example, secondary data, and documents outlining policy and practices; and stakeholder opinions).
- Investigator triangulation – involving the use of more than one researcher (not relevant this research).

In respect of these elements of triangulation, the evidence gathered through interview, document review and data review will be examined for issues of:

-
- Convergence – the extent to which evidence suggests that findings have converged among stakeholders or diverged over time. In the context of this research, exploring the extent to which stakeholder opinions have changed over time.
 - Corroboration - of views expressed relating to how planned and actual approaches to anticipation and management of change and/or how institutional arrangements function in practice
 - Correspondence – the extent to which there is similarity / difference between evidence from the case studies. In this research this may relate to stakeholder opinions and/or established policy and practice.

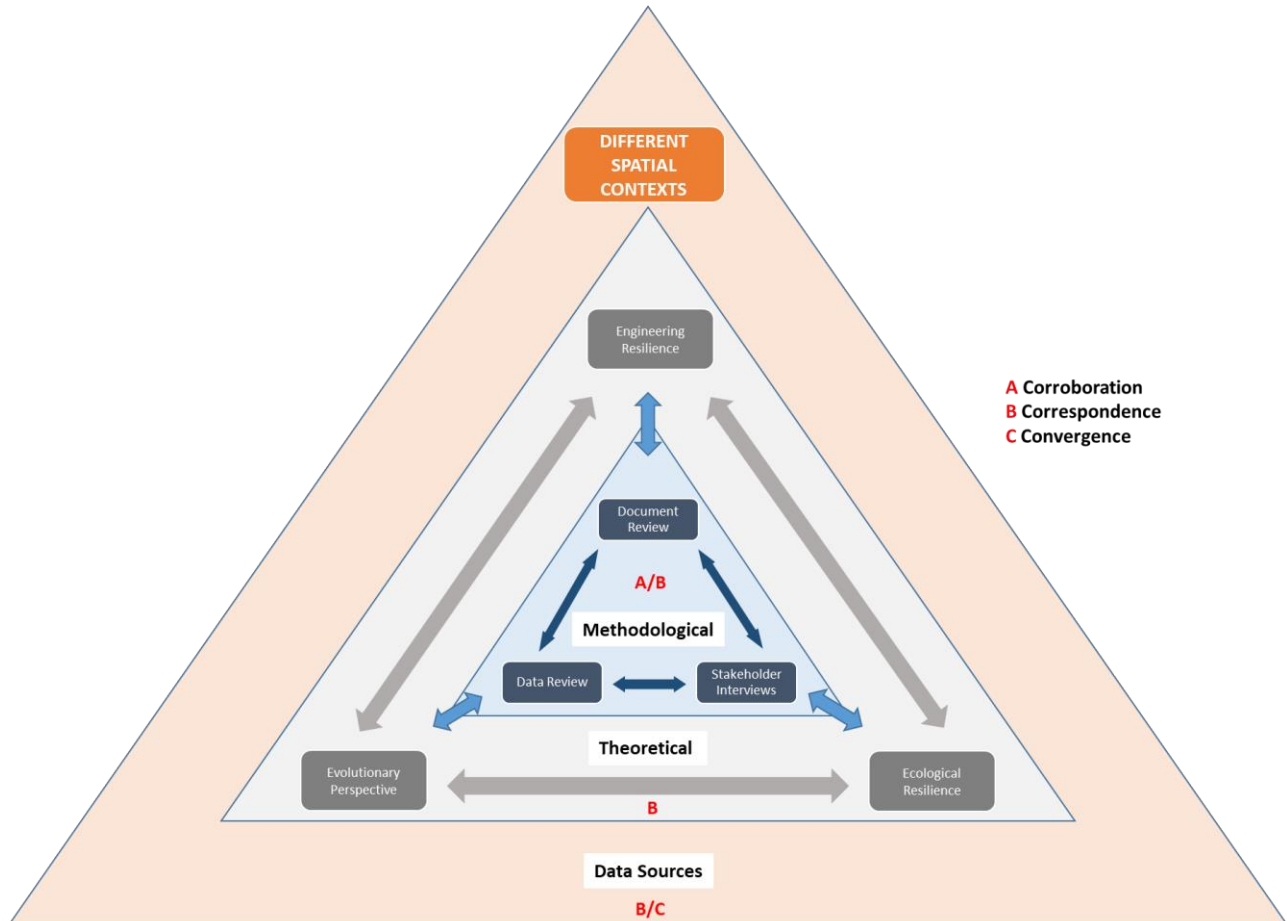
Figure 3.2 below illustrates how these types of triangulation and specific tests have been applied in this research. This illustrates that data triangulation, methodological, and theory triangulation have been a significant element of analysis in this research. More specifically, **methodological triangulation** has been undertaken using document review, data analysis, and stakeholder interviews in case study regions to capture and analyse relevant data and understand to what extent evidence is corroborative, indicating consistent findings.

This does not imply that all types of data provide evidence in relation to each research question. In order to understand how policy and practice compares with academic definitions of regional resilience information will be gathered through desk review, with quantitative data analysis unlikely to be useful. For the review of policies and practices in the case study regions interviews assume a more prominent role as a research method to answer the relevant research questions (two and three) with document and data sources also significant as part of triangulation to assess the extent to which a range of evidence provides convergence, corroboration, or correspondence. This approach adheres to a fundamental principle of case study research – the requirement to maintain a chain of evidence which tests rival explanations (Yin, 2009, p.3).

Theory triangulation underpins the research questions and the method through the fact that multiple theoretical definitions of the concept of regional resilience were considered. Central to research question one was the extent to which policy and practice corresponded to established definitions of regional resilience. As part of the case studies undertaken for research question 2 and 3, consideration of such definitions established the analytical framework which informed the key lines of enquiry for interviews, document analysis, and data collection and subsequent analysis.

Data source triangulation is also an important element for this study, this was done through selecting case studies with varied institutional arrangements and institutional environments.

Figure 3.2 Forms of triangulation for this study



Source: Author

3.5 Summary

The methodology presented in this section has been devised in order to address three specific research questions which require research to investigate nationally-devised labour market policy and then also engages in more detailed regional research to explore the content, motivation, and institutional forces which shape policy and practice related to regional resilience.

This chapter of the thesis has outlined the ontological and epistemological positioning of the research, demonstrating how positivist approaches have been deployed in previous academic research based on equilibrist notions of regional resilience, using

employment or growth indicators as dependent variables, undertaking quantitative analysis to determine which factors have greatest explanatory power in understanding resilience outcomes. This research, however, is more consistent with the principles of the critical realist ontology. The research uses theory applied to different contexts to investigate linkages and relative strength of various causal mechanisms (institutional arrangements and institutional environments) in contrasting case study contexts.

Within this approach the research uses document review, guided by the analytical framework established in the literature review, to analyse policy and practices and compare them with academic definitions of regional resilience. Case studies are then used to explore two regions, Tees Valley in the UK, and Southern Denmark, with a focus on the way in which institutional arrangements and institutional environments shape mobilised policy and practices related to regional resilience. Document review, stakeholder interviews, and secondary data analysis are used to undertake the case studies, with a process of synthesis and triangulation, guided by the analytical framework established in the literature review, used to produce conclusions, and identify implications for future research.

4 Regional resilience in policy and practice

4.1 Introduction

This chapter provides analysis and research findings which answer research question 1 (*To what extent does the focus of national labour market policies and practices related to anticipation and management of economic restructuring reflect existing definitions of regional resilience?*). This research question is addressed through research and analysis which compares policy and practice in the UK and Ireland with Nordic countries. The research investigates ways in which approaches to the phasing of resilience in labour market policy evolve through policy mapping to provide an initial view of cross-country differences, this is then investigated more fully through specific regional case studies in Chapters 5 and 6.

The literature review established that academic researchers have increasingly used the concept of regional resilience as a way of understanding uneven development, particularly as a means to investigate and explain the varied impact of the financial crisis and great recession. Despite increased usage there remains no settled definition of the term, with no systematic inquiry undertaken into the extent to which academic definitions of regional resilience are reflected in policy. This research question begins to address this gap through comparing established policies and practices relating to economic restructuring with academic definitions of regional resilience. Exploring these issues provides an opportunity to enrich understanding of regional resilience and illustrate how the concept can potentially be used in a more concrete way to undertake policy research and evaluation.

The literature review developed an analytical framework (presented in Section 2.4) which identified various features and dynamics of academic definitions of regional resilience, such as: firm-level considerations; regional innovation assets; learning and skills; and infrastructure and place development. Within each of these areas the framework identified the extent to which definitions of resilience varies in the importance and emphasis they assert for these factors and processes. Additionally, the literature review discussed, and the framework identified, the main agents of change and varied role for public policy in shaping outcomes within different notions of regional resilience.

This chapter focuses on a key element of focus for research and evaluation related to restructuring – that of labour market policy. The chapter provides a manageable focus

for the research so that it can consider elements of both anticipation and management of economic change in policy and practice. These distinct, but linked, elements were identified in the literature review as useful ways of understanding definitions of regional resilience and a potentially fruitful way of analysing restructuring policy and practice.

This chapter seeks to develop an understanding of the consistency between established policy and academic definitions of regional resilience through gathering information on common characteristics of national labour market policies and practices and comparing this with academic understandings of regional resilience. The analytical framework established in the literature review is used as the basis for analysis and as a means to draw conclusions from the findings.

In the analysis presented in this chapter countries with different national development models are used - the UK and Ireland and Nordic countries. This approach provides an understanding of the extent to which policy and practices related to regional resilience differs within contrasting national contexts, and provides some insight into how established approaches in these different contexts relate to academic definitions of regional resilience. Focussing on a limited number of countries limits the scope of enquiry to a manageable scale which allows sufficient depth, to consider multiple policies and practices, than would be the case if a larger number of countries were included in the analysis.

The findings from this research provide the foundation for the analysis undertaken in the subsequent two research questions of this thesis which are explored through regional case studies examining the importance of specific regional and institutional contexts in shaping labour market approaches to regional resilience.

This chapter is structured in the following way: Section 4.2 analyses labour market policies and practices relating to anticipation of change; Section 4.3 analyses labour market policies and practices relating to management of change; Section 4.4 discusses the overall findings from the analysis undertaken and provides an answer to the research question. It outlines conclusions from the research. This section also brings together lessons learned from both section 4.2 and 4.3, such as those related to the main agents of change and role for public policy.

4.2 Institutional context within which policy and practices are established

The literature review identified a general consensus among academic researchers that institutions play a significant role in policy making but that there had been little research considering their role and significance in regional resilience and to what extent institutional arrangements and institutional environments may account for the varied definitions of regional resilience that have been put forward. This section outlines relevant features of the institutional environment and institutional arrangements in the Tees Valley and Southern Denmark. Discussion of the institutional environment reflects on the historical development of the region and highlights potential legacy effects which impact on the policy making process and specific policies and practices which are discussed in the following section (Section 4.3).

This section also describes policy making structures and process in the Tees Valley related to regional economic development. In doing so the section demonstrates the way in which the distribution of powers and responsibilities and the multi-scalar nature of policy making has been established.

4.2.1 Institutional arrangements and environment in the UK

Regional Development Agencies (RDAs) were established in the UK in 1999 by the Labour Government that had been elected in 1997. RDAs were non-departmental public bodies, with a wide-ranging brief to drive economic development, business efficiency, investment and competitiveness, employment growth, skills improvement, and sustainable development in their regions. In England there were nine RDAs, the RDA for the North East was One NorthEast.

The principal duty on RDAs was to establish and continually review a 5 to 10-year Regional Economic Strategy (RES) (HMG, Regional Development Agencies Act, 1999, HMSO). These strategies were established to set out detailed plans of how the RDA and partners would pursue its various objectives. The RES was required to align with national economic development policy and to take account of Treasury economic forecasts but be developed in partnership with regional stakeholders, in the public, private and civil society sectors.

Within this process RDAs had significant autonomy for spending (when contrasted with mainstream local authority funding, and current LEP funding). Funding for RDAs was provided through a single resource pool, to which the Department for Communities and

Local Government; the Department for Business, Enterprise, and Regulatory Reform; the Department for Innovation, Universities and Skills; the Department for Food, Environment and Rural Affairs; the Department for Culture Media and Sport; and, UK Trade and Investment all contributed (England's Regional Development Agencies, National Archives 2011), as such a wide range of government agendas were invested in RESs.

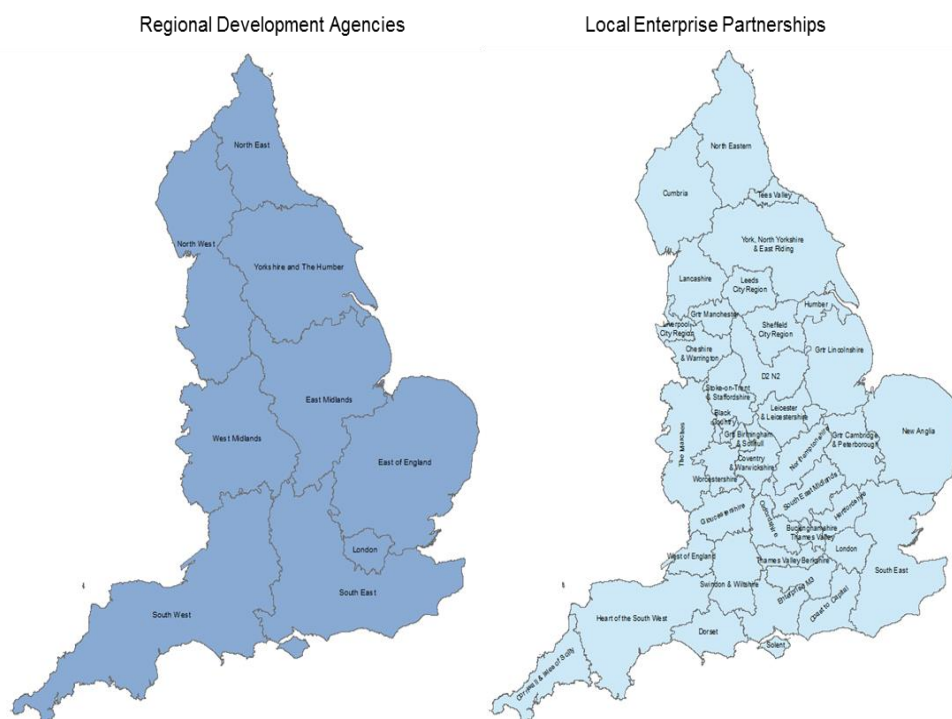
It was announced, following the establishment of a national Conservative Party and Liberal Democrat coalition government in 2010, that RDAs would be abolished, this was formally achieved in 2012. The legacy of this period of partnership working in the Tees Valley was significant (relevant aspects for this study are discussed in various parts of Chapter 5), with strong working relationships established and a good shared understanding among policy makers of the business demography and labour market strengths and weaknesses in the region. Within this shared understanding there were some divergent views regarding which policies and practices are most important to manage economic change and develop a more resilient economy.

Prior to these developments, the previous decade in UK Government had also seen significant change in the sub-national economic development infrastructure in England. A significant development during this period was the abolition of Regional Development Agencies and the introduction of Local Enterprise Partnerships in England. Regional Development Agencies were responsible for boosting; employment, employment skills, economic development and regeneration, business efficiency and competitiveness, and sustainable development.

The creation of 39 Local Enterprise Partnerships was announced as part of the Budget in June 2010, alongside the abolition of the nine RDAs in 2012. Since then there has been an increasing focus on 'localised' policy interventions in England to help spur economic growth. The rationale for the Government's new approach to local growth policy in England was based on the wide variations in economic structure and performance in England, shifting some power away from central government to LEPs (NAO, 2016).

Figure 4.1 illustrates the spatial change resulting from the establishment of LEPs during 2011 and 2012, compared to the RDAs.

Figure 4.1 *A comparison of Regional Development Agency and Local Enterprise Partnership boundaries*



Source: DCLG (2015)

The responsibilities of RDAs were not passed over wholesale to LEPs. The Government opted for a mixture of local and national provision to replace regional provision. LEPs will be given responsibility for supporting the delivery of part of the EU Structural and Investment Funds for 2014-2020. LEPs are not accountable formally constituted bodies: they are partnerships providing a strategic steer and oversight. Their roles are:

- alongside government, setting out key investment priorities through the preparation of Strategic Economic Plans for their area to help creating the conditions for private sector job growth in their communities;
- coordinating proposals or bidding directly to the Regional Growth Fund;
- contributing to the development of national planning policy and ensuring business is involved with strategic planning applications; and
- contributing to the management of resources from revolving funds such as the £730m Growing Places Fund to be spent on infrastructure, and also from Enterprise Zones retained business rates, City Deals and future resources from

the Department for Transport's Local Sustainable Transport Fund. (DCLG, 2016).

In addition to their responsibility and accountability arrangements with UK central Governments there is increasing engagement at European level. LEPs have responsibility for the development European Structural Investment Fund strategies – albeit under guidance from the UK government, with the overall strategic approach agreed between the UK government and the European Commission regarding the use of ESIF in the UK.

Additional funding and strategy that LEPs are charged with developing include the Local Growth Fund and City Deals which provide a mechanism through which LEPs are given the opportunity to negotiate for greater influence, flexibilities and decision-making power over centrally managed resources and national investments across a range of policy agendas (principally transport, skills and housing).

The literature review discusses the ways in which the 'institutional dimension' is understood in policy research and the ways in which it influences policy making. In this respect it is important to note the distinction between 'institutional arrangements' and the 'institutional environment' recognising a distinction between hard and soft institutions (Amin, 1999; Gertler, 2010; Rodriguez-Pose; 2013). In this respect hard institutions are traditionally seen as the key stakeholders within regional economic development, such as: the range of government organisations, business representatives, worker representatives, education providers, and civil society organisations. Hard institutions organise and operate within defined institutional arrangements. By contrast soft institutions, which include prevailing norms, traditions and social conventions, interpersonal contacts, relationships, and informal networks make up the institutional environment.

Two further aspects of the analysis of institutions are reflected in the literature review. Firstly, the multi-scalar nature of regional policy; and, secondly, the temporal nature of institutional arrangements and the institutional environment, reflecting that the study of institutions is not the study of a static concept, power relations may change over time. The arrangements described above illustrate the importance of the relationship between regional and national government, the influence of European policy, and the way in which the institutional arrangements governing the Tees Valley have changed even in a relatively short period of time.

Nationally the institutional environment within which policy making takes place in the UK is characterised by an informal policy formation process. The general approach in the UK is distinct to that commonly found in continental Europe, within the UK policy 'dialogue' at least at national level generally taken to mean 'consultation' with no formal tripartite (worker representative, business representative, and government) structures in place for the determination of policy. At regional level there is discussion of policy approaches (the process for the Tees Valley is described below in Section 6) but no legally defined roles for certain stakeholders.

4.2.2 Institutional environment and arrangements in Denmark

The section features of the institutional environment and institutional arrangements in Southern Denmark. These features impact the prevailing policy making process and the way in which stakeholders currently develop policy related to regional resilience, which are analysed in more detail in Chapter 6.

The literature review discussed the fact that the institutional environment within which policy making takes place in Denmark is more consensus driven when compared to other European countries. This environment is not a recent phenomenon, but rather is the result of a series of events, actions, and reactions which have resulted in a firmly established and distinctive institutional environment.

The historical development of this environment is frequently referenced to in the discussion of interview findings in the latter sections of this chapter (particularly sections 1.3 and 1.4). These developments are commonly understood by stakeholders in the region to have led to the established approach to policy development in general, and the specific policies and practices related to regional resilience. The main elements of this are outlined below:

- In September 1899, the so-called September Settlement ended a long period of strikes and lockouts in Denmark. The September Settlement is regarded as the constitution of the Danish labour market, with the basic principles frequently referred to in policy discourse. In the settlement the two sides agreed to recognise mutual rights - the right of workers to take industrial action and the right of employers to manage the work force to meet market demand. The settlement also set down basic principles of bi-lateral social dialogue between the social partners (Eurofound, 1999).

-
- In 1910 the Danish Government then established the first labour court as an institution for resolving industrial disputes. This followed recommendations of a formal commission that included social partners. This was the first example of a tri-partite negotiated institution. (Jorgensen, 2000).
 - In 1960 the Basic Agreement was established. This reaffirmed the principles of the September Settlement, asserting in a joint declaration the right of trade union association and that of employers to manage and divide the work according to a commercial rationale, including the right to hire and dismiss the labour force at any time necessary. (Madsen, 2006).
 - Active Labour Market Policy reforms in 1994 then significantly expanded state funded provision through Public Employment Services, establishing "activation" as a right and a privilege in Denmark. The idea was that a qualified and motivated workforce could be fostered with the principle of employment rather than job security (Jorgensen, 2000; Madsen, 2006; Beker, 2019).
 - In the 1990s policy makers and academic researchers (Wilthagen, 1998; Wilthagen and Tros, 2004; Bredegaard et al, 2005; Madsen, 1999) used the term flexicurity as an umbrella term to discuss the various forms of employment security and employer flexibility that were established and co-existed among the member states of the Europe Union. In this context a Danish form of flexicurity was distinguished along with so-called Anglo-Saxon, Continental, Southern European, and Eastern European models (European Commission, 2014), these distinctions are discussed in the literature review.

These developments have of course impacted the institutional arrangements, the most recent and relevant changes for this case study are reflected on below. However, they are most important to consider in light of the enduring impact that they have had on the institutional environment in Denmark. These developments have resulted in significant joint working between government and social partners – a tri-partite approach and a relationship of trust which has endured for many years.

In relation to approaches to anticipation and management of restructuring, as will be discussed below, the prevailing environment established at regional level mirrors that which exists at national level. An important reason for this is because the stakeholders operating at regional level are also those that are involved in national policy making. It is also the case that Denmark is a relatively small country, it is therefore unrealistic to expect vast differences between national and regional policy making environments.

This environment of respect and mutual recognition for the legitimacy of social partners is reflected in (and sustained by) the high union membership, high level of collective bargaining, and high number of employers that are represented by employer representative groups. These issues are discussed in detail in Chapter 6. The remainder of this section focusses on institutional arrangements

The institutional arrangements in Southern Denmark have undergone a series of significant reforms (most notably in 1970, 2007, and 2019) leading to changes in the sub-national economic development delivery landscape. These reforms are important because they shaped the policy options and perspectives of regional stakeholders involved in policy and practice related to regional resilience related policy and practice, with particular legacy effects that are evident in regional stakeholder understandings of the most effective ways to deal with anticipation and management of economic change.

The majority of analysis included in this case study refers to the period under which the 2007 reforms were in place, indeed at the time that the analysis was conducted for this case study the full impact of the 2019 reforms were not fully understood as the reforms had not been fully implemented.

The 2007 reforms (Business Development Act) established a new set of sub-national institutional arrangements with 5 regions created replacing the county council level, and the number of municipalities reduced to 98. These reforms were introduced to deal with a perceived lack of coordination and inefficiency in the system (Commission on Administrative Structure, 2004). The result was the creation of a new regional level in Denmark responsible for the development of economic development policy and delivery of a wide range of policy related to regional resilience.

Under the 2007 reforms the five new administrative regions were established, each of these regions are governed by popularly elected boards but do not have the power to levy taxes on citizens. The municipalities, also governed by politicians elected by popular vote, do have the power to tax citizens, Regional bodies (described below) do not have powers of taxation but operate on the basis of block grants from the national level, a statutory financial contribution from municipalities in the region, and European funding allocated by central government.

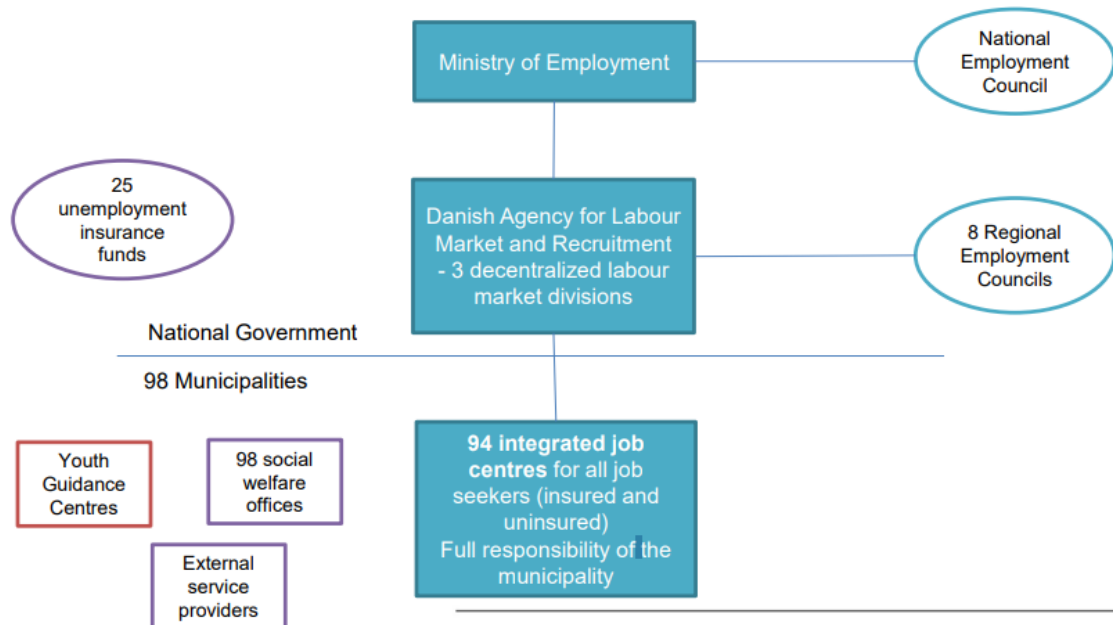
Nationally, the key ministries in relation to regional policy are the Ministry of Employment (discussed below), the Ministry of Business and Growth which advises the Regional Council, and the Regional Growth Fora in relation to the policy approaches they should take. As such it plays an important role in the development of regional

resilience related policy. Other ministries are also relevant but the initiatives that they are responsible for take place within the general policy framework that is established at national and regional level. The sub-national bodies operating in Denmark are collectively responsible for regional policy. These organisations operating under the Ministry of Business and Growth at regional and sub-regional level are:

- **Regional council:** the elected regional councils, composed of 41 members directly elected for four-year terms. The regional council is responsible for scrutinising and approving all expenditures in both the health care and regional development portfolios.
- **Regional growth fora:** The RGF is a public-private partnership for growth, it has specific responsibility for developing and monitoring the regional economic development strategy and also for developing specific projects to deliver the strategy. The purpose of the RGF is to adopt a proactive style of policy making to support innovation and growth. The board has 20 members, appointed by the regional council for a 4-year period. It includes regional and municipal elected officials, business persons, representatives of the higher education and research community, and trade unions. Members are appointed upon recommendation by the municipalities and social partners. The president of the RGF participates in the national Danish Growth Council. In keeping with the type of consensus-driven institutional environment described above, a system of "dual-key control" operates at regional level where both the elected regional council and the RGF may veto spending plans proposed by each other.
- **Regional employment council** acts independently of the other regional level entities and liaises mainly with the regional office of the national ministry and the local job centres. The employment council regions do not follow the regional boundaries of the 5 regions established in 2007 but rather are more a catchment area for analysis to support national and municipal level efforts (there are 8 employment regions). The regional employment council and the RGF operate separately and report to different national ministries and bodies. The regional employment council is concerned only with analysis of social security, ALMP delivery, and effectiveness in terms of employment rate. It does not have a wider remit in terms of wages, job quality etc.
- The area of employment policy is very much a shared competency across the three levels of governance in Denmark (national, regional, and municipal). This

is illustrated in the figure below. An advisory body with representation from the Social Partners is linked to each of the three levels: at national level, the National Employment Council; at regional level, the Regional Employment Councils; and, at local level, the Local Employment Councils.

Figure 4.2 The Danish Institutional set-up in relation to employment policy



Source: Danish Agency for Labour Market and Recruitment (2015)

These institutional arrangements result in employment policy, although delivered by local job centres, being more directly monitored and controlled through national government when compared with the other elements of regional policy such as economic development and healthcare that are delivered by Regional Council and the Regional Growth Fora.

Figure 4.2 above shows that, at national level, the Minister for Employment has overall responsibility for employment policy and is also the ultimate authority for the employment regions and measures delivered by the Job Centres. As such the scope for regionally differentiated provision is limited.

4.3 Profile of policies and practices included in the analysis

The following sub-section profiles the policies and practices included in this chapter. Table 4.1 profiles specific labour market policies and practices identified, as relevant for this analysis, which have been established in UK and Ireland and Nordic countries.

This table is not intended as a comprehensive account of all such policies and practices, rather it provides examples of specific labour market policies and practices, operational between 2008 and 2016, which were mobilised within the general national frameworks described in the literature review. Section 3 provides full details of the way that these policies and practices were identified.

The table contains fourteen policies and practices, there are eight in UK and Ireland (three in UK and five in Ireland) and six in Nordic countries (four in Denmark, one in Sweden, and one in Finland). The main objectives of the policies and practices are discussed below. The policies and practices contained in this analysis present a mix of the work of specific government agencies, targeted funding, and support programmes aimed at individuals and firms.

Table 4.1 Specific labour market policies and practices related to anticipation of change

Co.	Name	Primary beneficiary	Types of policy intervention	National Government	Regional Government	Public Empl. Services	Employers	Employer Organisations	Employee Organisation	HE / FE providers
UK	Sector Skills Councils	Business	<ul style="list-style-type: none"> • Advice • Provision of labour market information • Training 	*			*	*		*
UK	Innovate UK	Business	<ul style="list-style-type: none"> • Access to finance • Support of companies' growth • Matching/Networking • Support of internationalisation 	*			*	*		*
UK	Education and Skills Funding Agency	People	<ul style="list-style-type: none"> • Access to finance • Advice • Support of companies' growth • Training 	*	*		*	*		
IE	Skillnets	People	<ul style="list-style-type: none"> • Support of companies' growth • Support of SMEs • Training 	*	*	*	*	*	*	
IE	Innovation Fund Ireland	Business	<ul style="list-style-type: none"> • Access to finance • Advice • Attracting investors • Matching/Networking • Support of internationalisation • Support of SMEs 	*			*			
IE	Employment and Investment Incentive	Business	<ul style="list-style-type: none"> • Access to finance • Support of companies' growth • Support of SMEs 	*	*			*		

IE	First Flight Programme	Business	<ul style="list-style-type: none"> • Advice • Support of companies' growth • Support of internationalisation • Support of SMEs • Training 	*			*			
IE	Innovation voucher programme	Business	<ul style="list-style-type: none"> • Fostering innovation • Support of companies' growth • Support of SMEs • Training 	*			*			*
DK	(Regional) Business Development Centres	Business	<ul style="list-style-type: none"> • Advice • Matching/Networking • Support of companies' growth • Territorial coordination 	*	*		*	*		
DK	The Innovation Fund	Business	<ul style="list-style-type: none"> • Access to finance • Fostering innovation • Support of companies' growth 	*			*	*		*
DK	The Competence Development Fund in Industry	Business	<ul style="list-style-type: none"> • Fostering job mobility • Training 	*	*		*	*	*	
DK	Job rotation	People	<ul style="list-style-type: none"> • Fostering job mobility • Training 	*	*	*	*	*	*	
FI	Adult Education Allowance	People	<ul style="list-style-type: none"> • Income support • Training 	*				*	*	*
SE	Investments in automation for SMEs in manufacturing	Businesses	<ul style="list-style-type: none"> • Access to finance • Fostering innovation • Support of companies' growth 	*			*	*		

4.3.1.2 Description of specific policy approaches to anticipation of change

The *Sector Skills Councils* in the UK are a partnership between employers and sector networks, funded by central government. They have four aims: to reduce skills gaps and shortages; to improve productivity, business and public service performance; to increase opportunities to boost the skills and productivity of everyone in the sector's workforce; and to improve learning supply through National Occupational Standards, apprenticeships, and further and higher education. *Innovate UK* provides innovation support to companies in the UK, supporting development of new ideas and commercialisation of new technologies. This is delivered through providing support through advice, network development and funding. The overall purpose of which is to foster innovation, firm-level diversification, and economic development in international markets.

As an executive agency of the UK government, the *Education and Skills Funding Agency* in the UK provides a wide range of specific support for skills development. In the context of this analysis, the agency is responsible for supporting apprenticeships in a wide range of occupations across all sectors. It is, therefore, included as an example of cross-sector support but which is also notable as an employer-led initiative.

The *Skillnets* in Ireland aim to maintain and increase participation by enterprises in relevant learning activity that benefits the competitiveness of enterprises and the employability of the workforce; to support learning in growth sectors by enabling enterprises to make the most of the available human capital in the workforce in pursuit of a sustainable growth path; to provide meaningful support to unemployed people, in an enterprise context, that provides opportunities to enhance their chances of gaining employment; and to contribute to the development of national enterprise and labour market activation policies.

The main objectives of *Innovation Fund Ireland* are to increase the number and scale of innovation driven and high-growth businesses through increasing the availability of capital for early stage and high-growth companies. The organisation also seeks to attract venture capital fund managers to Ireland. This is complemented by the approach of the *Employment and Investment Incentive* in Ireland; this is offered to attract investment into existing businesses through a tax relief incentive for investment. The *First Flight Programme* in Ireland provides a similar range of services which are aimed at providing SMEs with support for exporting.

In Ireland, the *Innovation voucher programme* supports engagement between small companies and knowledge providers (universities and technical institutes) to facilitate innovation of products, processes, or services, to develop a new business model, or to access tailored training.

Regional Business Development Centres in Denmark are established in order to assist existing businesses with expansion. Business development centres provide services to small businesses in any sector. Expansion may be through diversification or changing focus into a completely new sector. Typically support must be provided to more than one firm at a time, based on common business needs.

The Innovation Fund in Denmark provides SMEs with funding (through brokerage with venture capital) so that companies may invest in technology in collaboration with universities and research centres. This support helps with the development of

corporate partnerships on innovation, mainly concentrating on high tech start-ups in order to foster economic growth and employment.

The *Job rotation in Denmark* scheme has a different focus to those discussed above. It aims to encourage training and development of both employees and unemployed persons through facilitating that an employee in a company can be replaced by an unemployed person while in continuing training. For employees they may choose training which is related or unrelated to their current role – allowing diversification if desired. The *Competence Development Fund in Industry* in Denmark is targeted at employees, providing them with funding to pursue training that they decide will be useful for their own employability in future.

The Adult Education Allowance in Finland provided funding to individual workers or entrepreneurs that wish to study for a degree or improve their professional skills and competences through other forms of accredited education and training. This allows individuals to diversify their skill set based on their own determined strengths / labour market opportunities.

Table 4.2 profiles specific labour market policies and practices which have been established in UK and Ireland and Nordic countries at management stage. The table contains ten policies and practices, there are four in UK and six in Nordic countries (three in Denmark, one in Sweden, two in Finland).

Table 4.2 Specific labour market policies and practices related to management of change

MS	Name	Primary beneficiary	Types of policy intervention	National Government	Regional Government	Public Empl. Services	Employers	Employer Organisations	Employee Organisation	HE / FE providers
UK	Redundancy Action Scheme (ReAct III)	People	<ul style="list-style-type: none"> • Employment incentive • Training 		*	*		*	*	*
UK	PACE- Partnership Action for Continuing Employment	People	<ul style="list-style-type: none"> • Advice • Territorial coordination • Training 	*	*	*		*	*	*
UK	Rapid Response Service (RRS)	People	<ul style="list-style-type: none"> • Advice • Provision of labour market information • Training 	*	*	*		*	*	*

UK	Better West Midlands project	People	<ul style="list-style-type: none"> • Advice • Matching/Networking • Start-up support • Training 	*	*	*		*	*	
DK	Early Warning	Company	<ul style="list-style-type: none"> • Advice 		*			*	*	
DK	Work-sharing	People	<ul style="list-style-type: none"> • Income support for workers • Working time flexibility 	*	*	*		*	*	
DK	Warning pool	People	<ul style="list-style-type: none"> • Advice • Training 	*	*	*		*	*	*
FI	Temporary Layoff	People	<ul style="list-style-type: none"> • Income support for workers • Working time flexibility 	*		*		*	*	
FI	Change security model	People	<ul style="list-style-type: none"> • Advice • Fostering mobility • Income support for workers • Matching/Networking • Provision of labour market information • Training 	*		*	*			*
SE	Job security councils	People	<ul style="list-style-type: none"> • Advice • Income support for workers • Matching/Networking • Start-up support • Training 	*				*	*	*

4.3.1.3 Description of specific policy approaches to management of change

The types of potential assistance offered here are more wide-ranging than those analysed above in relation to anticipation. With these policies and practice the exact assistance mobilised is highly dependent on the nature of the economic shock and the specific context – labour market opportunities available for affected workers, the profile of affected workers, and what is already available through mainstream provision. This is true, to some extent in the examples discussed previously but the examples identified in Table 2 are especially sensitive to context.

In each of the examples identified advice to individuals forms a significant part of the assistance provided. Typically, this is in the form of public employment services or private providers acting on their behalf advising individuals that have recently been dismissed. Advice is provided in terms of assessing individual skills and competences in relation to labour market opportunities and forming action plans in order to undertake any required training and retraining.

The dominant role of public employment services is not unexpected given the fact that these policies and practices are dealing with issues of reemployment for dismissed /

workers under threat of dismissal. In addition, Table 4.2 shows that a wider range of stakeholders involved in the delivery of these policies and practices when compared to policies and practices considered previously. Within this general finding there are some interesting examples and implications.

The range of other organisations involved reflects the fact that the policies and practices identified here are more focussed on individuals and developing employability / skills of future employment than policies and practices applicable to other existing definitions of regional resilience. This is accompanied by a relatively low level of employer involvement. This does not necessarily mean that business-focussed policies and practices are not relevant but may rather be a reflection of the fact that at the management stage many businesses may have ceased operating. The exceptions are the Change Security model in Finland and Job security councils in Sweden and the Rapid Response Service which often operate prior to formal business closure (though this may also be the case for other policies and practices).

The majority of the policies/practices cover national territories, the exceptions being the *Redundancy Action Scheme*; *PACE*; and the *Better West Midlands project* which operate in regions of the UK (the *Redundancy Action Scheme* is established in Wales and *PACE* in Scotland). In Sweden, the *Job security councils* are not-for-profit foundations which are set up by employer and employee representatives, as such the assistance is formulated at a sectoral level (with provision covering multiple companies).

In Finland, the public employment service has a strong role in working with employers to assist dismissed workers / workers at threat of dismissal, in this case it does not appear that the regional government plays a role in the process.

Work-sharing in Denmark is a social partner-led policy with collaboration between various employers in a particular sector in order to reduce work hours, within a limited, low-demand period, with the purpose of avoiding redundancies.

In Finland, *Temporary layoff* involves wage subsidy provided by national government that is paid to affected workers. Workers can also benefit from public employment services during temporary layoff. The measure can be introduced through consultation between public employment services, employers, and employee representatives. Consultation is also a key element in establishing the *work sharing* in Denmark, an arrangement whereby employers and employees agree on reducing work hours, within a limited, low-demand period. The work-sharing agreement has to include all

employees in a firm, departments, or production units. Introduction of this practice must be formally agreed between employer organisations and employee organisations. If the agreement is to last for more than 13 weeks, it must also be agreed by the Regional Employment Council.

In Denmark *Early Warning* is a counselling programme to help SMEs get through a situation of crisis in the best possible way and start a new course of growth. This can be through diversification or through quickly and efficiently ceasing trading, giving an opportunity for an entrepreneur to re-establish themselves and start a new company. This approach seeks to diversify productive assets in order that they may be used in any form of enterprise rather than seeking to maintain previous forms of economic activity.

4.4 Comparison of policies and practices with established definitions of regional resilience

This section analyses the policies and practices identified in the tables above, using the factors included in the analytical framework – analysis of firm level considerations, analysis of innovation assets, and analysis of learning and skills.

4.4.1 Analysis of firm-level considerations

Anticipation of economic change

Firm-level considerations play a central role in labour market policy which deals with anticipation of the economic change. At this stage of the restructuring process, policy maker interpretations of the needs and opportunities for firms shape their approaches, particularly in relation to facilitating support for growth through accessing international markets.

In the UK and Ireland, typically this involves national government working with employers and employer organisations to determine the opportunities for public policy intervention and to design appropriate actions / measures. In the Nordic model there is evidently more direct input from employee representatives in the process, indeed the extent to which support is provided directly to firms appears less common in the Nordic model when compared to the UK and Ireland – this is shown in lower levels of involvement of employers in specific policies and practices in Table 4.1 but is also a feature of the national framework discussed in the literature review.

The approach to anticipation of economic change in both the UK and Ireland and Nordic countries shares a common understanding with ecological understandings of

regional resilience in that it is based on developing new development paths based on previous development. A notable difference, however, between the UK and Ireland and the Nordic country approaches is evident when considering the primary beneficiary of policy intervention.

The UK and Ireland approach appears to be more centred on actively facilitating clustering through providing information advice and guidance to companies, with the Nordic countries centred on providing assistance to individuals.

The approach is somewhat aligned to the idea that resilience can also depend on the related variety (between either skills or industries), with this being important for the continued emergence of new economic activities and renewed growth of existing firms and sectors. In this respect, both the UK and Ireland and Nordic policies and practices here can be understood to be variety-creating processes which seeks to promote linkages between domestic firms and sectors and also those located in different countries.

Management of economic change

In Nordic countries there is more interaction with individuals prior to company closure, by contrast the UK approach predominantly involves direct interaction with individuals following company closure. In both cases, the nature of the support provided is shaped around reemployment of affected workers, as such firm-level considerations play a minor role in the policies and practices analysed.

The issue of path dependency provides the area of greatest synergy between the policies and practices analysed and the analytical framework presented in Section 2.4 which breaks down definitions of regional resilience. The policies and practices presented in Table 4.2, show a fairly wide range of possible approaches for policy makers, with most policies and practices involving regional level stakeholders to shape implementation. In this context, the extent to which path dependencies (functional lock-ins; political lock-ins; and cognitive lock-ins) negatively influence the process of adaption through reduced dynamism is an open question (one which is further explored in the case studies in Chapters 5 and 6).

4.4.2 Analysis of innovation assets

Anticipation of economic change

Within the engineering perspective of regional resilience, innovation assets and support are understood to be structured around key sectors and based on supporting settled

development paths. In some respects, the policies and practices at the anticipation stage appear to be consistent with this approach, particularly in the case of UK sector skills councils where some of the support is targeted to maintaining existing strengths. However, it is also clear that much of the support, for example that provided by Innovate UK, is targeted toward nascent sectors with potential to grow from existing strengths, and so therefore also somewhat consistent with ecological and evolutionary understandings of resilience.

Understanding the nature of resilience being implemented in policy, therefore, depends on implementation and the particular measures that are put in place. Indeed, it is clear when one considers the examples of policies and practices that conceptually different approaches are highly likely to operate within the same country.

In terms of the process of adaption, there is most consistency with the idea of complex adaptive systems when one considers the approaches to anticipation of change in both the Nordic and UK and Ireland policies and practices. In both cases the regional innovation system, in particular effective connectedness and collaboration between parts of the innovation system are recognised in policy and practice. This is most evident when one considers the sector skills councils in the UK and the Innovation Fund and Regional Business Development Centres in Denmark, the difference between the two approaches is the stronger role of employers in design and delivery in the UK examples.

Management of economic change

There is reduced emphasis on innovation assets in policies and practices which relate to management of change, when compared with the importance placed on such networks and systems at anticipatory stage. However, this is perhaps not unexpected given that managing negative effects of economic change is usually a reflection that such assets have failed to develop in ways that have led to employment and/or economic growth.

The exact approach and content of measures implemented by policy makers in the policies and practices described in Table 4.2 is not clear through this policy review (but will be explored for specific examples in the case studies which are part of research question 2 and 3). It is therefore not clear to what extent, and in which circumstances, existing regional innovation assets influence management of economic change, and to what extent this helps or hinders. There is a clear connection in this respect between the forms of path dependency described by Grabher (1993) and the perspective on

different forms of institutional entrepreneurship and place leadership identified by Grillitsch and Sotarauta (2018).

The UK example of the Rapid Response Service provides a mechanism through which dismissed workers may be provided with relevant measures to assist re-employment. Likewise, the different schemes identified in the Nordic countries provide similar scope – perhaps even more so because most of them (*Job security councils* in Sweden and *Early Warning* in Denmark) are typically operationalised prior to company closures and act to prevent closure. There may, therefore, be different forms of path dependencies exerting pressure on the way in which these policies are implemented.

4.4.3 Analysis of learning and skills

Anticipation of economic change

Perhaps one of the most significant differences in emphasis between the UK and Ireland, on the one hand, and the Nordic examples, on the other, concerns the approach to learning and skills. In relation to anticipation and change, in the UK and Ireland, most examples of policy and practices are centred on firm competitiveness and ensuring that firms have the capacity and/or know-how to invest in measures necessary for their competitiveness.

By comparison, the measures identified in the Nordic countries, particularly those such as the Competence Development Fund in Industry, and Job Rotation in Denmark, and the Adult Education Allowance in Finland, facilitate investment in individuals, who may or may not be employed, so that they can train or retrain in a linked or new profession. In effect, this places the emphasis on the individual and enables them to invest in their own adaptability.

The approaches identified here are most consistent with the path dependency perspective of adaption – with the Nordic policies and practices providing greatest potential for individuals to take agency over the extent to which various path dependencies impact their own resilience. By contrast the investment decisions and forms of learning and skills measures available in the UK and Ireland perspectives are rather more centralised (at firm and central government level) and therefore rather more dependent on the existence / influence of various forms of path dependent lock-in (such as those identified by Grabher, 1993 - functional, political, cognitive)

Management of economic change

Learning and skills are the main concentration for management of economic change in both the UK and Ireland and the Nordic policy examples analysed. To deliver learning and skills support, a greater number of stakeholders are involved in design and delivery of measures than is typically the case compared to anticipation stage policies and practices. The analysis of measures included in the policies and practices suggests that a wide range of learning and skills measures are provided.

The exact type of measures depends on the context of the restructuring event being addressed and may be implemented in a way that is consistent with different notions of resilience. The way in which measures are designed may, therefore, be consistent with engineering forms of resilience – where it is assessed that restoration of previous forms of economic activity are possible / sustainable. Conversely, it is also true that ecological forms of resilience are likely to be included in measures provided – enabling dismissed workers to use their skills and competencies to diversify into other linked sectors.

The approach to management of economic change in such policies and practices is clearly aligned with the equilibration understanding of regional resilience as it seeks to restore employment and/or levels of economic activity to previous levels. Indeed, assessment of the success or failure of the implementation of the measures provided to manage the negative effects of restructuring events regularly use such metrics (as described in Section 2.33 of the literature review).

When considering the process of adaption in more detail, it is also clear that the concept of path dependency and the extent to which various forms of lock-in act to enable or hinder policy maker choices is clearly relevant. Additionally, policy maker understandings of the extent to which the competencies of affected workers are most suited to a return to previous development paths or whether they can be assisted to take advantage of new development paths is important. Such a judgement is in turn influenced by the relative strengths and adaptability of regional innovation assets.

The understanding of adaption through the path dependency and complex adaptive systems frameworks can equally be understood to be relevant when considering the policies and practices identified in management of change. Understanding the nature of the process of adaption through forms of path dependency and consideration of the role and influence of various forms of agency (as described by Grillitsch and Sotarauta, 2018) is perhaps most instructive in understanding motivations and policy approaches established by policy makers seeking to manage change.

4.5 Chapter conclusions

The analysis presented in this chapter was undertaken to answer the following research question: *To what extent does the focus of national labour market policies and practices related to anticipation and management of economic restructuring reflect existing definitions of regional resilience?* In order to gather evidence to answer this question, a review of national labour market policy and practice was carried out in the UK and Ireland, and in Nordic countries (Denmark, Finland, and Sweden). This chapter presented information profiling the policies and practices identified.

The analytical framework developed through the literature review, presented in Section 2.4 was used in order to analyse the information and assess the extent to which the policies and practices identified reflect academic definitions of regional resilience. The analysis focussed on assessment of the extent to which the policies and practices reflected academic understandings of resilience and adaption in relation to firm-level considerations, innovation assets, and learning and skills.

The literature review discussed the fact that much of the literature which mobilises the concept of regional resilience has done so through assessing the extent to which regions have managed the effects of economic restructuring. In such studies, a significant volume of analysis has employed mainly equilibrist frameworks and methods to measure metrics such as employment and economic output. Typically, such studies have considered policy responses to negative impacts of business closure through a range of labour market responses to assist businesses, dismissed workers, and/or undertake regeneration of land and property. A less common connection in the literature is that of labour market policy that deals with economic restructuring prior to economic restructuring, at the anticipatory stage. This chapter presented a review of policy labour market policies and practices at different stages (anticipation and management) to consider how consistent such policies and practices are with academic definitions of regional resilience. Key chapter findings are outlined below.

4.5.1 Understanding of resilience / dynamics of change

This section includes discussion of firm-level considerations; innovation assets; learning and skills; and infrastructure and place development.

4.5.1.1 Firm level considerations

The analysis suggests that firm-level considerations are central to policy maker understandings of the dynamics of resilience. Direct support to firms is evident in

labour market policy at both anticipation and management stages of the restructuring process. Policy maker understandings of the needs and opportunities for firms directly shape these approaches, particularly in relation to facilitating support for growth through accessing international markets.

The details of the policies identified have clear parallels with equilibrist definitions of regional resilience. Policy makers seek to maintain established development patterns, particularly through support to key sectors. The policy analysis suggests that maintaining existing sector strengths and development of growth sectors based on previous development paths is reflected in specific measures provided and established.

The policy approaches considered in the UK and Ireland examples and the Nordic countries clearly reflect concepts of related variety and clustering, central to the Generalised Darwinism understanding of the process of adaption, as areas that are important to resilience. The concept of related variety is clearly present in the way that support to sector development is provided in the UK and Ireland. Related variety is also important in the Nordic context, however, there are also examples here where support is provided to individuals rather than firms – enabling individuals to take more agency over the process of shaping their skills to meet market demand, rather than such decisions being taken by firms, and implemented in a more top-down manner as in the UK and Ireland examples of firm-level policies.

4.5.1.2 Innovation assets

The analysis of policy and practice shows that policy has been established to actively foster and maintain innovation networks and active participation of firms and workers in key sectors. There are clear examples of this in both the UK and Ireland and Nordic countries. Indeed, the strength of innovation assets is demonstrated through these policy approaches to be important for policy makers to enable economic growth / competitiveness and reduce likelihood of negative effects from economic change.

The analytical framework (presented in Section 2.4) shows how the various academic notions of regional resilience each recognise the importance of innovation assets in the process of adaption. However, the General Darwinist perspective does not deeply engage in exploration of factors which influence the formation, evolution, and utility of innovation assets for resilience.

By contrast, key aspects of path dependency and varied degrees of agency are more directly related to understanding how innovation assets operate when faced with economic change. As such the policies and practices reviewed, for both the UK and

Ireland and the Nordic countries, are perhaps most closely aligned with the path dependency framework of adaption.

4.5.1.3 Learning and skills

The analytical framework developed in the literature review (section 2.4) identified the fact that academic definitions of regional resilience recognise the importance of learning and skills investment in regional strategy. Skills to support and maintain the competitive advantage of pillar firms and key sectors are an important aspect in the engineering understanding of regional resilience; whereas, for the ecological understanding of regional resilience, appropriate skills for existing and new sectors are important.

There is a reasonably clear reflection of the principles of related skills variety expressed by Boschma (2015) in the policy approaches in Denmark (Competence Skills Framework) and Finland (Adult Education Allowance). These approaches seek to build individual worker competence through learning and skills investment, with the selection of training led by individuals rather than firms. The purpose of these initiatives is to enhance transferable skills for future employment linked to current occupations, though not necessarily with current employers. By contrast, UK and Ireland approaches are mostly orientated toward business / sector determined provision, with a lower explicit level of learner choice.

Indeed, the greatest differences between the UK and Ireland and Nordic policy approaches can be observed in the area of learning and skills. In this respect the UK policy framework (discussed in the literature review) and the policies and practices in this Chapter demonstrate a concentration on learning and skills targeted toward particular sector or industrial competitiveness (and therefore resilience). By contrast the Nordic approach appears to be targeted toward the employability (and therefore resilience) of individuals.

Whilst the UK and Ireland and Nordic policy approaches are different, it is notable that they each recognise an important role for policy as a means of delivering particular forms of resilience. This is discussed in more detail in the next section.

4.5.2 Main agents of change

The analysis in this Chapter demonstrates a range of national labour market policy and practices which reflect academic definitions of regional resilience. The analysis presented identifies the importance of firms, innovation support, and learning and skills

provision as discrete but connected approaches to resilience which are consistent with different aspects of academic definitions of regional resilience. Within this analysis a wide range of agents of change can be identified. The most regularly observed agents of change are national government, representatives of the private sector, worker representatives

The analysis presented in the chapter focusses on national policy and practice to provide a broad understanding of policy approaches. However, the implementation of many of these policies and practices involves actors that operate at regional level, illustrating the multi-scalar nature of regional resilience and related policy. The analysis also highlighted varied roles and emphases within the analysed policy and practice, in the UK and Ireland context there is clear recognition that firms are a leading driver of policy. By comparison, in the Nordic countries there is greater concentration on individuals (both workers and unemployed). This context has an influence on wider stakeholder involvement in the Nordic countries.

In summary, the analysis reaffirms the fact that a multi-scalar approach to understanding regional resilience research is appropriate to develop a fuller understanding of exactly how these various agents of change combine (or not) to establish an operational form of regional resilience. The research, in particular the contrast between approaches to management and anticipation, also demonstrates the importance of exploring perspectives of various agents of change to understand to what extent operationalised versions of resilience are determined by / enabled by different stakeholder understandings of regional resilience and the institutions that they operate within (issues that are central to research question 2 and 3).

4.5.3 Role for public policy

The analytical framework, developed in Section 2.4, demonstrates that most academic understandings of regional resilience and the process of adaption recognise an important role for public policy. This Chapter has demonstrated that there are indeed a number of policies and practices that are consistent with academic definitions of regional resilience. The analysis also suggests, however, that there are some differences in application and emphasis when considering the distinction both between countries, and also depending on the anticipation and management stages.

There are a wide range of examples of equilibrist approaches which can be considered to be consistent with engineering and ecological approaches to regional resilience. Such approaches most commonly seek to protect or re-instate previous development

paths following specific closures. Equally, however, there are examples of where policy seeks to shift development paths through sector support, innovation support, and learning and skills support.

The analysis in this chapter does not however reveal the underlying drivers which motivate policy makers to select certain courses of action, i.e., why forms of resilience and adaption are selected, and which influences help or hinder such selections being made. In this respect further analysis at regional level will be useful to explore the extent to which various forms of lock-in (functional lock-in / political lock-in / cognitive lock-in) identified by Grabher (1993), and different forms of agency identified by Grillitsch and Sotarauta, (2018) (innovative entrepreneurship; institutional entrepreneurship; and path advocates) influence different approaches to resilience in different institutional contexts.

When considering the differences between anticipation and management there is also a clear link with the idea of critical junctures, which act to shape policy maker perspectives. In this respect Capoccia (2015) identified critical junctures as a way of explaining how seemingly entrenched organisational norms, formal rules, public policy, and political economy may be transformed as a result of specific events.

This is an important consideration which may help to understand to what extent stakeholder understandings of regional resilience may change and to what extent views of the most important mechanisms through which economic change can be anticipated and managed evolve. This idea is part of academic theory in relation to adaption, notably as part of sector life-cycles described by Martin & Sunley (2013). It is therefore an aspect that will be interesting to investigate through the regional-level case studies.

In summary, the policy analysis presented in this chapter only takes us so far in understanding regional resilience in policy. Further research at regional level is important to develop an understanding of how and why specific approaches are taken and how they are implemented in practice. These elements are explored in more detail in case studies of Tees Valley and Southern Denmark which are the focus of subsequent chapters.

5 Tees Valley case study

5.1 Introduction

This chapter presents a case study of the Tees Valley, examining the policy making process in detail, focussing on the way in which key stakeholder understandings of anticipation and management of economic change are mobilised into specific policies and practices. The primary sources for the analysis are a document and data review undertaken in 2018, and interviews with regional policy makers carried out between October and December 2018. Representatives from key organisations involved in the policy making process, including those from the public, private, workers representatives, and the voluntary sectors were interviewed, a full list of interviewees is contained in Appendix 3.

The chapter presents the key features of the institutional arrangements and the institutional environment, discussing the core processes which underpin these features, the way in which they connect with academic definitions of regional resilience. The chapter also identifies implications for our understanding of regional resilience.

The analysis reveals that the way in which policy makers understand the way in which the region should approach anticipation and management of economic change varies across the region. The most significant, though by no means only, differences among stakeholders relate to the extent to which policies and practices should concentrate on developing and maintaining human capital or business-focussed forms of resilience. These positions reflect a varied set of priorities and understandings of the key drivers which underpin the process of adaption and the degree of adaptability required to anticipate and manage economic change.

Ultimately the case study reveals that it is a combination of these understandings set within the region's particular institutional environment and a set of evolving institutional arrangements which determine established policies and practices, forming a specific business-focussed approach to anticipation and management of economic change.

5.1.1 The Tees Valley “region”

The Tees Valley is situated in the North East of England, located between North Yorkshire and County Durham. The Tees Valley is made up of five local authorities, Darlington; Hartlepool; Middlesbrough; Redcar and Cleveland; and Stockton-on-Tees. In the context of this chapter the term region is used to refer to the Tees Valley.

The Tees Valley area covers a total of 3,300 square miles, the latest population estimate from the UK Office for National Statistics estimated the total population of the Tees Valley as 671,000 (in 2016). The Tees Valley region represents 1.2% of the population of England and 0.6% of the English land mass; it is highly urbanised, with 90% of the population in urban areas. The population is concentrated in the five main town centres (35%) with the remaining population located in the suburbs, in smaller settlements, or rural areas. The most populated towns in the region are Middlesbrough, Hartlepool, Stockton-on Tees, Redcar, and Billingham. The region has a strong industrial heritage through its history of steel making and chemical processing industries (Tees Valley Economic Assessment, 2016).

Stockton on Tees is the largest of the Local Authority areas in employment and population terms. It is followed by Middlesbrough, a large industrial town located close to Teesport and the home of the University of Teesside (Tees Valley Economic Assessment, 2016). Darlington, a market town, with its position on the East Coast mainline, provides the principal gateway rail station for Tees Valley as well as Durham Tees Valley airport, while Redcar and Cleveland, which contains the coastal town of Redcar and is historically associated with the steel and chemicals industry has the third largest population. Hartlepool is the smallest Local Authority in both population and employment terms (Tees Valley Economic Assessment, 2016).

The Tees Valley Combined Authority statement outlines Tees Valley as a functioning economic geography with 87 per cent of residents also working within the region. This equates to around 248,000 people living and working in Tees Valley with 38,000 Tees Valley residents working outside of the area and 35,000 Tees Valley workers resident in other areas (Tees Valley Economic Assessment, 2016). Whilst most people work within the local authority area they live in, there are substantial travel to workflows between local authority areas within Tees Valley.

This chapter continues in the following way: Section 5.2 discusses the way in which institutions operate in the region, identifying the key processes and drivers which establish policies and practices relating to anticipation and management of economic change; Section 5.3 reflects on the various ways in which stakeholders understand anticipation of economic change and the way in which this is mobilised in policy and practice, with Section 5.4 presenting the SSI Steel works closure as an example of how the approach to management of economic change played. Section 5.5 discusses the process through which stakeholders in the region mobilise approaches to anticipation

and management of restructuring. Section 5.6 discusses conclusions from the case study, identifying what the approach to anticipation and management of economic change informs us in relation to regional resilience and how this relates to academic discussion of the concept.

5.2 The policy making process in the Tees Valley

Section 4.2 discussed some of the context within which regional policy makers operate, discussing the evolution of institutional arrangements and the institutional environment. This section builds on that and discusses how the policy making process operates in the region and what some of the key influences in this process are. Figure 5.1 below presents the policy making process in the Tees Valley. This diagram is taken from the Tees Valley Combined Authority Assurance Framework document, which is required to demonstrate the policy making process to the UK Government.

Figure 5.1 The formal policy making process in the Tees Valley LEP

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Source: Tees Valley Combined Authority Assurance Framework (2016), p.4.

Considering this process in light of the previous research undertaken relating to regional resilience a number of implications arise. Firstly, the key parts of the policy making diagram for this study are the strategy formation section at the top and the section immediately below the dotted line which is headed 'TVCA Policy / Assessment + Prioritisation Role'. It is this process of strategy formulation and operationalisation as

it relates to anticipation and management of economic change and the way this process works in practice and the key drivers underpinning it are important, and discussed in the following section (Section 5.2.2).

Secondly, as the research questions require exploration of stakeholder understandings (of anticipation and management of economic change) among those involved in formulation of strategic planning and strategy and also those involved in the detail of delivery to understand the extent to which their understandings of regional resilience policies and practices are operationalised (explored for this case study in Sections 5.3, 5.4 and 5.5).

5.2.2 The influence of institutional arrangements on policy approaches

This section uses the results of interviews with key stakeholders involved in the policy making process presented above to identify key influences in the process and their impact on policies and practices to anticipate and manage economic change. This section considers the impact of formal institutional arrangements, with the following section considering the impact of the institutional environment.

5.2.2.1 The influence of European policy and funding on regional policy

The European Structural and Investment Funds (ESIF) have a direct impact on the scale of regional policies and practices that are established in the region as these funds provide significant resource (£172m between 2014 and 2020). The policies and practices funded through European funding are part of the review of policies and practices referred to above, showing no divergence with activities that are funded through domestic funding. Indeed, all stakeholders interviewed stated the activities that are funded through ESIF are not different in terms of policy focus and target outcomes to that which would have taken place in any case, one stakeholder commented that when considering European funding:

It [European funding] is really important because it is a big chunk of our budget, about two-thirds of our funds, but *we don't think of it in a different way, we just use it to reflect our priorities. There are checks and balances to be aware of but that does not shape policy (Local Government elected representative).*

The only influence that was identified from European funding was that fact that European funding guidelines established by the European Commission influenced the membership of groups involved in the design and implementation of European funding. The stipulation that social partners must be part of these groups guarantees a role for

trades unions in the process. There is, therefore, theoretically a small influence in the policy making process related to use of EU funding.

Despite this most stakeholders noted that the influence of UK national government on the use of European funding is actually to act as a restriction on the way that it may be used, when compared with other regions in Europe. Set against a determination from the European Commission that EU funding should be used flexibly to reflect diverse regional priorities, the UK government has implemented an approval process for European funding applications in European regions which stipulates that it must be closely aligned to national priorities.

As such, in this case study, European policy and funding are considered to be of relatively little influence in the policy making process, serving only to reinforce through additional resource the types of activities (and existing approaches to anticipation and management of economic change) which would otherwise have been established.

5.2.2.2 The influence of national government on regional policy

The literature review and document review identified the increasing tendency toward deal-making forms of devolution, particularly in the UK. This has been accompanied by a growing body of academic research and comparative studies which have analysed the extent to which this has led to greater regional and local autonomy, with significant questions regarding agency and legitimacy in decision making (for example, Bristow and Healy, 2014; Boschma & Capone, 2015).

In relation to the Tees Valley, the recently established institutional arrangements are the product of deal making between local authorities in the region and central government. The stakeholders interviewed identified the continuing role of the UK government as a highly significant factor shaping policy debate and framing the established approach to anticipation and management of economic change in the region. The nature of this influence can be divided between strategic-based influence and resource-based influence. The main features of these elements are discussed in below.

The stakeholder interviews provided a picture which suggested that the overall devolution settlement between Tees Valley and central Government was not considered to be concluded following the election of the Mayor in 2017. This could mean further devolution of specific powers and responsibilities to the Tees Valley, or it could mean smaller changes to the way existing arrangements operate. This is set within the context of a relationship with central government has gone through different

stages as regional strategy has developed, with an overall trend toward central government and regionally co-developed strategy and investment plans, with an emphasis on the region reflecting national industrial strategy. The process as described by interviewees can be summarised as follows:

- The first iteration of the Strategic Economic Plan, 2013-2014. The role of central government was largely to provide information for the LEP to produce the document with regional partners, which would then lead to projects which government will assess and possibly fund - the first iteration of the SEP led to the first local growth deals. The policy intention there was that government did not give a lot of advice on the initial SEPs because the focus was on competition between LEPS. At this time, the Conservative-led coalition government held the view that such competition would drive up the quality of the proposals put forward for funding. By contrast, government help, and support would not foster true competition, as such *'the initial approach was a little like a teacher marking work'* (BEIS interviewee)
- Over time the interaction between BEIS and the LEP became more frequent and the approach of civil servants was to support Tees Valley to do the best job they could. But it was still locally led and the LEP were free to take the advice – but again it was a marking assessment with proposals funded or not through growth deals. The approach was still fundamentally a top-down approach.
- From 2016 onwards, the situation has changed, and the devolution deal was much more co-production - a small team in Tees Valley and a small team in central government to produce something that was commonly accepted. *'That felt like a shift in approach toward co-production and more negotiation and about how we can meet shared economic outcomes'* (Local Government officer)

Interestingly, stakeholders interviewed that regularly interact with government also drew a distinction between government departments. They noted that the relationship with departments differed, with perhaps varying degrees of enthusiasm among government departments when it came to engage in discussion with regional policy makers. One reason put forward for this related to a perception that there was a scepticism that the evidence gathered by regional policy makers met the green book standards (an issue discussed in more detail in Section 5.3) and that the policy proposals were therefore overly optimistic in their proposed outcomes. Other reasons related to the fact that there were a lot of LEPs each competing for scarce funding and

the various departments did not have the time to for substantive engagement with each of them. Nevertheless, this direct, but rather patchy relationship with central government is in contrast to the relationship policy makers in Tees Valley previous had with One NorthEast where there was greater opportunity for policy discussion through various fora.

This theme is also reflected upon in terms of the institutional environment which altered in the region following the election of a Conservative Mayor. In this respect, stakeholders noted that, due to his political affiliation, he has had more success in engaging directly with the Conservative Government than the LEP may have otherwise had with a Mayor from a different political party.

A key issue with the strategies and plans produced by LEPs has been a lack of distinctiveness in regional policy and institutional isomorphism (IPPR, 2013; Centre for Cities, 2015) This issue was noted by around half of the stakeholders interviewed, though most highlighted that the Strategic Economic Plan for Tees Valley had sought to show regional distinctiveness and establish ambitious targets.

Nevertheless, the narrow focus on what government funds can be used for with a concentration on business growth was noted as an issue permeating all LEP plans. This issue effectively makes it more difficult for regions to establish distinctive strategies. This is in contrast to the stated aim for LEPs, the UK Government Local Growth White Paper (2010) states that there would be three key aims for LEPs, the first of which is 'Shifting power to local communities and businesses - by establishing dynamic local enterprise partnerships of local business and civic leaders, operating within an area that makes economic sense, which can provide the vision, knowledge and strategic leadership to set local priorities and empower communities to fulfil their potential' (HMG, 2010. P.5)

Stakeholders representing workers, the voluntary and community sector, rural sector, and education sectors also argued that the UK Government promotes policy discussion which is rather narrow (a factor which contributes to LEPs producing similar economic plans). This narrow focus neglects the importance of resilience-related investment in workers, learners, and the voluntary and community sectors, and is instead more clearly focussed on the needs of (mainly larger) established firms.

Whilst this was noted as an issue for anticipation and management of economic change it was also noted that this narrow focus is also reflected in the fact that national

framework conditions, such as employment rights, employment standards, regulation of zero hours contracts and precarious forms of employment, and the minimum wage also presented opportunities that could be taken to strengthen the ability of workers to mitigate negative impacts of loss of employment. Whilst such policies are set nationally with the UK-wide employment law framework, some stakeholders noted work being led by the new mayors of Manchester and Liverpool to promote voluntary codes of conduct that employers could sign up to. As such, within a rather narrow version of resilience promoted nationally there was potential for more local activity.

It is interesting to reflect that some of those interviewed wanted to see more emphasis on improved working conditions for employees as a means of improving the regions ability to prepare for and manage economic change (rather than reduced flexibility for employers). However, given the prevailing approach in the region and the national policy approach there was also little optimism that that this would be delivered without a change of government or at least a resolution to the Brexit discussions and a significant national debate about these issues. For the interviewees that raised these issues, their understanding of the most effective approach to anticipation and management of economic change is based on ensuring that all workers have good working conditions and stable employment in order that they themselves are resilient to economic change, in contrast to much of the policy discussion which is restricted to ways in which businesses can be more resilient. In a sense then the institutional arrangements in the region serve to promote forms of business resilience over individual resilience (the ways in which stakeholders understand anticipation and management of economic change is discussed in more detail in Section 5.3).

An additional practical issue raised by one interviewee active in the negotiations between the Combined Authority and the UK government is also of relevance:

Our sense is that the government is, at present, taking stock of devolution – and of course they need to save legislative time to deal with Brexit. To be honest our attitude is that we are also just about on top of what we are doing at the moment, we do not have significant capacity to deliver much else. (Local government elected representative)

The important point, as was also referenced by other stakeholders, is that there is not a significant amount of capacity in the region to take forward new initiatives that are not resourced by national Government. This view is formed in the light of significant cuts in public expenditure over the last decade which limit regional capacity to develop and

deliver projects, regardless of the powers devolved to the region. There is also a sense that it is important that the region uses the currently devolved powers well and demonstrates what it can achieve, rather than spending too much time and resource on pursuing further devolution.

5.2.2.3 Place-specific factors which shape the regional policy making process

The overall purpose of the LEPs, as private sector led organisations, ensures that they are designed to represent the business communities of the regions that they operate within. As a result, there is strong representation of current business interests on the LEP Board. The working groups which operate underneath the Board contain wider representatives of, for example worker representatives and the voluntary and community sector (TVCA, 2016).

This is perhaps common among all LEPs operating in England, indeed the literature review reflects there have been some criticism that the national approach has led to a form of institutional isomorphism (a process through which organisations become increasingly similar in function and outlook) (Bailey, 2010; Bentley et al., 2010). There are aspects of the institutional arrangements in the Tees Valley region which have perhaps reinforced this tendency.

One such aspect is the fact that the region has significant inward investment opportunities suitable for large companies, a key reason behind the establishment of the Tees Valley Development Corporation in 2017 (TVCA, 2017). Delivering such major inward investment is a priority for central government, but also necessitates central government involvement, due to the scale of resources usually involved in encouraging such investment, this increases the collaborative relationship with central government, as a government stakeholder commented:

National level support is there to support framework conditions – however, our largest economic intervention recently has been the Regional Growth Fund. Tees Valley was quite successful as they are almost exactly in the “sweet spot” of what the fund was supporting, the policy is about large internationally mobile capital investment that could [for example] either go to the Tees Valley, Rotterdam, or Dubai etc. They [Tees Valley] are able to put into play a whole range of different activities from multi-national firms with no particular affinity with the Tees Valley. (National Government representative)

In a sense this aspect may serve to reinforce the existing asymmetrical power relationship between the region and national government. In a way it can also be

argued that the arrangements put in place at regional level to develop regional policy also serve to reinforce this. The LEP Board is responsible for the overall strategic direction of the partnership, including setting specific priority investments and key spending and outcome targets for investments. The thematic working groups are tasked with working up specific investment proposals and monitoring specific performance in the areas that are delegated to them by the LEP Board (TVCA, 2016). As noted above, these working groups may contain more diverse membership than the LEP Board, however their membership and work programmes are ultimately approved by the LEP Board.

The literature review outlined the fact that discussion regarding multi-scalar policy making tends to stress the potential influence of both vertical and horizontal linkages (Morgan, 2002; Zhang & Peck, 2016). It is not, therefore, simply the relationship between national and regional organisations that potentially determines policy and practice. Within the Tees Valley region, the Tees Valley Combined Authority has a key role to play in the constitution of the LEP and the formulation of policy and investment plans. As such, whilst the LEP is Private Sector led it could also be characterised, as one interviewee put it, as *'heavily local authority-led, and by virtue of the system, central government-directed'* (Higher Education representative). What emerges through the interviews is a picture of a policy making structure that is intended by central government to produce the type of policies and practices at regional level that central government want.

There is agreement among stakeholders that the purpose of this form of organising LEPs is so that the government can maintain a significant degree of control over the investments made by LEPs. Where there is less agreement is on the suitability of this approach, some regional stakeholders were critical of this approach, stating that the effect of this approach is to *'embed at regional level a view of economic development which seeks to give business as much as it can and then relies on trickle down to benefit the region, a discredited view of economic development'* (TUC). However, a minority of those interviewed also identified that the main motivation for central government was to reduce waste in public expenditure through making sure there was targeted investment with specific measurable outputs and outcomes.

What should be noted here is that the legacy of the Regional Development Agency, One NorthEast (which operated from 1999 to 2012), played a significant part in interviewee perceptions regarding the current organisational arrangements in the

region. One NorthEast was mentioned by most of those interviewed, each of which spoke about how regional policy was either better resourced or their organisation had more of a say in the ways that resources should be used under the previous arrangements, this despite what some perceived as a bias with One NorthEast toward investment in Newcastle/Sunderland. This point is important as it provides the context within which some groups that feel underrepresented in the current LEP arrangements frame some of their thinking.

5.2.3 The influence of the institutional environment on policy approaches

This section considers the prevailing institutional environment in the Tees Valley through considering the key influences on the policy making process evident through the document and data review and stakeholder interviews. The section considers the impact of the new Mayor, the varied status and power of stakeholders within the region, impact of recent economic changes, and other regionally-specific factors.

5.2.3.1 Key place-specific factors which shape the institutional environment

The effect of the current political settlement in the region on the policy making process has been a consensus among policy makers in the region that they have a particular window during which they need to capitalise on potential opportunities. This view is based on the fact that a Conservative Mayor has a level of access to Conservative central government ministers that differs compared to the access that Combined Authority officers are able to gain. It is also the case that as the new metro-mayors were established by the present government they are understood to be eager to engage with them and demonstrate that they can have an impact.

There are interesting side-effects of this strengthening of the direct relationship between the region and central government. For example, the fact that the mayor can lobby central government directly means that LEP representatives have reduced engagement with pan-regional fora such as the Northern Way and the Convention of the North, with these organisations becoming of perceived reduced value to the region as they have a more direct line to ministers and senior civil servants.

The politics of the mayor and government are not the only interesting aspect, this change in the institutional environment presents opportunities due to the fact that the office of the mayor is a new one in the Tees Valley. As a result, the mayor is neither influenced nor bound by any previous ways of working. The mayor and his staff therefore have been presented with an opportunity to set new norms and ways of

working. It is interesting to reflect that the next mayor will be left with assets such as the resources of an office and support staff but also a set of precedents, for example, the fact that the mayor exists as a slightly separate entity to the Tees Valley Combined Authority. As the Chief of Staff of the Mayor puts it:

That's really important because that gives you a totally separate way that the mayor can operate and deal with central government, he doesn't need to go back through the same channels that the combined authorities has already been using because it is a separate operation. So, we have established relationships with the relevant departments in London ourselves but also any new mayor in future would understand that and they would presumably continue to work in the same way. (Local government elected representative)

Through this process and circumstances, the Tees Valley is perhaps currently seen as a useful test area for Government to enable new ways of working. This is not only a result of the institutional environment, the result of the political factors identified above, but also because the Tees Valley is quite a small area – relative to, for example, Greater Manchester or Birmingham who also have new mayors. As such, if initiatives and policies are seen as a failure, it is not as significant nationally as it would be in those areas. Therefore, it may be that government is willing to try and test out new ways of working in the Tees Valley that it may be unwilling to elsewhere. This understanding of the particular current set of political circumstances have perhaps also motivated partners in the region, with one commenting that:

What this period of time has the potential to do is prove that a formally deprived and depressed area in the north of England can come up with good policy ideas and prove that within Whitehall. If nothing else, that is the biggest opportunity that Tees Valley have been given by these political circumstances. (Business representative).

5.2.3.2 The roles and influence of different types of stakeholders in the policy making process

The literature review discussed the varying extent to which there is evidence of tripartite approaches (relating to public sector, business representatives, and representatives of labour) to policy making in Europe and the extent to which this changed during the great recession. The particular context of the institutional arrangements and the institutional environment in this case study do not seek to facilitate a tripartite approach. The approach in the region, indeed the approach in all

English regions as set out in the Local Growth White Paper is that LEPs should be established and operate as explicitly business-led organisations (HMG, 2010). Despite this, there are a range of other stakeholders that are involved in regional policy, this creates an environment with varied degrees of power in the policy making process for stakeholders seeking to influence policy and practice.

The fact that the LEP is business-led reinforces the primacy and status of business in policy discussion, when compared to representatives of the workforce and the voluntary and community sector, in the policy making process. Half of those interviewed noted that this environment replicates power relations which exist nationally, one stated,

The UK government is mainly concerned with a business perspective and how that perspective is reflected in national news. This has a cyclical effect with the media than running with this and seeking to discuss what business leaders think about public policy approaches. (Voluntary sector representative)

Within this process there is also a perception that there is a concentration in much policy practice specifically toward larger companies. This is perhaps reflected in the way in which collaboration and consultation with organisations which represent larger firms is prioritised. This appears to be the case in other LEPs, for example:

The more and more we deal with the LEP the more obvious it is that they are most concerned with larger firms – this is true of other LEPs too. They struggle to understand the small business community and how to engage with them – obviously, we are a decent conduit into all of that for them. But it does not feel like there is equality of representation in what they are doing and seeking to fund. (Business representative).

Some stakeholders argued that this potentially means that the LEP misses out on the opportunity to work with smaller firms to support innovation activity. However, it is also the case that the limited resources that the LEP have, especially when compared with Regional Development Agencies that operated in regions prior to 2010, means that they are not able to involve all potential partners in all activities.

Within this 'business-led environment', the role of the Tees Valley LEP and Combined Authority is highly influential as a decision maker and conduit between central government and the region. These organisations are heavily intertwined, with many of the same personnel acting on behalf of each. The LEP AND TVCA organisations have

a primary role in assembling the evidence base and brokering strategic and specific investment decisions in the region. These functions were previously held by the regional development agency One North East prior to the establishment of the LEP. However, the fact that there was a partnership in Tees Valley predating the LEP means that, by contrast, the local authorities have taken on a more significant and direct role interacting with central government since the abolition of One North East.

Throughout the interviews the importance of the role of a strategic approach to development and evidence analysis was referenced. The role of the LEP and Tees Valley Combined Authority are therefore recognised by other regional partners as vitally important. The data behind the region's economic assessments and strategies are in the main nationally produced and publicly available, and may not be the sole evidence base upon which policy decisions are made, nevertheless, as the LEP and Combined Authority are the primary producers of analysis and associated strategic statements upon which the regional makes policy decisions, they are lead partners in shaping operationalised policies and practices.

5.3 Approaches to anticipation of economic change

This section discusses the ways in which key stakeholders interviewed in the Tees Valley understand the way in which regional policy should be used to anticipate economic change and prepare the region to take advantage of opportunities for economic growth and/or mitigate against negative impacts of economic change.

Views of stakeholders are compared with the prevailing policies and practices in the Tees Valley to demonstrate the dominance of a business-orientated view of resilience, within which policy and practice toward human capital plays a supportive but secondary role. Reflecting on the findings of the previous section the key institutional aspects and processes which influence this approach are also identified. Following this the section compares the established approach to regional approach to anticipation and management of economic change in the Tees Valley with academic definitions of regional resilience. Thus, the section illustrates the importance of institutional aspects in this case study and presents a way of understanding the process of developing approaches to anticipation and management of economic change in this context.

The section discusses the approach in the Tees Valley through consideration of different components of regional resilience in policy, as identified in the analytical framework established through the literature review (discussed in section 2.4.2).

5.3.1 Firm and sector level considerations

This section discusses two linked elements of the analytical framework, firm level and sector level considerations, discussing the way in which stakeholders understand their importance and the way in which they impact public policy related to anticipation of economic change.

5.3.1.1 The importance of sectoral composition

Stakeholder interviews revealed significant differences in the extent to which policy makers consider policy related to anticipation of change to be relevant to all sectors of the economy. As discussed in this chapter there are specific sector development strategies for the Tees Valley and a distinctive set of industry strengths. The sector development strategies outline the way in which regional investment and support can be used to influence business growth through particular policies and practices in different sectors. Within this approach there is a hierarchy of importance based on the extent to which sectors are of regional, national, or international significance.

A key focus for stakeholders in anticipating economic change is the development trajectory of a sector that the region must focus on and invest for growth in key sectors. The underlying policy ambition being that growth increases overall resilience through increasing the ability of firms in the region to withstand economic challenge from competitors. Almost all stakeholders interviewed named the Chemicals and Process Industries sector as a world-class sector (the only such sector in the region) with significant current employment and greatest potential for economic growth.

Whilst all stakeholders identified the importance of key sectors there were some who identified important qualifying criteria which impact the extent to which growth of key sectors can increase or decrease the overall level of regional resilience. One stakeholder commented:

If we cannot embed key sectors and the major employers within then in the region, then we are wasting our time and simply growing capacity for other parts of the world to cherry-pick from our success. We need to ensure our key sectors have the full package that they need and that they grow to need us [the region] just as much as we need them. (Business representative)

The approach to sector development is formed around a more integrated idea of sector development expressed through the idea of the circular economy. The idea of the circular economy is part of the Strategic Economic Plan, which states that Tees Valley should be 'focused on minimising wastage, local sourcing of raw materials and reuse of

waste as new raw materials for other sectors' (Tees Valley Strategic Economic Plan, 2016-2026 p.17). This approach is based on existing sector strengths and assets with inward investment based on these factors.

In addition to such activity on linked sectors, most stakeholders identified that cross-sector issues such as digitalisation were also important factors which impact sectors to varying degrees depending on the current rate of digitisation and the potential for digitisation in the sector. It was noted that the UK National Industrial Strategy recognised the importance of this as part of the Made Smarter Review (2007), offering a potential way for the region to develop investment proposals which may be supported by national government. Maintaining global competitiveness through innovation or measures which can improve worker productivity and/or customer experience is also therefore clearly a central element in the approach to anticipation of economic change for stakeholders in the region.

Other sectors are noted as having the potential to grow and/or are important because of the number of jobs that they account for. There is also a sense in this respect that measures should be taken to facilitate modest growth and/or preserve current levels of output and employment. For most stakeholders this was identified as important, though representing a reduced focus for the regional partnership which tended to be focused more on higher growth opportunities. Furthermore, most stakeholders noted that a key driver for prioritisation of sectors was the perception of stakeholders that the public sector can positively influence economic output or employment in a sector, with some sectors operating to serve regional markets liable to grow or contract as a function of wider economic growth or decline.

What drives this prioritisation is not just a judgement based on the quality and potential of the position of the sector, relative to other UK regions and other countries, but also a bias toward outcomes which can be quantified and monetised. In this respect, stakeholders referenced that the ability to attract support and investment for proposals is often dictated by their ability to evidence these factors. In the UK this is formalised through the UK Governments Green Book appraisal guidance. This framework for measurement is therefore an important consideration in the policy making process for regional policy makers³.

³ The Green Book was revised in 2018 to take greater account of environmental concerns. However, the previous 2003 edition remained unchanged irrespective of any changes in the focus of national and regional government policy priorities. The guide and basic principles have existed for more than 40 years.

In this respect, established or mobilised policy and practice in the region may be the result of power imbalance between national and regional policy makers, with regional policy makers operating within fairly tight confines of powers devolved to them. Despite this there was relatively little divergence from the opinion that employment and GVA should be the metrics upon which sector development strategies are judged. In practice these metrics perhaps limit the sectors which are understood to determine regional resilience and limit the scope of actions taken by policy makers may in anticipation of economic change, with a concentration on inward investment / retention and the conditions to maximise these factors. Crucially in this respect the region needs the support and co-development of strategy with central government.

One example of this is that the sector development plan for the Chemicals and Process Industries sector can only be successful when accompanied by significant national investment in carbon capture utilisation and storage facilities in the North Sea. This is beyond the financial and regulatory capacity of the region to achieve. As such, the importance of the relationship with central government in developing the approach to anticipation of economic change is further demonstrated.

An additional element of the discussion on sectors related to the extent to which sector strategies have involved inward investment rather than indigenous business development. One interviewee stated:

Over-reliance on sector specific approaches as a means of attracting larger employers can lead us into problems that the North East has had before, a trickle-down system with most wealth leaving the region and our people less able to have any meaningful dialogue with the key decision makers in companies. (Trades Union representative)

Where there was consensus is that almost all interviewees highlighted that the type of inward investment and its relationship with existing sector strengths is a key determinant of the degree to which inward investment creates increased the ability of the region to the maximise benefits of economic change or, alternatively, may serve to weaken the stability of employment in the region. The discussion above does not mean that indigenous, small firm growth plays no part in the way in anticipation of economic change is conceived, but rather its role is relatively minor when compared to the possible impact that policy makers have through working with larger firms in specific sectors.

Notwithstanding the importance of national government strategy and investment assessment through the Green Book, the ideal of critical mass plays an important part in regional policy maker considerations. Through the process of policy discussion there is clearly an argument that scarce resources should be focussed on investments which build on strengths rather than diluting resources. As is noted above, the importance of existing industry and larger company interests are reinforced through this process (this issue is discussed more below in relation to path dependency).

5.3.1.2 Characteristics of firms operating in the region

Most stakeholders identified a focus of both regional and national policy on large company retention, often this refers to retention of inward investors and attraction of new inward investors. The rationale for this focus is that attracting such companies have the potential for significant direct employment and indirect employment through stimulating regional supply chain and associated employment. Conversely, closure or relocation of such firms can have significant negative regional impacts.

Indeed, there is a long tradition of foreign inward investment in the wider North-East region. This is understood to have had mixed results in terms of the extent to which it resulted in greater or reduced ability to mitigate negative impacts of economic change (Hudson, 2011; Pike et al., 2010; Tomaney, 2007), the current approach in the Tees Valley is therefore set within and influenced by the outcomes from this wider historical context.

The current focus is on attracting businesses which support the sector development plans, rather than an approach to maximise short term employment. As noted above, the nature of the development opportunities in the region facilitate the mobilisation of specific forms of policy to anticipate economic change, in relation to the available sites and premises there are opportunities that were not previously available when large firms were operating on major employment sites. One stakeholder commented thus:

We are looking for a particular type of investment. We're really trying to add some kind of resilience to the economy in the sense that we want there to be multiple industries on the site and we want there to be multiple operations on site, rather than one operation that is too big to fail (Local government elected representative)

However, this does still in practice lead to a focus on medium to larger employers. The importance of larger employers is established in UK national policy making, some stakeholders noted this factor is only increasing, evidenced during stakeholder

interviews through particular interventions made by national government in the region during discussions about the potential impact of Brexit, the example of the Prime Minister's intervention in Nissan in Sunderland in 2018 where she was seen to provide private assurances to the management at Nissan regarding access to European markets in a post-Brexit deal, which she would then not discuss publicly.

Regionally this has been a focus for policy makers because interventions with large companies can have a more direct impact on job creation or safeguarding jobs which may be at risk. Therefore, the package of inward investor attractors and retention measures that can be mobilised regionally is understood to be critical; matching that with existing supply chains is one of the keys to developing policy in anticipation of economic change.

Arguably this environment has developed because large companies command more media attention in the UK, along with their associated interest groups, such as the Confederation of British Industry. One stakeholder remarked that,

It is easier for larger businesses and their representatives to influence policy in the UK. Our politicians want the kudos associated with helping them to either remain employing people or taking on new staff... it is a bit more difficult for the local sole trader to get their views taken seriously. You can also see it in the press coverage that large firms or their organisations seem to get. They are experts in their business and their industry, but they are treated as if they have some wider insight on the economy that smaller firms and the public sector cannot access (Business representative)

Consequently, such interests have a more significant voice in the relatively informal way in which UK policy making decisions are made (the lack of formality in the roles of interest groups in UK policy making is discussed in the literature review and below in relation to stakeholder roles). The stakeholder interviews suggest that this is fundamentally a wider cultural aspect of the UK policy making environment rather than a regional issue, with large companies implicitly understood to have insight into the long-term economic interests of the UK or particular regions.

A frequent issue raised in the interviews was the high share of foreign ownership of firms operating in the Tees Valley, especially in the 'key sectors'. The Combined Authority estimate about eighty of the one hundred largest companies are foreign owned – so there is relatively little local decision making. A focus of policies and practices is relationship management of these firms to increase the prospects to retain

those firms and making sure they can grow; these firms also tend to be the companies with high GVA and higher wages.

There is an inherent weakness in this approach which policy makers recognise, but cannot really remedy, one interviewee stated:

Tees Valley has some very highly productive jobs, but they are few in number and fragile, fragile to international markets and investment. The big productivity gain jobs tend to be multi-national owned, capital intensive, chemical process, energy industries that are foot-loose and depend very much on international policy and what the UK's response to that is. (National government representative)

In a sense then the policy making environment actually retains the fundamental features which drove policy makers to seek to preserve the economic strengths of steel making in the region and is rationally formed around the evidence base on retention of current strengths.

5.3.2 Learning, skills and employability

This section discusses the way in which stakeholders in the region conceive the importance of policy and practices which address learning and skills needs of workers in the region in relation to anticipation of economic change.

Skills for specific sectors were recognised by all stakeholders as an important aspect of regional policy. The clear rationale being that there were growth opportunities in specific sectors that would not be realised without public investment in the types of skills required by business. All stakeholders referenced the fact that the opportunities in specific sectors were time-limited and existed in a competitive arena where failure to invest in a package of measures which skills were a key part (sites and premises, and business support) meant that the region would lose out on opportunities to build regional capacity.

Despite the recognition that there were specific skills requirements, it was stated by most stakeholders, however, that this should not be the exclusive focus at the expense of learner choice. Indeed, too narrow of a focus within the education system may reduce workforce agility or adaptability. Most interviewees stated that the public sector and education providers should provide flexibility so that workers can train/retrain in a wide range of skills and skill levels. One interviewee stated that the idea of the public sector 'picking winners' had long since been proven to be a bad idea.

In relation to skills planning, most interviewees highlighted that the existing business base was the most reliable starting point for investment in regional resilience. The SEP identifies the fact that the region will require up to 120,000 replacement jobs in the next ten years. Failure to address this issue (for business and the wider economy) represents a significant challenge for the regional economy. Regardless of new or emerging industries this challenge requires significant workforce planning and skills development which may not always be sector and business specific. One interviewee termed this the “everyday jobs challenge” and how the individuals undertaking these jobs can be future proofed as far as possible from long term unemployment through adaption skills.

However, where there is less agreement among stakeholders is in relation to the balance between the importance of skills for specific sectors and employability skills. Those representing the workforce, voluntary and community sectors expressed the view that more investment targeted toward individuals rather than companies was important for regional policy to facilitate effective anticipation of economic change, particularly skills and competency-based training and support for those furthest away from the labour market to provide them assistance to re-join the labour market. One interview put it thus:

Employability is seen as the poor relation at the moment, there is just not the support that there needs to be, there is also less discussion of it compared to what we had with One North East. (Voluntary sector representative)

One interview noted that without this type of investment being targeted to the lowest skilled employment and/or wealth gains would not reach them and that ‘*you would be relying on a form of trickle-down*’ (Local government representative). Among these interviewees there was also more explicit recognition that effective anticipation of economic change ultimately requires more investment in workers and individuals to increase their transferable competencies. This requires activity such as skills investment not designed to benefit specific firms or even particular sectors. As such, skills investment to support transition, for example, to low carbon forms of business activity, are identified as important.

This idea was linked to a view expressed by stakeholders representing the labour force in the region that it was incumbent on policy makers to provide assistance so that residents in the region were the beneficiaries of business / sector growth in the region, rather than commuters or in-migrants region. Though it should be noted that the main

concern for business representatives in this respect was that the ending of free movement through Brexit might harm the ability of businesses to attract the necessary labour. Therefore, the extent to which the idea that local people should be the beneficiaries of sector growth was not universally shared.

As was the case in relation to ambitions toward business growth, some stakeholders also mentioned attitudinal issues in relation to the low skills base of the region. In respect to skills one stakeholder stated that it is harder to get people in the North East region to engage in higher or further education, stating that they have lower levels of aspiration and ambition than might be the case in other areas of the country.

An important issue which influences the ability of individual workers to adapt to economic change was identified by a few stakeholders, the impact of national and European employment law. In this respect the way in which employers use fixed-term contracts and zero-hours contracts was highlighted. Use of such arrangements does not provide workers with the same rights as permanent employees (with regard to sick pay, maternity pay, and pensions). The increased use, particularly of fixed-term employment contracts, means that stakeholders understand that there is a higher share of workers in the region in less secure forms of employment since the great recession⁴.

In the absence of unilateral business decisions to do so, improvements in employment rights requires national government legislation to raise the minimum requirements. There are also fundamental differences between political parties in the UK regarding the extent to which regulation of business is a disincentive to investment, with the impact of Brexit providing the possibility that there may be further deregulation in the UK following the removal of EU regulations making this a current issue.

It is not within the scope of the powers held in the region to address this; however, it should be noted that representatives of workers interviewed identified this a fundamental issue when considering the types of factors which influence worker flexibility to change. Policy makers also reflected on the fact that there will ultimately always be a limit to what they can achieve because there are changes taking place

⁴ Data are not available for the Tees Valley level but in 2017, the TUC estimated that 122,000 workers in North east England, 10% of the working age population are in insecure forms of employment. This includes, temporary workers, workers on zero-hours contracts, and self-employed workers paid less than the national living wage (£7.83 per hour) and that this was a marked increase on the

within the economy that they may be able to observe but may not be able to understand, for example:

When you dig into why our GVA figures are the way that they are, it is in large part because we do not have enough people in work. So, we have to address both the challenge of getting enough people into work and moving them into better wages. However, over the last few years we have lost some high value GVA jobs, we have gained three times as many low value-added jobs. In the end the result is no change. So, we are not growing on that basis...we really need to get a much better understanding of why we have lost some of those jobs. It is not about the SSI Steel closure; the figures are post-that event. It is about the loss of jobs within companies rather than the loss of whole companies. What we do not understand is the extent to which this is about people retiring and employers choosing to leave vacancies unfilled or because of general company contraction, Brexit uncertainties or some other reason.
(Local government elected representative).

In this context there is therefore a limit to the evidence base available to policy makers and a limit to the extent that policy makers are able to address some of the potential change drivers, particularly if they relate to business attitudes. Indeed, this aspect was also addressed in relation to small business formation and growth aspirations more generally by another of the interviewees who commented that,

The difference between the North East and other parts of the North East and South is attitude. Firms in Manchester, Leeds or London tend to have the attitude that they want to be the best in the world. By comparison, firms in the North East will say that they want to be the best in the region, or worse, the best in Middlesbrough. They simply don't have the same ambition as other areas, doesn't matter what policy maker ambitions are...This is important because when we are trying to claim that we have world-class sectors, if you scratch the surface we have world class firms – with little market activity below that
(Business representative)

5.3.3 Infrastructure and place development

This section discusses the importance of physical development investment and its role in the approach taken in the region to anticipation of economic change. In this respect, most interviewees referenced the fact that they must provide necessary infrastructure to enable existing and future business activity (including transport and communications

infrastructure) and transport infrastructure which enables employees to access employment sites.

The role of such policy was mostly characterised as supporting wider economic and specific sector development plans. For example, the STDC development plans require very specific site development, including remediation works, in order to make the sites economically viable for new investors. Connected to these works are ideas of how new investment may increase the overall ability of the region to benefit from economic change:

We are really trying to add some kind of resilience to the economy in the sense that we want there to be multiple industries on the site. This makes it paramount that we develop the site in a way that makes this easy for multiple operators to establish themselves with all that they need. But when you look at the masterplan for the STDC we are clearly trying to attract a certain type of business and therefore high value-added job (Local government elected representative).

Indeed, most stakeholders interviewed stressed the fact that physical development has a role in the overall policy mix to ensure that the portfolio of sites and premises on offer in the region is attractive to inward investors and business expansions within the region. Another, though less frequently expressed view was that development should seek to better connect parts of the region; reducing isolation, or potential isolation, in the more rural areas of the region.

5.4 The approach to management of economic change: the SSI Steel closure

This section considers a specific case of management of economic change in the region and identifies the ways in which the specific case – the closure of the SSI Steel works was transformative in the approach to management and future anticipation of economic change. The experience of management of economic change in this case is also understood to have been important in shaping a renewed institutional environment.

Most interviewees stressed the transformative experience of the SSI Steel closure on their understanding of management of economic change. As discussed above, prior to the closure significant efforts were made across the 5-6 years before the final closure to protecting the industry (and supply chain) because there were so many people

employed in those traditional jobs. It was pointed out that this was a rational approach, especially considering that any alternative to such support may have been seen as ‘a case of wilfully crashing the economy’ (Business representative).

However, once the operation had failed the policy making environment was transformed (in the sense that the scope of possible policy options available became far wider for policy makers – as outlined overleaf). Possible options in this sense emerged around what could be done with the redundant sites and premises but also in relation to the sectoral balance and the influence that this could have on managing economic change.

Firstly, in terms of the site itself, the closure of SSI steel opened up the possibility to create significant numbers of jobs and the interviewed stakeholders all also noted the fact that the scale of job losses brought significant national attention on the region, and therefore significant resource with which to shape innovative responses. It is also the case that the experience of one large operator on the site had perhaps left policy makers open to the possibility that a future involving multiple operators might be more desirable, one interview stated that the experience of the ten years prior to the closure mean there was:

Definitely no desire to create what had existed before, this was an ambition shared by members, combined authority members, MPs, and also the officers. (Local government representative).

Another interviewee reflected on the fact that the overall ambition had not just changed for the site concerned but that there was a strong collective impulse to deliver longer lasting change for the area, even if this took some time to achieve:

People sort of came together and understood that it was about more than replacement jobs for all of those that had lost their jobs, we had helped with short-term solutions on the site before, this was about galvanising the area and saying what can we do to make the area more resilient, to make us more able to withstand changes and give people skills and confidence and ability to make a success of their careers in the area. (Higher Education representative)

The interviews also found that policy maker understandings of what should be the priority sectors are also linked to changing understandings of what policies and practices have the potential to provide greater regional resilience. Fundamentally it appears that this is due to a change in policy maker understanding of the extent to

which different sectors have the ability to account for greater proportions of employment in the region. Here there is also a link with the idea of greater diversification in the economy. As discussed above, the logic is that previously Tees Valley was somewhat over reliant on heavy industry which left the region vulnerable if there was a downturn in the market.

The ambition for greater diversification may be a reason that there is consensus among the stakeholders interviewed that the region is in a stronger (more resilient) position than when the steel works were functioning. As evidence of this the Combined Authority analysis states that for the first time, over the next 12 or 18 months, the Tees Valley will be a net importer of labour, suggesting that residents have not been able to take advantage of some of the new employment opportunities in the region. In this respect, however, some of the interviewees questioned whether the beneficiaries of current strategy would be those in the region or more economically advantaged, mobile, skilled workers from neighbouring local authority areas / regions.

It is also interesting when one compares the historical influence or legacy effects of previous partnership working and the effect that this can have on policy makers. This issue is also reflected on in Section 5.5 as it relates to the issue of path dependency. In terms of the policy making environment the impact of the SSI Steel closure in 2015 should perhaps be considered as a transformative one for policy making in the region. Prior to this event policy makers sought to keep the steel works operating, efforts that had been ongoing, and intensive in the ten years prior to the plant closure.

Once the plant had closed however the policy making environment changed. Policy makers were confronted with a policy choice in how they reacted to the closure, with two distinct proposals for the future of the site. These are outlined below, for ease of discussion they are referred to as Proposal A and Proposal B, the details are as follows:

- Proposal A: a proposal from an overseas operator to restart the blast furnace and the traditional method of steel making on Teesside. This followed many years of regional and national policy maker effort to preserve steel making in the previous form that it had been conducted by SSI and predecessor companies and did not fundamentally involve the use of new technology in the production process. This proposal was supported by UK national government because they felt that it offered an opportunity to introduce a new entrant to the UK steel market that would restart an industrial plant for which there was no obvious

future, given the size of the site and the significant impact that previous industrial processes had on the land. Furthermore, this plan would have the benefit of quickly creating hundreds of jobs in the area.

- Proposal B: This involved interest from more than one company exploring investment in the site, this proposal also involved restarting steel making but doing so through a newer production process, an electric arc furnace. This uses newer technology which can utilise recycled steel, rather than using virgin ore in the steel making process. As such there is a greater percentage of scrap recycled steel used in the process. Ultimately this proposal constitutes a more sustainable, lower carbon production process. This proposal also meant that the overall footprint on the site from steel production could be reduced, and following site remediation work, a range of other industrial operators could be brought onto the site.

The interviews with stakeholders involved in discussing these proposals reveal that there was a significant amount of policy discussion regarding the proposals, with a reluctance among regional policy makers to fully back the first of these two proposals (Proposal A) on the basis that there was limited belief that the proposal would offer a long-term future for steel making on Teesside. It was felt that the offer would result in precarious employment, especially given that the decision was being taken after the steel works had ceased trading twice in the previous four years.

In practice, the policy making process in this case was pursued to the extent that the inward investment proposal was investigated, and the investors were not discouraged from the inward investment. However, according to one interviewee:

There was a real feeling particularly among LEP members, but also among combined authority officers, that - we don't just want to restart the old banger, but we would like to go for a technology which is more futureproof and is more resilient (TVCA Mayor CoS).

However, the UK Government were more enthusiastic about this particular proposal. Their perspective on the most desirable economic outcome in this sense was taken through a wider geographical lens which considered the overall position of the steel sector in global terms and saw an opportunity to incentivise significant inward investment which had the potential to lead to further expansion and strengthening of the supply chain in the UK, potentially increasing the strength of the steel industry in the UK as a whole.

It is perhaps worth noting that the assessment of the policy options was not undertaken with both investment proposals at a similar stage of readiness, Proposal A was closer to investment readiness. Despite this most LEP board members were more in favour of pursuing Proposal B even though this was a more of a distant prospect when compared to Proposal A which could have led to the more immediate potential restart of the plant.

5.5 Explaining the way in which stakeholders anticipate and manage economic change

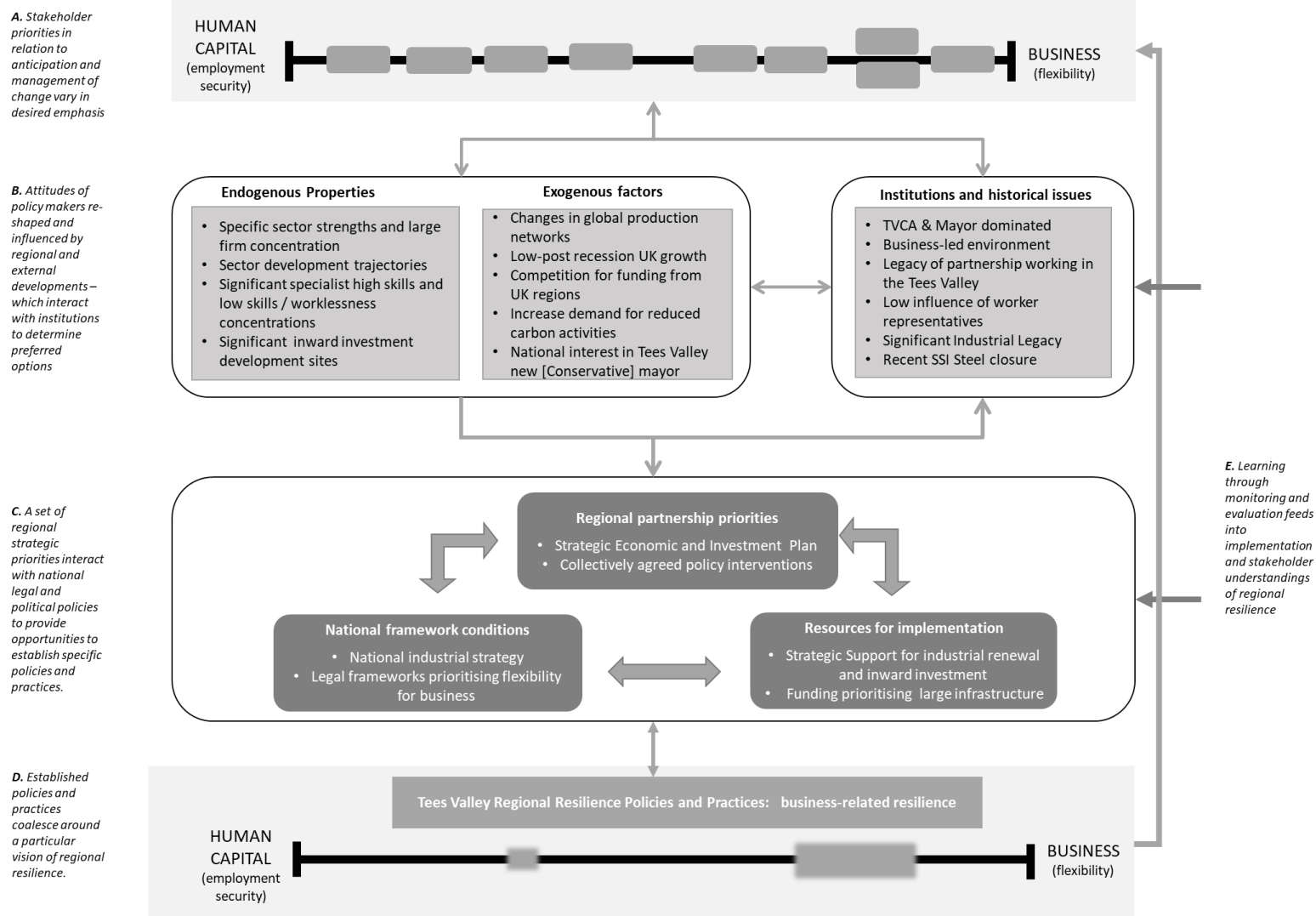
Figure 5.2 below uses the findings from the case study to develop a diagram which summarises the ways in which anticipation and management of economic change is understood by various stakeholders in the Tees Valley and the key processes through which these understandings are formed into an approach to regional resilience which places the primary concentration on providing the necessary to enable specific businesses to grow. The diagram has the following parts:

- A. represented on a horizontal axis are the varied views held by key policy makers in the region. This representation shows their views regarding where the concentration of priorities should be in relation to anticipating and managing economic change. The judgement here relates to information gathered at interview and document review using additional evidence produced by stakeholders and their organisations. This shows that there are a range of divergent views among stakeholders regarding where the policy emphasis should be approach to effectively anticipate and manage economic change. The diagram recognises the varying degrees of power and influence among regional stakeholders.
- B. Secondly, the diagram identifies some specific policy drivers and processes. These policy drivers both influence and are, to varying extents, targets of regional policy. These drivers and processes have been identified through the case study research as direct influence on policy maker perceptions of what is required to prepare for and/or manage economic change in the region. There are three categories of drivers and processes:
 - Endogenous regional properties which the regional policy may address, such as those related to businesses and enterprise; skills and employability; and investment in place development, including sites and premises.

-
- Exogenous trends and events which influence the extent to which the region can approach anticipation and management of economic change in its strategy. This includes macro change, such as change to global production networks and a low business growth environment in the UK which impact the extent to which there is public and private sector investment, and competition from other regions. Additionally, wider societal trends such as the transition to lower carbon producing forms of production, and national political conditions impact policy maker decisions.
 - Institutional issues such as governance structures and personnel in the region are also critical considerations. In this region a business-led approach is taken, benefitting from a partnership legacy but with significant concentration of power in the TVCA and mayor. Within this process the legacy of historical industrial development and the impact on sites and premises plays a significant role.
 - C. From these conditions, partners establish a range of priorities. However, through the process of policy discussion and investment discussions with central government, a range of disablers and enablers effectively provide a filter mechanism. This process involves the region as they propose and evidence priorities and investments but is ultimately decided through the national framework conditions and the resources (strategic and financial) made available to implement activities. In this case such resources come through national funding or through conditionally devolved European funding.
 - D. Lastly, the established policies and practices box provides an approximation based on the interviews and document review of the policy focus of in the region. This shows a significant concentration on delivering growth through business-focussed regional resilience. Skills-related support is aligned with an identification of business need, an issue which is set to become more embedded through the freedoms and flexibilities afforded to the region through the devolved skills budget.
 - E. Additionally, there are feedback loops which operate within this system. This reflects the fact that learning through evaluation and policy discussion influences the views of policy makers (box A); the way in which they interpret the various endogenous, exogenous, and institutional aspects of the region (box

B); and, lastly regional policy maker interactions with central government and the specific proposals that they put forward.

Figure 5.2 The process through which a business-focussed approach is established in the Tees Valley



5.6 Conclusions

This section outlines the main conclusions from the analysis conducted in this case study, reflecting on the contribution of the case to understanding regional resilience and the centrality of the institutional arrangements and the particular institutional environment in establishing the regional approach to regional resilience.

Analysis of the socio-economic context shows that there are significant challenges for the region, with a persistently lower employment rate, lower self-employment rate, and relatively lower skills levels when compared to national averages. Nevertheless, the region remains competitive in particular sectors, and has also maintained a higher than average level of employment in manufacturing than the national average, showing that businesses in the region remain competitive. The business base is characterised by a high level of foreign ownership and concentration of employment in larger employers, with a low levels of business start-up and fewer smaller firms per capita than the national average. A further challenge for the regional economy is the high proportion of low skilled residents and areas of concentrated worklessness.

As such there are a particular set of challenges that have shaped the views of policy makers regarding which policies and practices are most suited to anticipation and management of economic change, a priority that all stakeholders recognise as vital. There are, however, noteworthy differences in the conclusions regional policy makers have reached in relation to which policies and practices are most important for increasing the ability of the region to anticipate and manage economic change. It is these differences which provide insight into what regional resilience means for various stakeholders and through what processes in this specific context a particular business growth-driven vision of regional resilience is pursued.

The following sub-sections draw out the main conclusions from the case study, linking empirical findings with academic theory to identify the contribution of the case study to understandings of the importance of regional resilience and institutions in regional policy.

5.6.1 Institutions and the policy making environment

There is a strong history of partnership working in the region, though the current institutional arrangements are recently established. The TVCA and LEP are responsible for policy related to anticipation and management of economic change in the region. A Conservative Mayor was elected in 2016 to lead the TVCA and the newly

established TVDC. His relationship with the current Conservative government is understood by stakeholders to be a current opportunity for the region to capitalise on funding and strategic support for proposals that are well aligned to the UK Government industrial strategy.

Set within this environment regional policy makers reflect a feeling that the overall devolution settlement in the region is evolving. In terms of policy making, the relationship with central government has clearly undergone a process of change over the last five years, with an overall trend toward central and regionally co-developed strategy and investment plans, however with an emphasis on the region reflecting national industrial strategy to attract investment and strategic support.

The literature review reflected on a tendency in European regions characterised as increased dynamism in the relations between governments at various spatial scales within nations, a trend towards a 'multi-scalar governance' (Bache and Flinders, 2004; Sørensen, 2006; Piattoni, 2009). This case study in one sense certainly fits this trend. However, most understandings of the multi-scalar nature of policy making stress two distinct but linked aspects - vertical dimensions (the development of a complex set of relations between supranational, national and subnational governments), but also horizontal dimensions: the increased involvement of non-governmental actors (representatives from businesses, civil society organisations, labour unions, etc.) in social dialogue at various territorial levels (Bache and Flinders, 2004). As described above this case study demonstrates that the power relations within the region and between the region and national government are distinctly unequal, as such the suggestion that this represents a process of co-development may be somewhat overstated in this specific context. This raises the question as to what extent regional resilience is a function of regional policy, or whether resilience is a nationally and internationally determined (insofar as the region has levels of foreign ownership of large firms).

It is a widely understood principle that institutional solutions that perform well in one setting may be inappropriate in other setting without the supporting norms and complementary institutions (for example Barca et al, 2012; Rodrik et al, 2002). Therefore, there is no one-size-fits all approach to regional policy for all European regions. However, this case study raises questions of the legitimacy of regional policy that appears to be so nationally dominated and controlled through a relatively small group of organisations.

Consideration of institutions in this case study therefore provides a contribution to the discussion on regional devolution. As is noted at several points during the case study, the policy makers in the Tees Valley do not regard the current devolution settlement as permanent, with the possibility of devolution of further powers and funding. Therefore, it is interesting to reflect that the institutional arrangements are a dynamic part of the wider process of change, a central part of which is the idea of regional resilience.

Additionally, the case study identified that some stakeholders noted there is evidence of institutional isomorphism between approaches taken by LEPs in England, which further undermines the extent to which regional aspects and development opportunities are developed under the current approach national framework. This case suggests that this is perhaps inevitable given the regional (private-sector led) approach, which facilitates a limited set of powers to regional stakeholders and therefore generates different levels of power and enthusiasm among regional stakeholders depending on which policies and practices are understood to be possible.

Taking the idea of multi-scalar policy models, this provides the opportunity for consideration of the policy making process and devolution of powers within the region as well as the way in which powers and responsibility is shared between the national and regional levels. In this respect there is an overwhelming consensus that formulation of economic strategy can most effectively be undertaken in a manner consistent with addressing the wide range of stakeholder views and strengths and opportunities of specific regions and localities (for example, Barca, 2009, Commission of the European Communities, 2009; Hildreth & Bailey, 2014; Krugman, 1997; McCann & Ortega, 2015; Rodríguez-Pose & Gil, 2005).

5.6.2 The Tees Valley approach as a contribution to understanding resilience

The main focus of regional policy and practice in this case is on a business-led approach to regional resilience. The rationale is that support to key firms and sectors will facilitate wealth creation and employment growth which develops or preserves competitive advantage. The policy approach is therefore targeted in seeking to identify direct or indirect support that can work with existing and also emerging sector and firm strengths to increase their capacity to resist or maximise benefit from economic change.

This definition of regional resilience is the most prevalent aspect of regional policy. It is not, however, the only understanding of the possible approach to anticipation and

management of economic change held among policy makers. Some stakeholders would like to see a greater concentration on policies and practices that centre on more economic inclusion and skills development investment to increase labour market resilience (directly benefitting individuals) through public investment.

This approach would move away from the more direct support to firms and sectors to policies and practices which provide transferable skills (with more specialist skills for specific business funded by the private sector). In this case, views regarding the extent to which there could be a more people-centred form of policy in the region were notable among those that felt they were less in control of the policy making process than those that appeared to have greatest influence.

In this respect, policies and practices are not therefore a balanced reflection of a wide range of stakeholder opinions in the region, with worker organisations and those in the community and voluntary sectors playing only a minor role. As such, this case study outlines the way in which policy and practice are a reflection of the power relations within the region (as established by central government). Established policy and practice are not necessarily reflective of the rather diverse range of opinions of policy makers within the region. Table 5.1 presents the key features of the prevailing form of resilience in the region.

Table 5.1 Forms of regional resilience - based on Tees Valley case study

	Business-related resilience
<i>Key principles:</i>	<ul style="list-style-type: none"> • Public policy a mechanism to remove restriction to business growth • Interventions should promote global competitiveness of firms and sectors • Regional embeddedness promotes resilience
<i>Focus of regional activities:</i>	<ul style="list-style-type: none"> • Support for large business: pillar companies, key sectors, • Small firm support for high growth (established) firms • Specific business-related skills investments. • Direct innovation support for firm diversification. • Support targeted to existing (large) firm requirements
<i>Measures of regional resilience:</i>	<ul style="list-style-type: none"> • Growing regional GVA • Increasing regional employment • Embedding sectors/clusters in the region

Source: Author

The way in which evolutionary regional resilience and wider economic change is described by Simmie and Martin (2010) does share similarities to the sector development approach in the Tees Valley. The authors identify four dimensions to regional resilience: resistance, the degree of sensitivity or depth of reaction to an economic shock; recovery: the speed and degree of recovery from a recessionary

shock; reorientation, the extent of reorientation and adaption in response to recessionary shock; and, renewal, the extent to which the regional economy renews its pre-recession growth path or hysteretic shift to a new path. Most policy and practice in the Tees Valley can be aligned to the parts of this process, though this description does not fully account for why and how policy seeks to support or slow this process – and which factors prompt resistance and recovery rather than renewal in policy. Such factors can only be understood through consideration of the institutional arrangements and institutional environment, discussed below.

The literature review discusses the fact that previous research into regional resilience has been concerned with explaining the process of adaption, mostly in relation to business, sector, and industry life cycles approaches; isolating aspects and specific factors which may influence adaptability. Such issues as variety/related variety in sectoral composition; labour market characteristics; and path dependency are also important concepts in the firm and sectoral development evident in Tees Valley. Each of these issues are clearly evident in the way that policy makers conceive regional resilience and provide some insight into the considerations of established policy and practice in this case study. The next section discusses how institutional arrangements and the policy making environment filter and process these dynamics to establish the business-led approach to regional resilience in Tees Valley.

5.6.3 Implications from these findings

1. Academic definitions of regional resilience do not fully reflect the policy maker perspective.

This case shows an example of a strategic approach to regional development which encompasses engineering, ecological, and evolutionary approaches to regional resilience. Policy approaches to not, therefore, align to singular academic definitions of regional resilience. In this case, policy approaches are ultimately determined by the degree of business growth in the region. Important within this process is establishing policies and practices which increase the ability of the region to establish a sectoral profile which is most adaptable to economic change.

However, this case study also revealed that policy makers in the region have varied understandings of the priorities that they would like to pursue in relation to anticipation and management of economic change, with recognition that the focus of investment can usefully be understood in terms of where to place efforts – business growth or human capital.

2. Previous research measuring relative levels of regional resilience does not reflect the policy approach in the region

Much previous research has mobilised equilibrium notions of regional resilience to understand relative resilience through assessing employment and GVA change against a baseline (Fingleton et al., 2012; Frenken et al., 2007; Pendall et al., 2010). This approach assumes that this is the desired outcome for policy makers and that they aim for a return to previous equilibrium (level of employment or economic output). This can be the case for policy makers reacting to, for example, plant closures or specific economic shocks.

This case study shows that there are a wide range of policies and practices which do not have such aims. Furthermore, different opinions are shown to exist within the region in relation to what policy makers should actually collectively seek to achieve. As such, blanket approaches to measurement across multiple regions and countries does not seem insightful if one is seeking to understand the efficacy of different approaches and their effects over the long term.

To date, measurement of regional resilience has been undertaken in order to stimulate policy debate and contribute to understandings of the reasons for uneven development. However, it is perhaps more instructive if understandings of the strategic aims of regional policy and practice in regions more directly inform the phenomena that are measured. In this respect it is important to which reflect different policy approaches to the anticipation and management of change that may exist within the region. In this case that would suggest that a method of measurement of business-resilience and human capital-resilience would more closely align with stakeholder understandings and also usefully contribute to policy debate.

3. Institutions are vital in the process of adaption and the form of adaptability

Previous analysis has tended to view institutions in narrow terms, neglecting the place shaping role of state institutions. Bristow & Healey (2014) identify the fact that if one accepts the importance of this complex process of adaption and adaptability, the role of human agency and institutions in the process is vital. However most previous studies have privileged market, sector, and business drivers in explaining policy approaches related to regional resilience.

This case study suggests that institutional arrangements and the institutional environment are central in understanding policy approaches and outcomes related to

regional resilience. In this case study, mobilised policy appears to be largely a function of national and regional approaches to maximising economic growth rather than a developed consensus within the region.

This is important if the notion of regional resilience is to become more influential in regional policy, this case study provides insight into the specific process and aspects of institutional arrangements and institutional environments which must be considered if regionally specific forms of resilience can be pursued. However, regional devolution in this context is rather narrow and based on maximising specific opportunities.. The case study shows that the framework established by national government, provide a fairly tightly controlled set of conditions within which place-specific notions of resilience may be developed.

6 Southern Denmark case study

6.1 Introduction

This chapter presents a case study of Southern Denmark, providing a contrast to the previous chapter which was focussed on Tees Valley in the UK. The purpose of this chapter is thus to focus on Southern Denmark and examine the process through which key stakeholder understandings of anticipation and management of economic change are mobilised into specific policies and practices. The primary sources for the analysis are a document and data review undertaken in 2018 and 2019, and a series of interviews with regional policy makers carried out between March and July 2019. A full list of interviewees is contained in Appendix 3.

The chapter demonstrates the dominance of a consensus-based institutional environment in Denmark, characterised by mutual recognition of the legitimacy and role of employee and employer representatives in establishing approaches to anticipation and management of economic change. This environment has influenced the development of a set of institutional arrangements which distribute the powers and responsibilities among social partners and government at different levels.

The research reveals an approach market-led approach to anticipation and management of economic change, which focussed on investment in human capital to establish resilience in the region. In this context, employability of individual citizens through continual investment in their capacity to remain flexible and adapt to economic change frame public policy priorities related to anticipation and management of change. A market-led approach is determined through stakeholder understandings of the position of the region and its economy and labour market in relation to wider economic trends.

This chapter reveals a limited role for regional actors in preservation of previous development paths. The analysis also shows that whilst the specific forms of human capital investment may vary over time, the overall goal of policy at both anticipation and management stage, remains fairly consistent and operates within a settled national consensus-led framework.

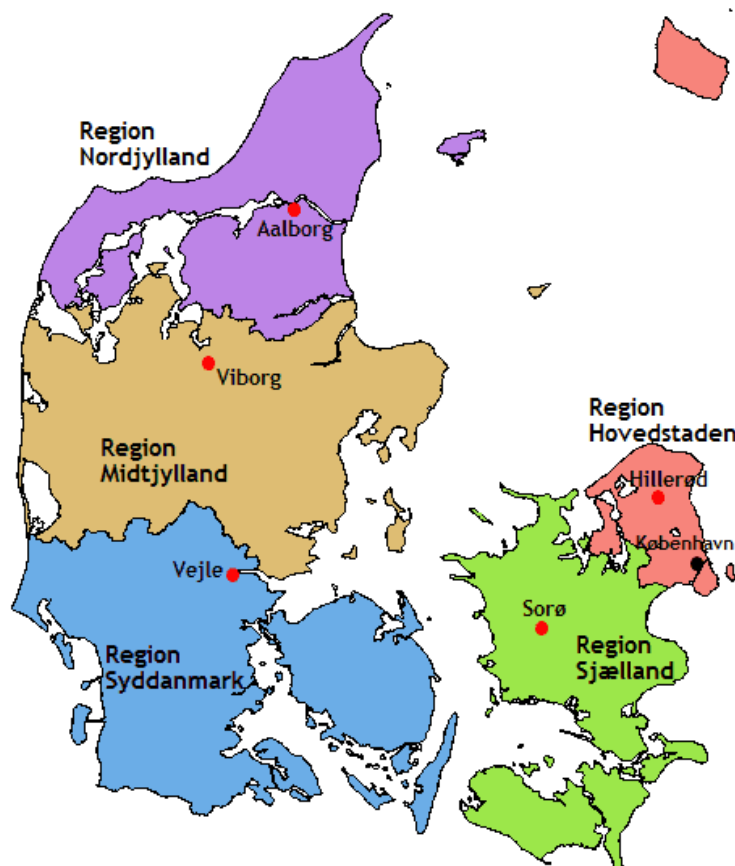
The chapter challenges the role of the region as the most useful unit of analysis for understanding policy and practice to anticipate and manage economic change, highlighting the dominance of national institutions in regional policy making, suggesting that the subordinate role played by regional policy makers is tightly framed.

6.1.1 The region of Southern Denmark

Denmark consists of five regions, within which there are two provinces (Funen and South Jutland), within the two provinces there are twenty-two municipalities. The main administrative units for the purposes of regional policy are the regions and municipalities; provinces are not administrative divisions and are mainly used for statistical purposes (for example, for statistical purposes the five regions are categorised as NUTS II regions and the eleven provinces are NUTS III regions). A map of the regions of Denmark is shown below in Figure 6.1, Southern Denmark is shown in green. A map of the municipalities of Southern Denmark is shown in below the map of regions in Figure 6.2.

There are three levels of government operating in Denmark, each of which influence policy related to anticipation and management of economic change (national, regional and municipality level). Section 4.2 discussed the way in which powers and responsibilities are shared between these different layers of government and the implications for regional policy making in Southern Denmark.

Figure 6.1 The regions of Denmark



Source: <https://www.mapsof.net/denmark-me/map-dk-regions2?image=full>

Figure 6.2 The municipalities within the region of Southern Denmark



Source: The Region of Syddanmark (<https://www.regionssyddanmark.dk/wm230808>)

The institutional environment, or the relationships between policy makers, in Denmark is characterised by a many more formal and consensus-based policy formation environment than is found in other European countries.

This approach to co-developing economic and social policy through social dialogue has a long tradition dating back to the September Agreement of 1899, where the trade unions and the employer's organisations mutually recognised each other as legitimate partners in the regulation of wages and employment conditions. Since then this tripartite approach has formally designed and implemented much economic and social policy at national and regional level.

The region of Southern Denmark borders Germany and, as such, is the gateway to Europe for Danish exports. The region has a strong tradition of employment in shipbuilding, the first shipyard was opened around 100 years ago. Compared with the national averages, the region has lower than average educational attainment, higher than average unemployment, and lower than average economic output per worker. This can be explained by the loss of the traditional manufacturing base but also the relatively higher economic growth in the service sector experienced in other regions than in Southern Denmark.

Regional Growth Agreements between national and regional Government in Denmark are established through dialogue between Regional Labour Market Councils and national government. There are eight such regional councils that monitor regional labour market policy and supports cooperation between stakeholders. Within this context the region of Southern Denmark has high levels of collaboration between groups of local authorities and the private sector. The approach to policy making is set within the overall Danish national approach to anticipation and management of economic change which actively promotes job change as part of flexible labour market policy.

This chapter continues in the following way: Section 6.2 discusses the way in which the settled institutional environment and consensus approach to policy development operates in the region to establish policies and practices; Section 6.3 reflects on the way in which stakeholders understand the process of economic change and the role of public policy in anticipation of this process. Section 6.4 presents a case study of the Lindo shipyard closure – demonstrating the way in which the approach to management of economic change was handled in the region. Section 6.5 discusses the process through which stakeholders in the region mobilise approaches to anticipation and management of restructuring. Section 6.6 discusses conclusions from the case study.

6.2 The policy making process in Southern Denmark

This section analyses the policy making process in the region and uses stakeholder interviews to understand the various factors which influence policy choices related to anticipation and management of economic change. This provides an understanding of the way in which the institutional arrangements and the institutional environment enable or restrict the policy approach. This section builds on earlier discussion in Section 4.2 which explored national context within which regional policy makers operate, discussing the evolution of institutional arrangements and the institutional environment.

The analysis demonstrates the way in which a combination of the particular institutional arrangements and institutional environment in the region facilitate a set of policy choices made by regional stakeholders to anticipate economic change and manage critical development junctures, reinforcing or restricting the ability of the region to adapt to economic change. In doing so this section contributes to understanding the drivers which are influence the approach to anticipation and management of economic change

in the region – an approach which is analysed in more detail in the following section (Section 6.3 and Section 6.4).

6.2.1 The influence of institutional arrangements on policy approaches

This section focusses on particular elements of the prevailing institutional arrangements in Southern Denmark which impact the way in which approaches to anticipation and management of economic change are formulated and delivered. The section uses the views of stakeholders to explain how institutional arrangements influence established policy, the following section considers the impact of the institutional environment.

6.2.1.1 The influence of European policy and funding on regional policy

The influence of European institutions and European laws does not appear to be significant in Southern Denmark when it comes to policy approaches to anticipation and management of economic change. Stakeholders frequently highlighted the fact that, whilst Denmark has relatively weak employment protections, meaning that firms can easily hire and fire workers, they exceed the minimum standards on most of the significant EU regulations related to labour market regulation (for example, working time directive, part-time and fixed term worker directive, and posted workers directive).

According to the regional authority, European structural funds have provided around 50% of the available regional resource since 2007. The remaining 50% share is generated from a tax of residents in the region to go to regional development. The regional authority cannot raise their own tax, the municipalities make the tax and the regional level must negotiate the budget. In practice, the regional allocation and broad spending plans for EU funding is determined through national government negotiation with the European Commission. It was noted by some interviewees that there were discussions with central government regarding the legality of how the region wanted to spend the money when compared with EU legal technicalities, but these conversations did not relate to the objectives of regional strategy.

The result of the fact that the region draws upon resource from nationally agreed European funds and locally generated funds from the municipalities is that the multi-scalar character of policy making in the region involves vertical dimensions – in the form of relationships / influences from national government engagement and a downward dimension -in the form for relationships with municipality level local government. In summary, European funding provides significant resource for the

region, but little in terms of specific policy direction. This is worthy of note as it challenges the notion, discussed in the literature review, that the multi-scalar nature of regional policy has increasingly led to closer ties between regional and supra-national levels.

6.2.1.2 The influence of national government on regional policy

The role of national government in relation to anticipation and management of economic change in Southern Denmark government is mainly concerned with establishing framework conditions within which businesses can most easily be established and create employment. This does not, however, extend to seeking to influence specific sub-national (regional and municipal) policy. As one stakeholder explained,

The basic idea is that the government sets up the legal framework and priorities but then the responsibility of how to turn this into reality is in the hands of regional and local government. The freedom which they have to do that is an ongoing discussion, how detailed should national government regulate what municipalities do has been the subject of a number of reforms

This aspect of the institutional arrangements is important. On the one hand the national framework conditions are understood to be spatially blind, with sub-national government afforded the ability to form place-based policy to meet local/regional development needs. However, as discussed in the literature review and Chapter 5 (national chapter), the national framework conditions established in Denmark provide a rather distinct set of conditions when compared with other European countries. Within this institutional set-up it is questionable whether policy makers in the region have the possibility to develop distinctively place-based approaches to anticipation and management of economic change (this issue is discussed further in Section 6.3).

Stakeholders interviewed all stated that at a political level, the regions were recognised as having democratic legitimacy as regional politicians were elected. Furthermore, the elected municipal mayors had their own legitimacy. As such, there was little restriction in terms of what the region could do exerted by central government. As noted above, the main policy discussions with central government were related to compliance with EU structural fund technicalities, specifically this related to the eligibility of various forms of match funding and was not related to regional policy priorities.

One of the key elements in this discussion was the fact that, as regional policy makers perceive it, there is not a significant resource provided to regions from national

government, and therefore there is little leverage. Where there is resource from central government that regions can influence expenditure, it is concerned with road and rail transport infrastructure spending. In this respect there is a competitive element between regions as they lobby government to try and attract finite investment to the region. In Southern Denmark, a key issue is rural isolation in the west of the region or poor connectivity between the urban centres. This is important in regional and municipal policy discussion but is not as prominent in national discussion which stakeholders in the region note tends to favour larger projects – such as the tunnel currently being constructed between Denmark and Germany.

However, where there are reforms, national government does seek to influence sub-national policy. Two examples of the key role that central government plays in regional policy was explored through the interviews:

- In 2017 national government made changes to the way that social security payments were administered. The scheme was set up so that local government was reimbursed by national government for the transfer income that they paid to unemployed persons those claiming sickness benefit. It is now made in the way that they get full refund for the first 4 weeks of unemployment spell, then 50% for the next 52 weeks, and then 20% after that. The basic idea being to incentivise local government to shorten the duration of unemployment and sickness spells.
- Additionally, incentives for active labour market support measures were altered so that municipalities now receive a 50% refund for the expenses they incur in providing wage fund subsidies and traineeships whereas they receive no national funding for various sorts of training activities that are established by the municipalities themselves. Here the idea is that in many cases there was local activities within the auspices of the municipalities that national government did not think were efficient or effective enough.

In both examples national government used its powers as the controller of public finances to ensure that regional policy was administered in a way that they thought would be most effective. This introduced greater conditionality for benefit recipients. The changes here did not fundamentally alter the purpose of the policy or the approach to anticipation and management of economic change pursued in Southern Denmark, but it is illustrative of the power of the national government in the three-tier system.

6.2.1.3 Place-specific factors which shape the regional policy making process

Despite the strong influence of national government, most stakeholders reflected that policy approaches to anticipation and management of economic change were the product of a negotiated outcome – the result of negotiation between local government, social partners, and central government. Indeed, it was noted that:

Every year the national government and the local government Denmark, discuss the allocation of resources between them and that plays an important role and therefore for industrial policy and labour market policy.

Interviewees noted that such regular policy discussion and negotiated outcomes are a "Danish habit" which is not restricted to big policy changes and not restricted to any one specific level of government.

At the time of conducting interviews, the institutional arrangements were undergoing a period of change, following reform proposals introduced in January 2019 (discussed above). This presents a challenge for the way that sub-national policy operates. Some stakeholders have noted that there may appear to be greater power over regional policy concentrated at national level, with a newly established national development board, seemingly established in a rigid way to prevent regions from establishing regional policy priorities, with some fearing it has the potential to result in a simple roll out of nationally set priorities into regions.

However, the Danish habit of consensus and negotiated policy development means that most stakeholders did not anticipate such significant changes in the approach over the longer term. Indeed, some interviewees characterise the changes to the institutional set-up in a different way, rather than as national government taking powers from the regions, it could be asserted that they have given more influence to Municipalities and encouraged them to work more closely together on regional economic development. One stakeholder asserted that the changes did not fundamentally change the sub-national institutional arrangements, stating that:

It can be characterised in the following way - should it be the region, or cooperation between municipalities in a regional context? In effect what will happen is that instead of the regional council, you will have a committee of mayors from municipalities cooperating with the ministry of industrial development – it is just a question of who holds the steering wheel, but the destination is still jointly programmed.

It is also the case that these arrangements are not yet settled and may change following a general election in 2019, currently there with active debate between political parties concerning the extent to which municipalities can effectively coordinate, given the high number of them and a perceived tendency to pursue their own interests.

It was reflected on by most regional stakeholders that developing the regional consensus in Southern Denmark took a considerable period of time. Indeed, the importance of consensus at regional level in policy making was stressed by most stakeholders interviewed. Of particular note in relation to the institutional arrangements was the fact, highlighted during the interviews that the process of establishing regional priorities took nearly two years, with a considerable amount of political discussion due to the large number of municipalities, each of which had their own ideas about what regional strategy should prioritise. The most important aspect in this respect was to agree between policy makers at municipal level the principle that there should be few and focussed regional priorities if the region were to make a difference using the limited funding available.

This is important because regional stakeholders each stressed that the institutional arrangements that were in place to develop the regional strategy enabled a process of assessing place-based factors, or endogenous regional economic and labour market issues, to develop a particular approach to anticipation and management of economic change. Notwithstanding the positive evidence gathered through the interviews, the process of co-development of policy which is identified, has the potential to lead to a form of isomorphism due to the fact that the regional level social partners that are involved in this process are, in effect, the same as the national level stakeholders.

6.2.2 The influence of the institutional environment on policy approaches

This section focusses on particular elements of the institutional environment in Southern Denmark which impact the way in which understandings of the way in which public policy should support anticipation and management of economic change are reflected in policy and practice.

6.2.2.1 Key place-specific factors which shape the institutional environment

Reflecting on the experience of the great recession, no stakeholder identified any changes to the overall approach taken to management of economic change. This is interesting given the scale of the great recession and, as discussed in the literature review, given the fact that the experience has resulted in a wide range of discussion

among social partners calling for various changes to promote more resilient labour markets, and/or promote more flexible regulation for businesses.

In this respect it is interesting to reflect on the fact that the consensus approach among government and social partners was upheld in Denmark. In the region and wider Danish economy there were significant job losses, followed by an equally sharp increase in employment (these data are discussed in more detail in Appendix 2). However, this was as stakeholders expected given the fact that Denmark is a small country with an open labour market in faced with such global economic change. This is particularly so given the approach taken to anticipation and management of economic change (discussed below in Section 6.3)

At the political level there are no significant tensions. Stakeholders noted the significant strength for the Danish Folkeparti (the nationalist Danish People's Party) in Southern Denmark, in South Jutland. However, despite this stakeholder noted that there is actually less conflict at the regional level than there has been over the last decade between political parties at national level. The fact that regional structures have required municipalities to work together to deliver regional policy is credited by most stakeholders as a critical factor in this joint working. There does not appear to be any evidence that regionally elected officials and those elected at municipal level have been in conflict over establishing or delivering regional policy.

In terms of the relationship between regions and national government, the interviews did not identify any significant tensions between national government and the regions and municipalities. However, there is some uncertainty at present regarding the extent to which the new sub-national arrangements, which give more power to municipalities will alter the institutional environment. It is possible that larger municipalities within regions may hold greater power and there may be pressures on some of the smaller municipalities to combine to form larger municipalities, something that would run counter to the dislike that Danes have for centralisation.

6.2.2.2 The roles and influence of different types of stakeholders in the policy making process

On the question of to what extent to regional partners have had an equal say or in the development of regional policy? Opinions of stakeholders are somewhat diverse. There is general agreement that the overall institutional environment mirrors that of the national level, with a strong role for social partners and a consensus-based system which tries to find solutions through constructive dialogue. However, the powers held at

regional level and the specific funded priorities have had the effect of reducing the influence of some stakeholders.

The most important stakeholders are those that propose, develop, and deliver regional policy. This is done by the regional authority, municipalities, and social partners (including business and labour representatives). The regional and municipalities have played a role in scoping and defining the types of policies that they would like to establish, with much of the detail then discussed by the mayors of the municipalities prior to more formal partnership meetings to make decisions.

Among social partners, due to the nature of the policies and practices introduced at regional level, the representatives of business have a very strong say in the content of policy that is developed. This is explained by one stakeholder that was involved in the set-up of the regional policy and structures in 2007 in the following way:

Early on it was clear that the regional strategy was first and foremost to create more prosperity and create more jobs. Therefore, the legitimacy was with the industry partners, they were always the most important in our discussions. The universities and schools were the means to make development in the industry, to support the requirements of the industry. That was the same when we did cluster organisation and innovation support, it was the industry that needed to decide which direction that we should go and how we should prioritise our actions

By contrast the role of the Trade Unions is relatively minor. This is explained by stakeholders as trade unions are more concerned with wider framework conditions and labour market policy that is decided at national level.

This varied degree of influence between regional partners is not a source of conflict, there is no significant call from stakeholders for a greater level of power in the policy making process, it is accepted that the partners involved are respectful of the views of a wide range of stakeholders. Furthermore, it appears crucial that there is a settled remit for sub-national policy in Denmark, one which respects the nationally maintained framework conditions and operates within the framework to address a relatively narrow scope of priorities (the scope of regional policy is discussed in more detail in Section 6.4 as it relates to the way in which stakeholders in the region frame the way in which public policy should be used to support anticipation and management of economic change).

This does not mean that stakeholders regard the policy making process and policy debate in the region to be benign, but rather that policy discussion takes place in a rather narrow set of possible outcomes. One stakeholder noted that to his recollection the university and the public sector were the only ones that really ever challenged the approach – but not a serious challenge, more questioning elements of specific plans, stating that:

They just wanted to slightly bend spending plans to benefit them a little more. Nothing fundamental because they could not rationally argue that, if you are trying to make prosperity and jobs in an industry, then the industry must be the most important part.

There are also clearly informal influences on the policy making environment of the region. These come from the larger companies that operate in the region, for example stakeholders noted that high tech manufacturers such as Danfoss or Velux in Southern Denmark have the ability to influence regional policy makers, due to the fact that they are large employers that can gain access to policy makers. Whilst the approach to regional policy is not to support individual companies (as is discussed below in Section 6.4), it is also important to note that given the relatively small size of the municipalities, such larger companies account for high proportions of direct and indirect employment in their areas. This means that, in practice such influences are of greater weight as local politicians consider investment plans, particularly physical development plans.

Such factors influence the policy making environment through influencing the municipalities at the political level but also influencing business representatives within the regional partnership.

As discussed below the approach to regional development is competitiveness-led and not focussed on individual firms, however the focus on industrial strengths at local level is built upon clusters of companies, with the largest voices in this process being larger companies. Similarly, the strong role for social partners in the process means that sector business representatives work within the process to promote particular policies that are favourable to their members. This is discussed in more detail in the following sections of this chapter as it relates to the way in which regional policy is mobilised within a set of national and regional institutional arrangements and a particular institutional environment.

6.3 Approaches to anticipation of economic change

This section discusses the ways in which key stakeholders interviewed in the region understand the way in which regional policy should be used to anticipate economic change and prepare the region to take advantage of opportunities for economic growth and/or mitigate against negative impacts of economic change

What emerges from this analysis is a consensus view which is based on maximising the adaptability of workers to economic change – a human capital-based form of regional resilience that is driven by stakeholder understanding of global sector developments situated within regional endogenous strengths and assets.

Reflecting on the findings of the previous section the key institutional aspects and processes and the way in which they influence the approach to anticipation of economic change is also identified. The section concludes with presentation and discussion of the way in which such properties influence the established human-capital form of regional resilience in the region.

The section discusses the approach in the Southern Denmark through consideration of different components of regional resilience identified in the analytical framework established through the literature review (discussed in section 2.4.2).

6.3.1 Firm and sector level considerations

This section discusses firm level and sector level considerations, discussing the way in which stakeholders understand their importance and the way in which they impact public policy related to anticipation of economic change

6.3.1.1 The importance of sectoral composition

The regional strategy for Southern Denmark, formulated between 2007 and 2008 was developed through extensive partnership consultation to consider previously developed municipal strategies and produce a focus of a new regional strategy. The strategy has remained the most prominent regional strategic document, it establishes a strong sectoral focus in the approach to managing economic change in the region.

Stakeholders outlined that the discussion on priority sectors took some time due to the fact that municipalities each sought to ensure that they gained from the priorities that were established. A key part of these discussions was the requirement to enable employment distribution over a wide range of sectors and prevent over reliance on specific sectors. In this respect the principles of resilience identified by Simmie and

Martin (2010), who state that distribution of employment in various sectors may lead to dampening effects on job losses during periods of economic contraction. Furthermore, they state that wider variety of sectors in an economy may also lead to more adaptive firm behaviours. In terms of regional resilience such approaches are identified as a potential benefit to resilience by a number of academic researchers (for example, Dawley et al., 2010; Frenken et al., 2007; Pasinetti, 1993).

The three sectors that the strategy focused on were energy, welfare/medical technologies; and the visitor or experience economy. The way in which sectors have influenced the approach to anticipation of economic change can most usefully be explained through the explaining the rationale for the choices of sectors included in the regional strategy, this is described in the table below. The table identifies some of the key elements of the approach to economic development in the region and also helps to illustrate the way in which stakeholders conceive was in which they can enable the region to take advantage of economic change, ultimately building in greater resilience.

Firstly, in relation to the energy sector, the two sub-sectors that were supported were offshore industry and energy efficiency technologies. These two areas were identified as particular industry areas in the region that were already established as successful industries. Furthermore, the overall outlook for the global economy in relation to these two sectors was positive, with demand for offshore wind farms and energy solutions globally forecast to rise. Given the region had existing, albeit nascent, strengths in these sectors, regional stakeholders chose to support these areas. The overall rationale here clearly was that regional policy should aim to support the growth in a portfolio of sectors based on previous economic strengths and assets combined with emerging technological capabilities and new market opportunities.

Table 6.1 Southern Denmark key sectors for development: status and rationale

Sector	Characteristics of the sector	Development priorities	Rationale for regional policy support
Energy	<ul style="list-style-type: none"> • Large companies • High employment • Existing supply chain 	Two main business areas: offshore industry and energy efficiency technologies	<ul style="list-style-type: none"> • Existing business strengths • Existing skilled workers • High value-added sector • Significant growth potential in an expanding market.
Welfare technologies	<ul style="list-style-type: none"> • Small, nascent sector • Low employment • Significant existing public expenditure in associated technologies 	High-tech medical technologies targeted to exploit the growth in older patients / consumers	<ul style="list-style-type: none"> • Growth potential with few dominant clusters • Strong existing research and development base • Significant growth potential connected to ageing society

Experience / visitor economy	<ul style="list-style-type: none"> Existing natural assets Low skilled employment Low level of employment 	Increased commercialisation of domestic and foreign visitors / tourism	<ul style="list-style-type: none"> Recognised natural assets Geographical proximity continental Europe Previous underinvestment / underexploited sector in the region
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Source: Own elaboration. Developed from Regional Strategy for Southern Denmark, 2010.

The priorities described above are consistent with some of the literature on regional resilience. Martin & Sunley (2013) illustrate how the concept of Regional Resilience has been linked with sector development cycles, noting that regional economic growth can be a function of life cycles of industries and technologies located therein – with industries and/or technologies going through a process of emergence, youth, growth and maturity. In this respect the concentration on the welfare technologies and the specific offshore and energy efficiency technologies sub-sectors within the energy sector can be understood as ‘emergent’ sectors building on regional assets.

There are some slight differences in the rationale for supporting these sectors. The welfare technologies sector was not as significant in employment terms as the energy sector; however, support was based on an analysis of existing strengths and market trends, albeit strengths that were not well commercially exploited in the region. In this respect the regional policy makers took a decision to support the sector based on analysis of demographic trends, an ageing society in the western part of the world and a shortage of labour and care facilities opening the possibility of developing and commercialising technological solutions. So, this decision was a more of a theoretical analysis of what was the scenarios in the welfare state and the healthcare sector, looking ahead 20 or 40 years. The region did not at that stage hold specific strengths in the industry, but it did have a large and high-quality public healthcare sector.

It is also worthy of note that the regional level of government in Denmark has responsibility for healthcare. As such the region could implement support, such as skills and technology investment, aimed at growth of the sector. Fundamentally though the approach taken with regards to the healthcare sector was similar to that made to support the energy sector – support for an emergent sector which could diversify the economy, exploiting existing assets in a globally expanding market, albeit from a slightly lower baseline position than in the case of the energy sector.

A slightly different decision was that to support the visitor economy, which was based on a belief in the region that improved visibility and accessibility of existing visitor attractions and the natural environment should be undertaken. By contrast to the other two main sectoral priorities, the ambition in this respect was more modest. Indeed, the

fact that employment in this sector was mainly constituted of low skills workers indicates that the sector plays a very different role in the regional economy.

What is also interesting is that the case of Southern Denmark also highlights how the process of adaption based on previous development can be supported. The process described by Martin and Sunley (2013) outlines how, as industries mature, in terms of either technology or markets, so they lose their dynamism and competitiveness, and as a result become less flexible: in short, their potential resilience, and hence that of the regional economy in which they are located, declines.

In this case study, elements of the former ship building industry (in terms of technical skills of former employees and physical sites and premises) evolved into the energy sector. Stakeholders interviewed for the case study explained that this was a partly a natural evolution but also one which was given significant policy support once it was established that there was a market for such development. This point is developed further in the next sub-section as it relates to the issue of path dependency.

One stakeholder termed the strategy to sector development as: *picking the winners once they had already won*, noting that one of the energy efficiency companies in Southern Denmark employed between 10 and 20 thousand people in the region (this issue discussed below in relation to path dependency). Crucially though this sector was recognised as a growing sector within which the region research and development strength. Likewise, the regional strengths in the healthcare sector and unexploited visitor economy sector were not controversial sectors upon which to base sector development strategy.

6.3.1.2 Characteristics of firms operating in the region

It is also important to note in relation to the sector development priorities that the place of these industries within an international context is very important in determining their potential to benefit from economic change. In particular the support for the energy and welfare technologies, the demand for these industries from outside of Denmark through export growth was a key support rationale. This is perhaps obvious given the relatively small size of Denmark compared to other European countries and the fact that Southern Denmark shares a border with Germany, the largest economy in Europe. Nevertheless, when considering the nature of the way in which the region seeks to benefit from increased growth in this case, it is explicitly open, global, and working with stakeholder understandings of market dynamics. This understanding of the role and

potential impact of public policy is important when compared to other regions and approaches to anticipation of economic change.

More fundamentally it is worth noting the fact that stakeholders in the region explicitly reflect the importance of the “regional” sectoral structure of the regional economy as a key factor determining regional resistance. Academic definitions of regional resilience explicitly identify the role of sectors as important in explaining varied degrees of resistance to economic change, ‘conventionally, [...] manufacturing and construction industries have been viewed as being more cyclically sensitive than private service industries, and the latter more sensitive than public sector services, which are often assumed to be largely immune to economic recessions’ (Martin, 2012: 13). The argument follows that regional sensitivity is the result of the combination of these sectoral sensitivities ‘weighted’ by the shares of these sectors in the regional economy, influencing the adjustment of the regional economy, its output and employment to cyclical shocks (Crescenzi et al., 2016).

However, in this case the way in which regional stakeholders understand the role of regional policy is rather more internationalist in outlook, with the region understood to play a role in larger sectoral growth and contraction. Indeed, the regional economy as part of a wider set of sectoral economies, each at different development stages and with varied spatial patterns is important in understanding the approach.

Within this context though the fact that the industry mix within the region may also influence the degree of employment and growth in the region is understood and provides the focus for regional policy making. The role of policy in managing economic change is highlighted in academic research exploring the impact of the great recession. For example, stringent employment protection regulations and less flexible labour markets arguably provided shelter to some regional economies from shocks in specific sectors: stable employment levels stabilize local demand, with productivity absorbing the shock (Groot et al., 2011: 447–449). However, the way in which stakeholders understand the role of regional policy in anticipating economic change in this case is that the global position of the firms and sectors in the region is not something that regional policy should be address but should rather more be concerned with supporting a process of adaption or new path creation.

6.3.2 Learning, skills and employability

This section discusses the way in which stakeholders in the region conceive the importance of policy and practices which address learning and skills needs of workers in the region in relation to anticipation of economic change.

An important aspect of the Danish model is the way in which, through relatively generous social benefits, high state expenditure in education and training, and wide range of active labour market policy to support unemployed persons, the focus of policy intervention is at the level of the individual citizen. Whilst, as described above, this investment if formed around policy makers' understanding of market forces, it is, nevertheless important to note that employability of individual citizens through continual investing in adaptability and facilitating adaption following job loss, characterise the understanding of regional policy as a means through which to maximise the benefit (for those in the region) from economic change.

In exploring the way in which regional policy mobilises this fact in Southern Denmark, it is noticeable that there was no single priority to invest in high or low skills, the form of investment is determined by what the sectors being supported require. For example, in the offshore industry there are both high skill and low skill workers, and in general, the energy sector jobs in the region are high skilled positions. The healthcare sector jobs in the region are made up or predominantly high skilled workers. On the visitor economy side there are a higher share of lower skilled workers. Therefore, taken the region seeks to provide a range of support at different levels and with pathways. This is possible given the high share of state expenditure in education and training.

Among the wider economy, at regional level the skills development needs of business are assessed through the Public Employment Service (PES) proactively working with companies to manage economic change / trading difficulties in companies. In the region the PES and the vocational education and training institutions regularly provide training, even before it is necessary to lay-off workers, and they may be redeployed within the company or elsewhere. This is typically the way that the PES and the vocational educational system work together.

The strong role for businesses in the design of training also leads to training being delivered by the PES and education providers which is accessed by both unemployed and employed persons. For example, a company may need to retrain existing staff and may also require new employees, so there may be a mix of employed and unemployed persons on a training scheme. This combination in programmes for employed and

unemployed has the potential to meet the needs of businesses and individuals. In following this model, the PES is also ensuring that unemployed persons are pursuing training with current employment opportunities.

The approach to anticipation of economic change in this respect is heavily predicated on a high-quality workforce delivering competitive advantage. One stakeholder used the example of wind turbines where Southern Denmark has achieved significant global recognition for quality:

In this region our companies have found through trading internationally that the quality of their workers and their products is high, international customers cannot rely on that quality coming from low wage centres such as China. For example, if you are a sub-contractor to Vestas, who produce wind turbines, you need to consistently produce a certain quality. It is not dependent on the cost of your labour. As labour costs play a low part in the business model, what we are seeing is near complete in-source or home-shore. At the same time, we started the robot adventure and mechanised production to reduce the labour costs.

The region has used this factor in the marketing of products and services and it is understood to be an element of the role of policy in supporting anticipation of economic change as it seeks to build the sectoral profile and strength through reducing the risk associated with production overseas through being more in control of the quality of output as they control the complete production process.

Despite the significant concentration on sectors in the region's approach to anticipation of economic change, other aspects of the business base in the region also play a role in the approach to delivering relevant policy. During the stakeholder interviews it was discussed that 90% of the companies in the region (and 70% of all employment) have fewer than twenty employees. Such companies often have different concerns and reduced capacity to deal with the type of developmental issues that larger companies may be able to consider. The business profile in the region therefore provides challenges in terms of understanding which are the most appropriate policies and practices determined by sectoral need, and also in providing such in the most useful way. As one interviewee described:

Very often training programmes need coordination of 2 or 3 from a range of companies, this gives some challenges as some of the companies are competitors. But we actually have quite a collaborative culture, compared to most countries as I understand it... in our region many companies that compete

collaborate on training and then also exchange staff, not directly or formally but informally.

Whilst regular coordination among businesses to ensure there is sufficient demand for education and training provision is perhaps an obvious necessity in a small region, the resulting collaborative approach to human capital was also recognised as a part of the regional approach to anticipation of economic change by some of the stakeholders interviewed. This factor also contributes to the overall approach in the region to developing policy to support economic change through enhancing employment security. Whilst this is described above as a key part of the design of the national framework conditions, it is something which is very much delivered at regional level.

Indeed this “collaborative culture” which may be understood as a relatively abstract notion, especially when one considers the fact that most discussion of the components of regional policy is based on quantitatively expressed endogenous and exogenous phenomena. Nevertheless, there is some theoretical basis to identify this as a potentially valuable aspect in the understanding of regional resilience. In discussing the value of related variety between sectors Neffke and Henning (2013) identify that their analysis suggests industrial variety will work better as a shock-absorber when the local industries require similar skills, as this increases the potential for regional labour matching. This aspect of the approach to anticipation of economic change is understood at both a policy level and among businesses in the region.

6.3.3 Infrastructure and place development

As is outlined above the approach to sector development in Southern Denmark is taken with explicit reference to previous development paths; sectoral strengths; and a judgement by stakeholders regarding the potential economic demand for sectors in the future. In this respect the concepts of path dependency/path creation provide important considerations in interpreting the understanding of anticipation of economic change established in the region. Understanding the extent to which these various elements contribute to the understanding of the role of policy in supporting economic change is important in understanding the policy approach in the region.

As discussed in detail in the literature review, Grabher (1993) distinguishes three forms of lock-in which are frequently used to understand some of the negative aspects of path-dependency within the policy making process:

-
- functional lock-ins, whereby dominant firms inhibit economic dynamism / diversification;
 - political lock-ins, whereby local leaders and businesses agreement ensures vested interests are protected / prevailing development paths preserved; and,
 - cognitive lock-ins, which relate to dominant ways of thinking preventing critical reflection on possible alternative development paths.

The empirical evidence suggests that each of these forms of lock-in actually play a positive role as drivers of diversification or branching in this region. For example, in terms of functional lock-in, the prevalence (or dominance) of businesses and business representatives in the policy making process is understood as a positive element, with a market-led approach central to the way in which the approach to developing policy to support to economic change in the region. Crucially in this respect though, stakeholders operating at regional level noted that no failing companies or industries are supported in the region. Therefore, it is clear that whilst market trends are dominant consideration in policy making, this is a macro-level consideration focusing on the framework conditions for growth rather than the needs of specific firms.

Similarly, political lock-in through the consensus lead approach which places tripartite agreement (state, business representative, and worker representatives) at the heart of decision making in the region is seen as a positive element of the Danish system. The way in which political-lock in is characterised by academic authors such as Grabher (1993) and indeed most academic researchers (as discussed in the literature review) is as a negative institutional characteristic which reduced place adaptability. However, in Denmark the nature of social partner relationships are such that stakeholder consider adaptability as a feature that is ensured through the political lock-in that they have established.

Important factors which stakeholders identify as enabling this phenomena in the political system are a highly unionised workforce in the region and the high level of businesses that are members of business representative groups. These factors are understood to be dynamic elements within the process which serve to refresh the worldviews of key actors and promote as one stakeholder remarked “an atmosphere of informed challenge of each other’s point of view” (TU representative)

Lastly, cognitive lock-in. In this respect the interviews identified that the prevailing world-view recognises the region as a part of the global economy, rather than a region

which can dominate in single industries it is part of a wide range of global industries and supply chains. Similarly, the place of the region as part of the European Union, albeit with a distinctive Danish way of doing things, and a border with Germany, promotes an outward looking approach to cross-border cooperation.

As such, whilst much of the literature on path dependency has characterised the phenomena as a negative one which prevents regional actors from taking policy approaches needed to promote more sustainable development paths, this is not the way that stakeholders understand the way it influences the region. Henning et al, 2013, note that path dependency can be viewed as a process where the current development path is dependent on its own history, but not to the extent that it eventually will, or can, return to a previous state (measured in terms of presence and employment levels in specific sectors). This, idea of path dependency is similar to the way in which path dependency is understood in the region, for example through the path branching of the energy sector which is clearly dependent on the skills and physical development assets of the previously established shipbuilding industry.

6.4 The approach to management of economic change: the Lindø Shipyard

This section considers a specific case of management of economic change in the region and identifies the ways in which the specific case – the Lindø Shipyard was used by stakeholders to develop a specific form of new path creation in the region. The approach discussed in this section is consistent with the key principles underpinning the approach to anticipation of change outlined in previous sections.

The literature review outlined an increasing interest in path creation and the role of various agents within the process (MacKinnon et al, 2019; Morgan 2017; Neffke et al., 2011). In this respect the typology offered by Grillitsch and Sotarauta (2018) to explore the way in which different forms of agency may operate to facilitate path creation at regional level is informative. Here it is argued that distinct forms of agency may shape regional development: innovative entrepreneurship (which focusses on firm-level dynamics and the importance of entrepreneurs in path creation); institutional entrepreneurship (a more gradual form of path creation supporting particular path creation agendas); and, path advocates, or place leaders, referring to leadership that delivers place-renewal through public-private partnership to develop a collective vision.

This case study shows that whilst these elements may be understood as distinct change drivers, it is perhaps the combination of these elements that is most crucial in establishing a particular approach to anticipation and management of economic change. In this case study the example of the closure of the old Lindø shipyard provides a useful example of the form of place leadership that is most evident in the approach taken in the region of Southern Denmark.

The shipyard provided an attractive site for innovative entrepreneurship to exploit the growth in demand for a particular industry – wind turbine. The site was attractive for this because it could provide suitable sites and premises with skilled labour nearby. However, what was needed, and what was understood to be cost-prohibitive for potential private sector investors was the physical development works required to develop testing and demonstration facilities. As such the development required public intervention to deal with market failure of cost-prohibitive set up costs.

This involved regional policy makers entering into direct dialogue with Siemens and Vestas, the main companies in the sector for wind turbines. In this respect it can be argued that there is an apparent inconsistency in the way that stakeholders describe the approach to regional development as being based on maintaining the framework conditions rather than considering the needs of particular companies. However, in this case the scale of the opportunity was understood in the region to be particularly significant as to warrant a more direct approach to creating the new development path.

Considering the last of the three elements identified by Grillitsch and Sotarauta, that of place leadership. This appears to be by far the most significant element of path creation in this case. Interviewees described the role that former Prime Minister Poul Nyrup Rasmussen supported the regional response to regenerate the old shipyard to a modern high-tech engineering and manufacturing facility for the manufacture of wind turbines. Whilst stakeholders asserted that this followed regionally-led analysis to establish the scale of the market opportunity and the existing skills base in the region, the role of the Prime Minister appears to have been pivotal in creating the necessary conditions to develop the new industry. The role for regional policy in place leadership in this respect was a supporting one to develop the business case and identify particular barriers to the wind turbine industry growing through industrialising production and exporting.

The framework of path creation is consistent in this respect with the example of the Lindø Shipyard. However, it does not fully account for the mechanisms which enabled

this approach to management of economic change to be implemented. The literature review considered the fact that a key part of discussion and measurement of regional resilience was the distinction between anticipation of economic change and management of economic change – with each prompting different conceptions and policy approaches. This was further examined in RQ 1 which considered the wide range of approaches, highlighting the difference between pre- and post-economic shock policy and practice.

In this respect Capoccia (2015) discusses the importance of critical junctures in comparative historical analysis as a way of understanding how seemingly entrenched factors (such as organisational norms, formal rules, public policy, and political economy) may be transformed as a result of specific events. This is an important aspect of institutional analysis which is relevant to understanding policy approach taken and the mechanisms through which various policy approaches to management of economic change become established.

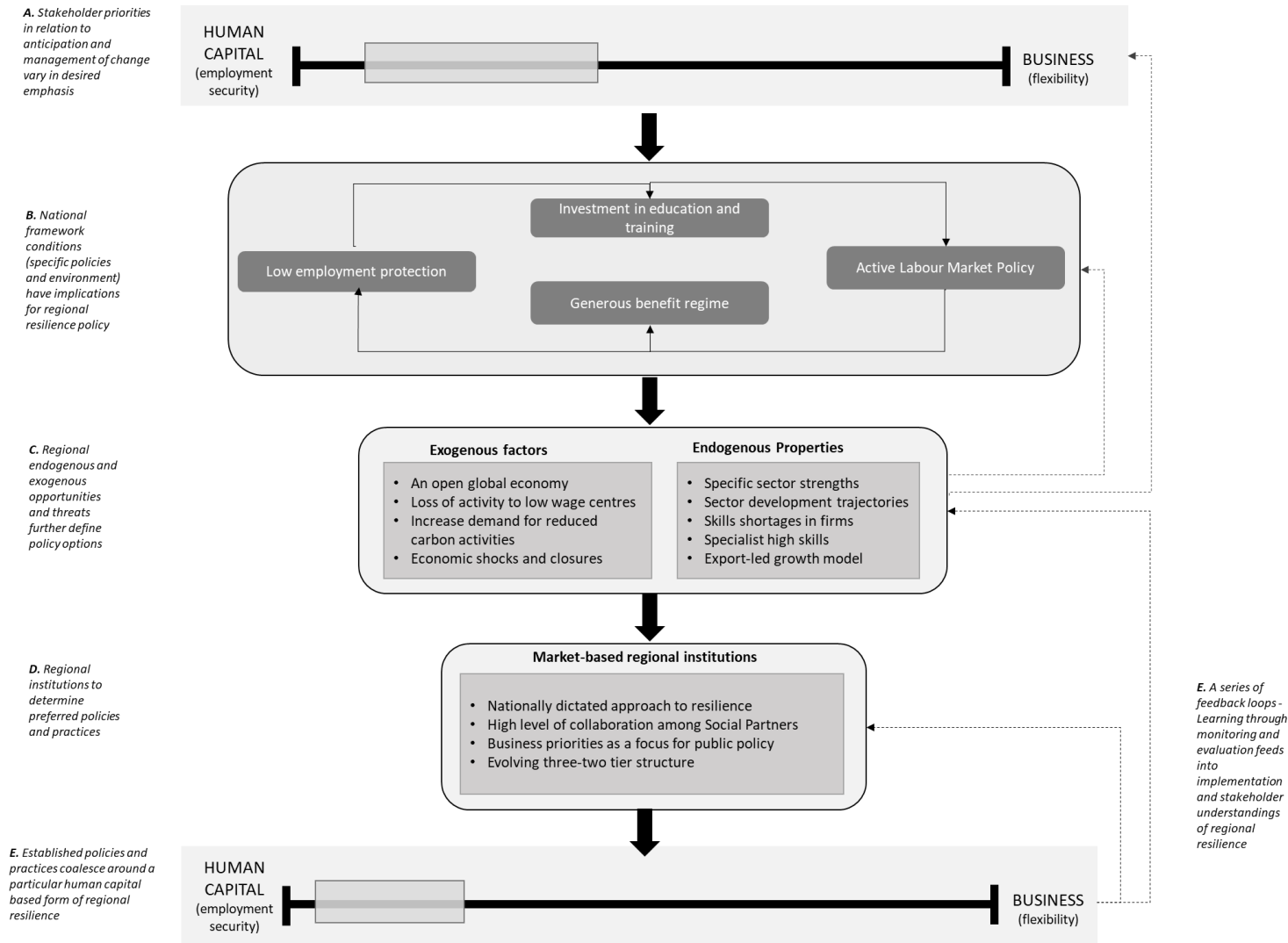
Where there is consensus in the academic literature is that there may be, periodically, critical transitions or regime shifts at system level within regional or local economies when normal cyclical processes are stressed creating ‘tipping points’ – moments when structures collapse, and innovations or new developments take off (a stage of “post-maturity” to use the process of evolutionary regional resilience described above by Martin & Sunley, 2013). Such moments are not always predictable phenomena, such non-linearity means that the impacts caused by small changes can be significant (Bristow & Healey, 2014; Scheffer, 2009). In the case of Southern Denmark, the collapse of the shipbuilding industry clearly provides such a ‘tipping point’ which provided the possibility for a particular form of place-based adaption. However, importantly, this is unlikely to have occurred in the absence of national political leadership, with the region in a supporting role.

6.5 Explaining the way in which stakeholders anticipate and manage economic change

The figure below uses the findings from the case study to develop a diagram which summarises the ways in which regional anticipation and management of economic change is understood in the region and the factors and key processes which mobilise the approach are mobilised. The diagram has the following parts (explained in more detail below):

-
- A. The varied views held by key policy makers in the region. This representation shows their views regarding where the concentration of priorities should be in relation to anticipating and managing economic change. This reveals a consensus in the viewpoints of stakeholders in relation to the extent to which regional policy should mainly focus on investment in human capital, or provide policy support at the level of the individual.
 - B. Identifies the most significant national framework conditions which impact the way that regional policy makers understand the way in which policy approaches should support the processes of economic change. These national framework conditions set the boundaries for regional policy and shape the shape within which regional policy makers operate.
 - C. A series of factors then influence regional policy. Firstly, endogenous regional properties which regional policy needs to take account of, in this respect the low unemployment and skills shortages represent important supply side issues, with sector development needs and opportunities also identified. Secondly, exogenous trends include macro changes, these are factors frequently identified by stakeholders, given Denmark is a small country reliant on exports. Additionally, the loss of younger and higher qualified individuals to the capital city presents a policy challenge.
 - D. Institutional issues such as governance structures and the policy making environment are also critical considerations regarding the possible ways in which anticipation and management of economic change can be addressed in policy. In this case study the institutional influences are profoundly shaped by national historic developments.
 - E. Established regional policies and practices box provides an approximation based on the interviews and document review of the concentration of regional policies and practices in the region – maximising the potential of human capital in the region to produce economic growth.
 - F. Lastly, there are feedback loops which operate within this system. This reflects the fact that learning through evaluation and policy discussion influences the views of stakeholders; the way in which stakeholders interpret the various endogenous, exogenous, and institutional aspects of the region; and also, the way in which regional factors influence national policy.

Figure 6.3 The process through which a Human Capital focus is established in Southern Denmark



6.6 Conclusions

This section outlines the main conclusions from the analysis conducted in this case study, reflecting on the contribution of the case to understanding regional resilience and the process through which institutional arrangements and the particular institutional environment in Southern Denmark influence understandings of the way in which policy related to anticipation and management of economic change is developed.

6.6.1 Institutions and the policy making environment

The importance of the historical development of policy making arrangements in Denmark is clearly evidenced throughout the case study. Respecting this settled form of policy making and achieving consensus through negotiation appears to permeate all policy discussion from national to regional and local. Stakeholders interviewed also referenced the fact that, to some extent, they see themselves as custodians of this institutional environment.

The strength of this phenomena in the Danish case is notable and supports the notion that institutions must be considered a central part of regional research if one is to fully explore the reasons for particular policy approaches and outcomes. As noted above, such an institutional environment makes it very difficult to envisage any other approach to anticipation and management of economic change other than that enabled through the national framework.

Such an institutional environment is not always ideal however and may ultimately lead to establishment of sub-optimal policy. Amin (1999) identified that, in regional research and policy action, the importance of the dominant 'mind set' or most dominant partners with a critical role in stifling or fostering the formation of a reflexive culture capable of promoting strategic goal-oriented behaviour has been overlooked. Furthermore Ormerod (2012) extends this through considering how psychology may influence institutions, identifying that, human behaviour is "intrinsically influenced by contagion effects or the behaviour of those that we are in contact with, typically our family, friends and colleagues". As such, he states that it is increasingly recognised that when it comes to economic matters that "our decisions depend on the responses of others and on what we anticipate these responses will be".

These are certainly not effects that any of the interviewees in this case study identified. The settled consensus in the region, and the fact that business representatives take a lead on developing regional policy is seen as within the boundaries of an agreed

overall strategic approach described in this chapter. Nevertheless, the issues raised in the preceding paragraph are important. Not least because they highlight the fact that institutional arrangements and particularly institutional environments are highly place specific. In this case study though stakeholders are clear that the benefits of the institutional environment are clear, a view they demonstrate with reference to the fact that the economic performance of the region during the great recession delivered the performance that each consider as optimum.

The importance of institutions may be clearly demonstrated through this case study, however the specific interest for this study is the processes through which institutions influence the approach to understanding what regional resilience means in specific contexts.

The approach in Southern Denmark demonstrates some consistency with the academic theory on path dependency and path creation. Given the economic progress and evidence of path renewal in the region there appear to be benefits from the negatively framed aspects of lock-in identified by Grabher (1993) such as functional lock-in, political lock-in, and cognitive lock-in. In this respect Hassink (2005) identifies that *institutional tissue*, formed around past development trajectories has the potential to create political lock-ins, meaning that policy makers and important stakeholders have sunk-costs in established or previously developed patterns which make it more difficult for them to back alternative approaches. In the case of Southern Denmark stakeholders asserted that the institutional approach was explicitly to prevent any such institutional tissue from binding future development trajectories to previous development patterns.

In this respect, the case study demonstrates the centrality of path dependency to the approach taken to anticipation and management of economic change. The significance of previous development patterns is shown to be important in understanding the approach to sector development. The literature review discussed that there is a significant body of research which uses path dependency as means to focus on the role of institutions and the ways in which they may act to either lock-in previous development paths or seek to enable new paths. This case study demonstrates the importance of previous development paths but does not clearly demonstrate that institutions should be seen as leaders in the process of adaption, or whether they emerge as support structures following the process (Rodríguez-Pose, 2016), indeed there is, on balance, more evidence from this case study to demonstrate the latter.

6.6.2 The Southern Denmark approach as a contribution to understanding resilience

The approach to anticipation and management of economic change in the region is understood to be determined by the ability of the region to adapt to sector trends. As such, it is recognised that a wide range of regional policy (human capital, business and enterprise, and physical development) are relevant to regional resilience, despite the term not being used explicitly in regional strategy documents. The focus for public policy intervention in relation to anticipation and management of economic change is firmly concentrated on development of human capital in the region. Set within this fundamental consideration is an understanding that the primary purpose of public policy is to ensure that human capital in the region meets current and future market need – as defined by business representatives in the region. As such the human capital investment remains market-led.

The analysis of the region suggests that the main role for stakeholders in relation to anticipation and management of economic change is to identify specific regional market failures that prevent people in the region being employed in existing and developing markets. The main way in which regional policy does this is through targeted investment in human capital that is directed by business representative organisations, particularly in targeted sectors, such as energy; welfare technologies; and experience/visitor economy sectors, as they seek to diversify the economic base. An important aspect of the approach to sector development is ensuring that the region has the required skills to enable businesses to adapt to changing market conditions. Significantly in this region, the unit of investment for public policy in the region is the individual rather than the business. This is an important distinction because other regions (as illustrated in the national chapter) present a more balanced approach to business support / human capital support, or indeed a greater focus on supporting businesses.

The approach taken in this region in relation to widening the sectoral base is somewhat consistent with academic literature which has stressed that regional resilience may be linked to variety of sectors in regions, acting as a shock absorber and potentially increasing adaptive firm behaviours. More widely academic research into sectors and sectoral demography has linked regional sector diversification with regional spillover effects that result in innovation as a wide range of firms take advantage of opportunities to interact.

Policy on anticipation and management is formed around changing stakeholder priorities

In Southern Denmark, the explicit focus is on developing adaptive capacity at the individual level so that that citizens may adapt to changes in demand for their skills. In one sense this is a clear rejection of the principles of equilibrist regional resilience, as policy makers do not seek to support current economic strengths but rather seek to develop emerging and nascent strengths, and also underdeveloped sectors which may provide future employment opportunities.

This explicit rejection of equilibrist approaches is quite different to most of the policies and practices identified through research to identify regional resilience policies and practices for question 1, most of which included some elements of equilibrist approaches, supporting individual firms. As such, the approach in Southern Denmark is more similar to evolutionary approaches to regional resilience (for example: Bristow & Healey, 2014; Boschma et al., 2017; Martin, 2010, Pike et al., 2016).

Notwithstanding this, there is perhaps some dynamism/inconsistency in the way that stakeholders understand anticipation and management of economic change, with events in the form of business closures and unforeseen opportunities, changing the way in which regional institutions understand the rationale for policy intervention - in the sense that such closures change the nature of policy opportunities and may also change prevailing views regarding future sectoral opportunities. Whilst the literature review demonstrated a growing understanding that human agency through public policy plays a significant role in approaches to anticipation and management of economic change, typically stakeholders in Southern Denmark stated that it was not the role of regional policy to challenge or seek to correct what they understand as market forces or market trends.

However, an important aspect in the approach to anticipation and management of economic change in Southern Denmark which determines policy responses is the extent to which regional stakeholders perceive there to be a form of market failure that they should address. Specifically, in this region the close of the shipbuilding facility at Lindo presented a moment at which the regional understanding of what a more resilient region would look like changed somewhat – as the sector was no longer understood to be a viable operation in the region. In this case a market failure in the form of prohibitive level of costs to entry in the energy sector, given resources required for remedial works needed to the old shipyard site. There was therefore a specific policy

intervention to address this issue and take advantage of a potential new development path / source of growth.

Sectors, value chains, and external links are vital in the understanding regional resilience

The literature review discussed that much of the research and analysis of regional resilience has been based measured with economic resilience identified by examining the region (or system's) overall economic performance over a period of time. Analysis of the determinants of resilience then typically focuses upon structural properties of the system. This is either through understanding how sectors shape the sensitivity of regions to economic shocks and their subsequent recovery (Crescenzi, et al., 2016; Hill et al., 2011; Martin, 2012), or how these structures exhibit distinct phases or adaptive cycles of change in line with complex ecological systems such as panarchy (Simmie and Martin, 2010).

However, the way in which regional policy in Southern Denmark frames the issue of regional resilience is through understanding the role of regional sector based endogenous factors and how they relate to exogenous development events and trends. Stakeholders frequently referenced that the region was a small economy and that they considered it to be part of, and subject to, wider global economic trends. As such they were far more concerned with the role that firms and human capital in the region can play in sectors and sub-sectors operating mostly outside of the region. The understanding of regional resilience is therefore place-based but heavily inter-connected with external processes of change. It could also be stated that this form of regional resilience supports path creation but does not itself exhibit "creative" properties.

As such, the overall regional sectoral structure is not the key element determining resilience but rather it is the assets within the region and the way in which they connect with other parts of the sector located in different parts of the world that give a better understanding of regional resilience. This is in contrast to much of the sector / cluster development policy that has been associated with regional resilience, particularly the wide range of studies of plant-closure studies (e.g. Bailey & Berkley, 2014). In this respect consideration of place-based assets and their contribution to resilience for relevant functional economic geographies may be the most useful way of conceptualising the issue – rather than considering entire regions as statistical unit of

analysis. This has not explicitly been reflected in previous research discussing the concept of regional resilience.

Change is managed at regional level within nationally established boundaries

In this case national framework conditions are designed as an integrated set of framework conditions each of which are interrelated, such that reform of one area may have a profound impact on another. These conditions are a dominant element in the way in which regional stakeholders understand the role of policy in anticipation and management of economic change.

In other regions of Europe this may be seen as a factor which potentially inhibits or restricts the potential for place-based regional development. Indeed the literature review outlined substantial discussion among policy makers and academic researchers in relation to the importance of place-based or place-neutral policy in economic development – identifying the consensus that formulation of economic strategy can most effectively be undertaken when directly addressing the strengths and opportunities of specific regions and localities (for example, Barca et al, 2012). Furthermore, the literature outlined a range of new forms of devolution which have accompanied such discussion⁵.

Set within this wider discussion, the dominant national framework conditions in Southern Denmark would appear to present a significant restriction on so-called entrepreneurial or deal-making processes that increasingly characterise regional policy in some countries. Indeed a central criticism of such place-neutral policy development has been a tendency toward isomorphic policy approaches, which result in policy makers at regional level being forced to take “similar, if not identical development strategies” which often result in the same or similar policy solutions being applied irrespective of wider regional and local contexts (Chien, 2008).

However, the approach in Southern Denmark has not led to conflict between the way that stakeholders in the region understand the policy approaches that should be taken in relation to anticipation and management of economic change and the national approach provided for under Danish national framework conditions. This framework stresses the importance of weak employment protection; high level of public investment

⁵ For example: Regional Growth Agreements, Growth Deals, Territorial Pacts, City Deals, Territorial Development Contracts involving different tiers of government (e.g. central, state, local) and/or different organisations and sectors (e.g. public, private, voluntary).

in education and training; a wide range of active labour market policy; and a generous welfare system.

The positive performance of the “Danish system” during the great recession is interesting when contrasted with other countries such as Poland, the Czech Republic, Slovakia, Italy, Spain, Latvia, Hungary, Sweden and Slovenia, each of which had similarly low levels of sub-national policy variance during the economic crisis (Crescenzi et al., 2016). The growth rate of Southern Denmark at emerging from the great recession was higher than that of these other countries – an indication that the national framework conditions in Denmark did not inhibit the economic recovery of the region. This provides some indication of the reason why stakeholders in the region have confidence in the overall approach.

Despite this evidence of strong recovery, the analysis in this case study clearly shows that the notion of the region as the central actor in regional resilience is problematic. Such is the strength of the national framework conditions and the degree of consensus among social partners regarding the merit of this approach, it is inconceivable that regional policy could divert significantly from this notion of regional resilience. As such, the scope for *regionalised* regional resilience policy to make a significant impact appears to be rather weak.

6.6.3 The implications from these findings

A number of implications stemming from the conclusions outlined above are described below.

1. The importance influence of national government institutions on regional policy is demonstrated in this case study. In Southern Denmark, the arrangements and environment are well established and provide the basis for regional institutions. In this context the freedom and flexibility afforded to regional policy makers to establish a *regionalised* version of regional resilience appears to be rather limited. Nevertheless, the case study reaffirms the centrality of this relationship in any consideration of a region’s resilience. Further whilst, institutional environment and the institutional arrangements are linked, the specific characteristics of each are distinct and equally important in regional resilience analysis.
2. The high relevance of the multi-scalar nature of regional economic development is apparent in this case study. Within the three-tier structure the regional level is somewhat vulnerable to decisions made at national and municipal level – as they

control powers and funding delegated to regional level. The policy making process and trade-offs made at regional level are therefore a function of prevailing power relations. In this region such power relations are well-established. However, changes in regional arrangements are likely to challenge this and may erode regional institutions, highlighting that vertical and horizontal power relations are important in exploring and understanding policy related to regional resilience.

3. Measurement of policies and practices related to regional resilience must be based on appropriate metrics. The analysis in this case identifies that the approach in Southern Denmark is focused on a market-based form of human capital resilience delivered at the level of individuals. As such measurement of resilience in this region should be undertaken in a manner consistent with this approach. In practice this means:
 - a. Meaningful comparison with other regions should recognise where there are similar or different approaches being pursued.
 - b. Outcome indicators used should take account of the policy objectives being pursued. For example, at individual level: employment rates, skill levels; and at business level: sector demography, skills shortages, sector value chain analysis.
 - c. Indicators which demonstrate the way in which this approach functions are also instructive. For example, level of in-work transfers as well reemployment of dismissed workers (the latter being the more common in regional resilience research).

7 Synthesis of case studies and reflections on findings

7.1 Introduction

This chapter provides a synthesis of the two case studies conducted for this study. The case studies focussed on regional policy in two different regions, examining the policy making process, analysing regional stakeholder understandings of anticipation and management of economic change, and exploring the process through which such understandings are formed into policies and practices. One case study concentrated on the Tees Valley and the other focussed on Southern Denmark, each of these regions have undergone significant economic and labour market restructuring over the past decade following the closure of previously dominant industries, steel in the case of Tees Valley and shipbuilding in the case of Southern Denmark.

Regional and national policy makers have faced a range of challenges in these regions as they have sought to facilitate or encourage new forms of economic activity to replace these previously dominant employers and their supply chains. The case studies reveal that these challenges are somewhat interconnected, with the policy options and responses inevitably a blend of a range of supply and demand side measures. Among these challenges are developing appropriate employment support for workers transitioning from previous employment to new sectors and/or occupations; addressing the physical development and regeneration legacy of previous activity to enable new forms of economic activity to become economically viable; and providing support for new enterprise and business development.

The ways in which policy makers have responded to these challenges and the wider impacts of the great recession provides evidence of the way in which the concept of regional resilience has been mobilised in policy and practice. This reveals two rather distinct approaches to anticipation and management of economic change.

- In the Tees Valley, a predominantly business growth-orientated focus is established, with significant business and enterprise-level interventions established in policy and practice at regional level. This provides direct support to companies, including directly to enterprises through skills development and physical infrastructure development targeted to large employers.
- In Southern Denmark, a distinctly human capital focus is pursued, with an explicitly recognition among stakeholders that specific businesses are not

supported. However, the form and focus of regional policy and practice is explicitly targeted toward market-based investment at the level of individuals.

The way in which anticipation and management of economic change is understood in these two different contexts is distinct and reflected in both policy discourse and in the types of policy and practices established at regional level. .

7.2 The importance of institutions in shaping approaches to anticipation and management of economic change

The literature review reflected on a tendency in European regions characterised as increased dynamism in the relations between governments at various spatial scales within nations, a trend towards a 'multi-scalar governance' (Bache and Flinders, 2004; Sørensen, 2006; Piattoni, 2009). This stresses two distinct but linked aspects - vertical dimensions (the development of a complex set of relations between supranational, national and subnational governments), but also horizontal dimensions: the increased involvement of non-governmental actors (representatives from businesses, civil society organisations, labour unions, etc.) in social dialogue at various territorial levels (Bache and Flinders, 2004).

However, these two case studies reveal the dominance of national framework conditions and significant asymmetry in power relations with regions. These aspects are explored in turn.

7.2.1 The importance of national framework conditions

The case studies illustrate that distinct differences between the national framework conditions influence policy making arrangements and environments within which regional policy is formed and delivered. These institutional aspects play a significant role in the policy making process, it is within these conditions that endogenous and exogenous factors are interpreted by regional policy makers. For example, the importance of the historical development of policy making arrangements in Denmark is clearly evidenced throughout the case study. Respecting this settled form of policy making and achieving consensus through negotiation appears to permeate all policy discussion from national to regional and local.

The strength of tripartite partnership working in the Danish case is notable and supports the notion that institutions must be considered a central part of regional research if one is to fully explore the reasons for particular policy approaches and outcomes. Such an institutional environment makes it very difficult to envisage any

other approach to anticipation and management of economic change other than the human capital-based approach that is enabled through the national framework.

There is greater dynamism in the influence of such conditions on regional policy in the case of Tees Valley. In this region, policy makers reflected on the fact that the overall devolution settlement in the region continues to evolve. In terms of policy making, the relationship with central government has clearly undergone a process of change over the last five years, with an overall trend toward central and regionally co-developed strategy and investment plans, however with an emphasis on the region reflecting national industrial strategy to attract investment and strategic support.

Consideration of institutions in this case study therefore provides a contribution to the discussion on regional devolution. As is noted at several points during the case study, the policy makers in the Tees Valley do not regard the current devolution settlement as permanent, with the possibility of devolution of further powers and funding. Therefore, it is interesting to reflect that the institutional arrangements are a dynamic part of the wider process of change, a central part of which is the idea of resilience.

7.2.2 The varied roles and influence of different policy makers

There is consensus in the academic research that formulation of economic strategy can most effectively be undertaken in a manner consistent with addressing the wide range of stakeholder views and strengths and opportunities of specific regions and localities (for example, Barca, 2009, Commission of the European Communities, 2009; Hildreth & Bailey, 2014; Krugman, 1997; McCann & Ortega, 2015; Rodríguez-Pose & Gil, 2005). This principle is not necessarily found operationalised in the policy making processes evident in the case study regions. Indeed, the guiding principle for regional policy structures would appear to be that they are highly reflective of national institutional arrangements and institutional environments.

The two case studies suggest that the distribution of power within regional institutional arrangements is far from equal and does not necessarily reflect the views of all stakeholders in mobilised policy and practice which seeks to anticipate and manage economic change. This is an important reflection in terms of understanding the extent to which approaches are consistent with existing definitions of regional resilience – which should therefore also look beyond study of established policy and practice in different regional contexts and include consideration of national context and power relations within regions.

However, it is interesting to consider to what extent regional policy makers perceive national dominance and asymmetric power relations to be problematic. In this respect the Tees Valley case study presents a situation where regional policy appears to be nationally dominated and controlled through a relatively small group of organisations. Some stakeholders noted that one effect of this is that there is evidence of institutional isomorphism between approaches taken by LEPs in England, which perhaps does undermine the principle noted above regarding inclusion of a wide range of stakeholder views and specific regional and local opportunities. This potentially undermines the extent to which regional aspects and development opportunities are developed under the current approach national framework and does appear to be problematic for some regional policy makers.

By contrast, in Southern Denmark, the settled consensus in the region, and the fact that business representatives take a lead on developing regional policy is seen as within the boundaries of an agreed overall strategic approach. In this context, stakeholders are clear that the benefits of the institutional arrangements and the institutional environment are clear, a view they demonstrate with reference to the fact that the economic performance of the region during the great recession delivered the performance that each consider to be resilient.

The extent to which stakeholders understand regional policy to be a fair reflection of their views may simply be a reflection of the extent to which historical development of power concentration has evolved. In the Tees Valley case study, the approach to anticipation and management of economic change is also understood to be a function of national and regional power concentrations rather than a developed consensus within the region. As such, the notion of multi-scalar regional development is perhaps overstated in this context. In this context, power is firmly concentrated in national government, despite significant statements of national policy which claim to support devolution or place-shaping powers to regional level.

7.3 Comparing approaches to restructuring with academic definitions of regional resilience

The two case studies undertaken for this study show that various elements of academic definitions of regional resilience, as discussed in the literature review and identified in the analytical framework presented in Section 2.4.2, are relevant to the objectives of regional policymakers.

However, the case study research also shows that the relevance and significance of different aspects of theoretical understandings of regional resilience varies in the two different frameworks established for anticipating and managing economic change. These aspects are discussed in the sub-sections which follow.

7.3.1 Understandings and approaches to fostering economic growth

The literature review established that the term regional resilience has become increasingly relevant since the great recession as a concept through which academic researchers have examined uneven development and the varied impact of economic change on regional economies and labour markets. Nevertheless, the term regional resilience has only permeated national and sub-national policy discourse in a limited way, indeed the case study evidence reveals that regional resilience is not explicitly used in policy documents. In this respect the overarching and explicitly stated objective for national and regional policy makers remains economic growth. It is through this prism that national and regional economies and economic assets are generally analysed and discussed, indeed discussion with policy makers revealed that stronger growing economies are understood be more resilient to economic change than weaker growing economies. As such resilience is important but is understood within an overall growth imperative.

However, it is not true to say to measuring resilience is simply to measure growth, despite this being the main element of academic research seeking to understand relative levels of regional resilience through predominantly equilibrist principles (as discussed in Section 2.2 of the Literature Review). The basic principles of the concept of regional resilience, as a desirable quality of a regional economy to anticipate and react to economic change are recognised as important by regional policy makers in each of the two case study regions. Indeed, these distinctions – anticipation and management related to resilience provide useful principles upon which to base key aspects of regional policy – though as discussed below the emphasis policy emphasis on these elements differs significantly in each region.

What is interesting is that the relevance of regional resilience may have increased as a result of the significant negative economic impact of the last decade, however the interviews with stakeholders in the case study regions revealed that, at regional level, the way in which the regions understand approaches to anticipation and management

of economic change (and policy related to regional resilience) has not significantly changed as a result of the great recession.

In the case of Southern Denmark, the recovery from the great recession demonstrated that the approach in the region, and Denmark more generally, functioned as policy makers expected (with framework conditions facilitating significant job losses followed by rapid employment growth when compared to other regions in Europe). In Tees Valley there was a little more diversity among stakeholders (discussed in more detail below) regarding the influences of the great recession on stakeholder understandings of policy related to regional resilience – though this was not necessarily reflected in established policy and practice (also discussed in more detail below). Nevertheless, in each of the case study regions the notion of resilience and in particular how the region may be more prepared for economic change through policy to adapt and manage change was identified by stakeholders as important. Such considerations are understood as important in policy discussion about what approaches should be taken and add value in better understanding the purpose and desired outcomes from established policy and practice.

7.3.1.1 Comparison of key features and policy focus

The case studies have shown that one way of understanding how policy related to regional resilience can be understood in policy terms is through distinguishing between the investment focus of policy. In this respect the way in which policy makers perceive policy related to resilience differs depending on perspective, with a distinction between business resilience and a human capital form of regional resilience identified through this study.

- Tees Valley: places strengthening businesses as a primary investment focus, investment in skills is a vital element of this but the approach also involves direct support for firms and sectors and seeks direct UK national government investment support to deliver this. An important policy focus is working with firms to maintain employment levels where possible; this is consistent with national government policy. The approach also seeks to attract foreign direct investment from specific types of investors and companies based on the development
- Southern Denmark: national framework conditions have established low regulation, allowing that firms may hire and fire workers very easily. As such resilience is determined by strengthening capacity of individuals to anticipate

and adapt to economy change as a primary investment focus. Such investment is informed by market trends to support the competitiveness of existing and emerging sectors and clusters.

The distinction between anticipation and management is important in understanding regional resilience. For policy makers, policy related to regional resilience is understood differently when one considers the development stage- adaption to potential or actual economic change and/or management of the effects of economic change.

- Anticipation: at this stage policy approaches are more likely to take on equilibrist forms, with policy makers intent on preserving current development paths, either through support to companies, sectors, or the workforce. This study identified multiple examples of such activities, for example, direct support to existing firms aimed at either short-term or long-term problem alleviation assistance to remain competitive, and/or to workers to update skills required in the sector in the future.
- Management: support to individuals that have been dismissed as part of company closures and support to companies negatively impacted by (typically) larger company closures. Such support is aimed primarily at reemployment through diversification of existing activities/skills and training / retraining in order to diversify into different occupations and sectors.

In each of these cases, anticipation and management, policy makers typically measure regional resilience related policy in terms of employment and business growth. Whilst this is similar to the way academic studies have undertaken analysis of regional resilience, the latter has typically not taken account of the different timescales that policy makers expect when taking these very different approaches. For example, policies and practices in relation to anticipation should have far more immediate effects than those aimed at management of negative economic change. Ultimately, however the impact and consideration of regional benefit of each of these policies should be measured over the longer term if one is to develop an understanding of whether approaches have indeed increased sustainability of employment and/or growth in the region.

A key aspect in the way that regional stakeholders understand policy related to regional resilience is through their interpretation of the combination of endogenous and exogenous factors and the extent to which they provide an opportunity for regional

policy to improve specific outcomes, typically employment and growth. Key regional factors in this respect are the business demography, including sectoral strengths, size of companies responsible for employment; the skills base in the region in relation to employer demand; and physical development issues, such as the supply and demand of suitable sites and premises for business formation, expansion, and inward investment.

These strengths or weaknesses are set within wider exogenous development trajectories which play a significant role in policy makers' assessment of required action. The basic calculation in this respect is to what extent the regional asset base in relation to business base, skills, and physical development attributes are competitive when set alongside competitor regions, including within their country and internationally. This is also the case when regional policy makers seek investment support from national government as they are in competition with other regions nationally. Set within this context, policies and practices related to regional resilience are understood as part of an overall competitive process through which regional policy makers seek to deliver growth and employment.

In addition to these factors it is also important to note that stakeholder understandings of policy approaches related to resilience must of course be understood within the wider context within which regional stakeholder policy positions are developed. Many of the stakeholders involved at regional level hold particular perspectives on regional resilience as they are essentially national stakeholder organisations operating at regional level

7.3.2 The dynamic nature of approaches to anticipation and management of economic change

A second important principle established through the case studies is that any useful understanding or application of a regional resilience policy framework must be grounded in place specific factors. As part of increased interest in place based policy and understanding the impact of localised policy intervention (discussed in Section 2.3 of the literature review), there is a need for greater understanding of the *what* and *how* in the concepts used to understand regional policy – i.e. what policy makers are actually trying to achieve, over what time periods, and therefore, how this can most effectively be analysed. Importantly, it should not be assumed that, as is the case in most regional resilience studies which have quantified relative levels of resilience that regions and regional policy makers are each trying to achieve the same outcomes (and

over a similar time period). This is a factor that is perhaps underappreciated in a majority of studies applying the concept of regional resilience which measure economic growth and/or employment for one of more regions over a specified time period.

If one accepts this premise, understanding the policy perspective, and extent to which it relates to theoretical understandings of regional requires consideration of regional institutions. The literature review demonstrated the range of development models operating at national and sub-national level within Europe, the case studies further demonstrated this analysis through deeper exploration of two distinct contexts (considered in more detail below). What is clear is the significant extent to which sub-national arrangements frame the possible approaches open to regional policymakers.

A further key distinction in relation to understanding regional resilience is that between anticipation and management of economic change. The case studies identified that approaches to anticipation and management of economic change can alter at these different points in time. The case studies actually provide an interesting contrast in policy approaches at the anticipation stage. In Southern Denmark, the approach of regional policy not supporting industries that they deemed “failing industries” and explicitly rejecting any idea of providing support to specific firms is in contrast to that taken in Tees Valley where a far more interventionist form of industrial activism is evident, in particular regarding the efforts made to save the steel industry over the course of several years.

These approaches are themselves a product of the institutional arrangements and environments within which they are developed. Importantly, policy, and thus the overall approach to anticipation and management of economic change in these two regions is dynamic, reacting to economic change (in these cases the closure of the steel industry and shipbuilding industries). Once these closures have taken place the policy options change, necessitating new possibilities and also potentially challenging the nature of policy maker understanding of target outcomes for regional policy. Set within this context the nature of policy related to regional resilience is highly place-sensitive and is itself determined by the economic change that it seeks to anticipate and manage. However as will be discussed in the following section, there are limits to the extent that policy maker perspectives in relation to policy related to regional resilience should be considered dynamic, given the fact that fundamental principles set within the institutional arrangements and institutional environments play a key role in mobilised versions of regional resilience related policy.

For policy makers in the case study regions, policy approaches are not based upon concrete set of principles regarding the ideal characteristics of the regional economy, in terms of form and function. Rather the approach to policy related to regional resilience is contingent upon stakeholder interpretation of prevailing economic and labour market conditions.

In this respect it is clear from discussions with policy makers that economic shocks at an aggregate economic level and specific business closures have the potential to alter the options open to policy makers. Additionally, legacy effects of former industries also play a significant part in the way that both case study regions formed policy to deal with significant closures of previously dominant industries, in the case of Tees Valley, the steel industry, and in the case of Southern Denmark, shipbuilding.

In Southern Denmark, the example of the closure of the old Lindø shipyard demonstrates the way in which physical development investment can also be used to support the human-capital approach to anticipation and management of change in the region of Southern Denmark. The shipyard provided an attractive site for innovative entrepreneurship to exploit the growth in demand for a particular industry – wind turbine. The site was attractive for this because it could provide suitable sites and premises with skilled labour nearby. However, what was needed, and what was understood to be cost-prohibitive for potential private sector investors was the physical development works required to develop testing and demonstration facilities. As such the development required public intervention to deal with market failure of cost-prohibitive set up costs.

This involved regional policy makers entering into direct dialogue with Siemens and Vestas, the main companies in the sector for wind turbines. In this respect it can be argued that there is an apparent inconsistency in the way that stakeholders describe the approach to regional development as being based on maintaining the framework conditions rather than considering the needs of particular companies. However, in this case the scale of the opportunity was understood in the region to be particularly significant as to warrant a more direct approach to creating the new development path

In Tees Valley, the impact of the SSI Steel closure in 2015 should perhaps be considered as a transformative one for policy making in the region. Prior to this event policy makers sought to keep the steel works operating, efforts that had been ongoing, and intensive in the ten years prior to the plant closure. Once the plant had closed however the policy making environment changed. Policy makers were confronted with

a policy choice in how they reacted to the closure, with two distinct proposals for the future of the site. What was developed was a strong partnership at local level to deal with the negative consequences of the plant closure, such direct and indirect unemployment and required land remediation work to ensure that the sites could be used subsequently for other business activities.

Interestingly the case study demonstrated that there were distinct development proposals put forward for the site. Firstly, one proposal from an overseas operator to restart the blast furnace and the traditional method of steel making on Teesside. Secondly, other companies sought to restart steel making through a newer production process, an electric arc furnace. Policy discussions then took place between central and regional levels of government. Ultimately these discussions illuminate the fact that each of the different spatial lenses through which each of the different levels viewed the issue resulted in each preferring a different solution.

There are clear links between how regional policy makers approach anticipation and management of economic change and some of the established theoretical definitions of regional resilience as it relates to path dependency and path creation. In this respect the evidence is mixed regarding the role and significance of policy. The literature review outlined an increasing interest in path creation and the role of various agents within the process (MacKinnon et al, 2019; Morgan 2017; Neffke et al., 2011). In this respect the typology offered by Grillitsch and Sotarauta (2018) to explore the way in which different forms of agency may operate to facilitate path creation at regional level is interesting. Here it is argued that distinct forms of agency may shape regional development: innovative entrepreneurship (which focusses on firm-level dynamics and the importance of entrepreneurs in path creation); institutional entrepreneurship (a more gradual form of path creation supporting particular path creation agendas); and, path advocates, or place leaders, referring to leadership that delivers place-renewal through public-private partnership to develop a collective vision.

In considering such aspects, regional resilience and the types of endogenous and exogenous factors identified in the case studies, it is possible to identify factors which restrict and support new path creation and potential forms of 'institutional entrepreneurship'. In Tees Valley, the balance of opinion suggested that the policy approach following the steel closure enabled such institutional entrepreneurship – the support provided to dismissed workers and long-term physical development activity on the former steel site – that would not otherwise have been politically possible. Indeed,

prior to the closure the only de facto approach policy makers felt could be taken was to support the steel works to remain operational.

Where there is consensus in the academic literature is that there may be, periodically, critical transitions or regime shifts at system level within regional or local economies when normal cyclical processes are stressed creating ‘tipping points’ – moments when structures collapse, and innovations or new developments take off (a stage of “post-maturity” to use the process of evolutionary regional resilience described above by Martin & Sunley, 2013). Such moments, described by Capoccia (2015), as critical junctures, are not always predictable phenomena but are transformative in understanding regional stakeholder understandings and mobilisations of regional resilience policy and practice.

7.3.3 Comparing regional policy approaches in case study regions with established definitions of regional resilience

The case studies established that in the case of the Tees Valley a business-focussed framework within which stakeholders anticipate and manage economic change is established. By contrast, in Southern Denmark a human capital-focussed framework based on a high degree of stakeholder consensus is established. This section contrasts the key features of the different policy approaches taken in case study regions with academic definitions of regional resilience.

7.3.3.1 Firm and sector level considerations

The regional economic and labour asset base can be understood in endogenous and exogenous terms. Endogenous factors refer to the internal attributes of the region, with exogenous aspects referring to external aspects. Whilst these two sets of issues are closely related, it is generally assumed that policy makers have a greater degree of influence over the former than the latter.

An important finding from the case studies is the centrality of sectors in stakeholder understandings of the impact of economic change and the regional capacity to react and adapt to change. This factor was evident in the discussions with stakeholders and also in analysis of the established policies and practices established in the case study regions. In some respects, the way in which stakeholders in both case study regions discussed regional resilience is fundamentally determined by the ability of the region to adapt to sector trends.

Typically sectors strength judgements made by regional policy makers are set within some form of value chain analysis which reflects stakeholder’s understanding of the

competitiveness of the regions sectors in a range of different spatial constructs appropriate to the sector/sub-sector being discussed (for example, in relation to neighbouring regions, national, European, international).

This is not unique to regional resilience. Kemeny & Storper (2015) reflect on the centrality and difficulty of such judgements in the research and analysis of regional policy, highlighting the need to consider different forms of regional specialisation – absolute, relative, share and quality – in regional analysis. This highlights the importance of understanding endogenous and exogenous aspects of sector development. For policy makers in the two case study regions, it is recognised that a wide range of regional policy (human capital, business and enterprise, and physical development) are relevant as influences on regional resilience – albeit they reach different conclusions regarding which of these aspects public policy should be concentrated on.

The way in which this sectoral approach to anticipation and management of economic change is mobilised in the case study regions differs in terms of the specific investment focus. For example, targeted investment in human capital an important aspect of the approach to sector development is ensuring that the region has the required skills to enable businesses to adapt to changing market conditions. The main focus of investment is therefore at the level of the individual. By contrast, a focus on business level resilience places a stronger concentration on direct engagement with businesses, particularly larger companies in the case of Tees Valley.

Regardless of sectoral composition, although obviously linked to the nature of sectors and their operational characteristics, the size and trading patterns of firms are important in understanding policy maker understandings of regional resilience related policy. In this respect issues such as business size, tendency to export, and the nature of business ownership were identified during the case studies as influences on the ability of the region to successfully anticipate and manage economic change and on stakeholder understandings of the most effective policy approaches in this respect.

Such considerations may be considered as a function of sectoral demography in the region – for example as some sectors are traditionally associated with greater average employment per enterprise, increased tendency to be foreign-owned etc.

Notwithstanding this, these particular aspects were identified during the case study research as important considerations for policy makers and significant influences on the way in which they approach regional policy and how they understand success.

An important aspect of the business profile in the case study regions was the fact the importance that stakeholders placed on increasing exports as a source of successful policy for the region. This was important in both case studies, through perhaps more so in Denmark given the small population of the country and the fact that the region shares a land border with Germany. Nevertheless, the position of the regional economy within the wider development trajectory of sectors and key trading networks is central to the understanding of anticipation and management of economic change in both of the case study regions.

Academic definitions of regional resilience recognise that situating the region within wider development circuits or ecosystems reflects the way in which regional economies connect and evolve impacting regional resilience (Mackinnon & Derickson, 2012; Martin, 2011; Simmie and Martin, 2010). The two case studies undertaken for this research and indeed the wider analysis of national policy (presented in Chapter 4, research question 1) would suggest that such an approach is indeed key to shaping perspectives of businesses and policy makers in the region, with future development trajectories (and resilience) of businesses, sectors, and the regional economy as a whole understood to be part of the wider networks within which they operate

It is also significant that these case studies equally demonstrate that policy related to regional resilience is only partly determined within the region. In one respect, national framework conditions act to shape regional policy and practice, and, at the same time evolving global trading patterns and the place of regional assets within international value chains shape the opportunities and threats to the region. Set within these realities, the metrics upon which policy related to regional resilience are based may be measured at regional level but the forces which shape outcomes are largely situated externally.

7.3.3.2 Learning, skills and employability

Skills development is an important aspect of regional policy in each of the case study regions. This finding reflects the fact that stakeholders understand the importance of investing in the adaptive capacity of the workforce to increase the ability of the region to anticipate and react to economic change. The way in which this understanding is mobilised in policy is quite different when the approaches in the case study regions are compared. These differences relate to the range of possible options for individuals and the timeframe within which policy makers measure outcomes.

The more human-capital led approach that is evident in Southern Denmark is focused on developing adaptive capacity at the individual level so that individuals may adapt to changes in demand for their skills. In one sense this is a clear rejection of the principles of equilibrist regional resilience, as policy makers do not seek to support current economic strengths but rather seek to develop emerging and nascent strengths, and also underdeveloped sectors which may provide future employment opportunities. As such, this approach places rather more emphasis on learner choice, enabling workers to train/retrain to gain new skills.

The approach is implemented based on specifically targeted learning programmes, established based on stakeholder understanding of sector growth potential. In this respect high level skills were needed for the energy and health sector growth in employment that the region sought to achieve, with lower skills needed for the development of the visitor economy. Of course, this is not the only type of skills investment made in the region, especially when put in the context of high national government investment in skills and active labour market policy. Among the wider economy, at regional level the skills development needs of business are assessed through the Public Employment Service (PES) proactively working with companies to manage economic change / trading difficulties in companies. As such the understanding of policy related to regional resilience is linked to that taken at national level toward skills and employability. Nevertheless, the approach here demonstrates how the overall approach includes different types of skills investment and investment in high, medium, and low skills.

As such, despite the fact that there is a clear interest among policy makers and researchers on sectors and their role in anticipation and management of economic change, it is equally important in the context of Southern Denmark to recognise that investment in human capital at different levels and degrees of involvement in the labour market (employed, unemployed, and inactive persons) is recognised as important as part of investment in the overall adaptive capacity of the region.

It should be recognised that skills development is a significant concern for regional policy makers and is understood as central to anticipation and management of economic change for policy makers in the Tees Valley. However, the overall approach taken in the Tees Valley takes place within a context of significantly lower national spending per capita on education in the UK when compared with Denmark. As such, the options available for individuals – both employed and unemployed persons are

rather more limited. It is within this context, and the relatively lower level of unemployment benefit (in terms of value and duration) that regional policy makers develop their approach to anticipation and management of economic change which is prioritises rapid return to employment and designs provision more directly to suit the needs of the existing business base.

Despite this general finding, the discussion with stakeholders recognised the importance of choice in the learning and skills system. In this respect allowing learners to make choices about their training and retraining needs is understood to be important. In this respect, a particular issue for the region was the vital contribution to the economy of medium skilled jobs and jobs in sectors that were not considered as growth sectors for the region and the UK was identified. However, despite these views it was understood that established regional policy was characterised by a more business-led than learner-led system.

In this respect it is also important to reflect on an important cultural aspect of the approach to anticipation and management of economic change which differs between the regions. Stakeholders in Southern Denmark stressed that there was a distinctly collaborative approach among businesses as regards workforce development. This is historically part of the culture but also formalised in policy. To receive public support skills development programmes must be delivered to support a range of firms and also usually a mix of employed and unemployed persons. Therefore, the approach to human capital directly incorporates demand-led elements aimed at enabling businesses to adapt to economic changes and fostering of nascent sectors. It is also focussed, particularly at the anticipation stage on skills development to meet aspiration of workers in employment to develop adaptive capacity at the individual level.

7.3.3.3 Infrastructure, place development and competition with other regions

The sense that regions are in competition is an important factor in understanding how regional policy makers understand policy approaches to anticipation and management of economic change. In this respect there are different two main forms of competition, competition from regions outside of the country, and competition from other domestic regions. These two aspects are discussed in turn below. Whilst the general issue of competition is clearly relevant to each of the case study regions, the character and industrial composition of the two regions means that this issue impacts them in different ways.

One clear impact on regional policy makers is the understanding that they need to sharpen the focus on how the offer to business in the Tees Valley may be differentiated from other regions in the UK and in other parts of the world. In part this has been a process of matching the overall asset base (the types of businesses, skills profile of the workforce, and physical development assets) with national policy and funding opportunities. In doing so, a clear element of the approach in the Tees Valley has been to deal with the industrial legacy of the past and prepare sites and premises which are suitable for inward investors, specifically in chemical process, energy intensive industries.

Internationally, this approach places the region in competition with regions around the world that are also seeking to attract such investment and places significant emphasis on regional policy makers preparing plans to attract and retain specific companies through initial site infrastructure preparation, skills development, and ongoing relationship management. Given the high share of large companies operating in the region that are foreign owned this is a model which is central to the maintenance of large employers in the region.

This approach is rather in contrast to Southern Denmark where inward investment from international sources is not a significant focus for regional development in Southern Denmark. The most significant aspect in this respect is development of human capital which provides competitive advantage for indigenous firms to either form, maintain profitability, or reform into new firms. In this respect regional policy makers understand that the region cannot compete on production costs with lower cost centres around the world, but they can compete based on product or service quality. The case study identified the way in which this approach in relation to the development of the wind turbine industry in the region, but it is also the way in which the general approach to development is undertaken in the region. In this respect the approach taken is to work with market trends and not to seek to provide either subsidy or special arrangements for particular industries based on an assertion that there is some form of market failure or certain industries are strategically important for national development purposes.

Competition among regions appears to be a stronger influence on policy approaches in the Tees Valley. In this respect the significance of competitor regions is a key aspect which shapes policy maker perceptions of the policy choices and their role. The region is covered by one of thirty-nine local enterprise partnerships operating in England, as such the geography covered is relatively small when compared with the previous sub-

national settlement in the UK, where there were previously nine regional development agencies in operation between 1998 and 2010. This has implications for the way in which the Tees Valley has to compete for resources from central government and also the potential role for regional policy outside of the UK, for example, marketing to potential inward investors, providing support for firms in the Tees Valley to export etc.

Within the UK, one issue for policy makers where the region has been in competition with other local enterprise areas has the focus on ensuring that resources allocated to the Tees Valley have been adequate to the challenge and proportionate to that provided to other areas. However, a more significant focus for policy makers has been on ensuring that the region has the powers required by policy makers to pursue regional policy priorities, this aspect is discussed below as it relates to institutional aspects which shape regional policy.

In Denmark, the competitive aspect between regions in relation to financial support from central government relates to road and rail transport infrastructure spending. In relation to this type of spending, regions each seek government support for projects which they would like to have delivered in the region. In Southern Denmark, a key issue is rural isolation in the west of the region or poor connectivity between the urban centres.

8 Conclusions

8.1 Introduction

Regional resilience remains a contested concept in academic research, with little consensus among researchers on its definition or contribution to the range of concepts used in regional research and policy. This remains the case despite significant increase in use of the term following the financial crisis of 2007 to 2008, and the ensuing Great Recession. Following these events, the concept of regional resilience was increasingly used to examine evidence of varied patterns of uneven development and to understand regional capacity to adapt to economic change.

Most academic research which uses the concept of regional resilience has focussed on endogenous properties of regions and the way in which such factors determine their ability to react to, and manage, economic change. There has been far less consideration of the way in which the objectives of regional policies and practices have sought to shape varied notions of regional resilience.

This thesis provides a contribution to the understanding and utility of the concept of regional resilience through addressing the disconnect between regional policy and academic theory and discourse related to regional resilience. More specifically, the thesis helps to deepen the understanding of regional resilience through exploring the policy making perspective to understand the extent to which academic ideas are reflected in policy and practices which seek to anticipate and manage economic change, and how specific institutional contexts influence such approaches.

The literature review developed an analytical framework which identified issues and specific features regional policy related to aspects of regional resilience, as defined by academic researchers. The framework compares and contrasts the ways that these different ways of conceptualising regional resilience impact on policy; the framework considers factors such as: understandings of the dynamics of change, firm-level considerations, the role of innovation, learning and skills, supporting infrastructure, the main agents of change, and the scope and role for public policy. Through a review of policies and practices and interviews with regional policy makers, this thesis has demonstrated that the concept of regional resilience is highly relevant to the challenges faced by national and regional policy makers in Europe, despite little explicit use of the term among policy documents. However, it is equally clear that among policy makers there are multiple, inconsistent, and, often seemingly contradictory, approaches to

anticipation and management of economic change aligned to multiple different understandings of regional resilience. These approaches are the result of the interplay of different factors, such as endogenous properties but are equally determined by exogenous concerns and approaches which are determined by national level decision makers. The way in which these approaches relate to researcher definitions of resilience is thus revealed as a fluid and place-contingent concept.

The thesis developed an analytical framework to illustrate what academic definitions of regional resilience may look like when applied to policy and practices related to anticipation and management of change. The thesis then demonstrated through analysis of regional policy that the concept of regional resilience can be used to provide a novel way of understanding the focus and form of regional growth policy. Analysing regions in this way could be useful in design and implementation of devolution settlements which seek to facilitate effective place-based policy making. More fundamentally, this insight encourages policy makers to consider the kind of regional growth they seek, the importance of different forms of resilience to it, and therefore, who should benefit from policy interventions.

8.1.1 Research Questions

The following specific research questions were addressed in this research:

1. To what extent does the focus of national labour market policies and practices related to anticipation and management of economic restructuring reflect existing definitions of regional resilience?
2. To what extent do regional policy makers understand, anticipate and respond to economic restructuring in ways that reflect existing understandings of regional resilience?
3. To what extent do regional institutional arrangements and institutional environments influence policy approaches to economic restructuring at regional level? How does this relate to existing definitions of regional resilience?

Two approaches were used to answer the research questions. Firstly, a review of national framework conditions and regional policy and practice in the UK and Ireland and Nordic countries was undertaken. The analytical framework developed in the literature review was used to identify relevant policies and practices for this exercise. Secondly, case studies of the Tees Valley in the UK and Southern Denmark were undertaken to investigate regional approaches to anticipation and management of economic change,

focussing on the process through which institutional arrangements and institutional environments work to shape prevailing approaches and assessing how these approaches relate to academic understandings of regional resilience.

The following section of this chapter discusses the thesis conclusions in two sub-sections. Firstly, empirical conclusions are outlined, reflecting the extent to which national and regional labour market policies and practices explored through this research relate to established definitions of regional resilience. Following this, conclusions relevant for academic theory are discussed, demonstrating the way in which the policy perspective developed in this research contributes to the conceptual understanding of regional resilience, specifically discussing the features and significance of institutional arrangements and institutional environments in the process of anticipation and management of economic change and how this relates to established definitions of regional resilience. The chapter concludes with implications for policy makers and issues which could be explored in further research which are drawn from the experience of conducting the research and the thesis conclusions.

8.2 The empirical contribution of this research

8.2.1 The relevance of existing definitions of regional resilience for regional policy

Previous research that has used the idea of resilience to present regional analysis has largely focused on explaining structural influences on the way in which regional economies have adapted and evolved, with significantly less consideration of the activities, actions, and motivations of those seeking to actively shape this development. As such, the relevance and utility of the concept of regional resilience among policy makers have remained relatively underexplored questions. This research has constructed an analytical framework which has closed the gap between research and policy in order to try and establish what different forms of regional resilience used in academic research look like in policy and practice related to economic restructuring.

The research has established that there are a wide range of such policies and practices which are consistent with academic ideas of regional resilience. However, it is concluded that overall policy maker approaches to anticipation and management of economic change, when compared with academic definitions of regional resilience are somewhat fluid, place contingent and shaped by (as they seek to shape) regional development paths. A critical aspect in this respect that was identified in both case studies is the way in which policy makers understand and interpret sector development

cycles and the role of regional assets within global value chains or production networks, with such understandings playing a key role in framing prevailing forms of resilience policy.

A significant body of academic research following the great recession focused on the concept of regional resilience as a potential way to explain the uneven impact and subsequent recovery from economic contraction. Despite this widespread use of the concept there remained no settled definition of the term, rather two main ways of understanding regional resilience emerged in academic research – equilibrist definitions and the evolutionary understanding.

There have, however, been some researchers who have fundamentally disputed the utility of the term. As discussed in the literature review, Pendall et al. (2010) assert that the fuzziness of the definition of regional resilience limits its value in regional analysis. Similarly, Hassink (2010) identified a number of shortcomings which limited the added value of the concept when considered alongside the range of conceptual tools already available for researchers. Hassink's main objections were threefold, firstly, the tendency for the conceptual and analytical focus of regional resilience to emphasise equilibrium and multi-equilibriums, secondly, the neglect of state, institutions and policy at several spatial levels and, thirdly, the neglect of culture and social factors as issues which impact on varied levels of regional adaptability.

This thesis demonstrates that rather than being too abstract for application to regional policy, the varied definitions of regional resilience are reflective of a range of established policy and practices. Furthermore, the evidence showed that equilibrist principles play a significant role in the way in which many policies and practices aimed at anticipation of economic change are framed. This despite the fact that most academic research asserting evolutionary approaches as being a more accurate way of understanding the issue of resilience. Section 8.1.1.2 explores the way in which existing definitions of regional resilience relate to established policies and practices in more detail.

8.2.2 Comparing policy and practice with established definitions of regional resilience

A range of academic studies have investigated regional resilience in tightly defined ways, either through case studies, or more commonly quantitative analysis which effectively mobilises equilibrist notions of resilience (for example, Bailey & Berkeley, 2014; Cellinil & Torrisi, 2014; Crescenzi et al., 2016; Cuadrado-Roura et al., 2016;

Davies, 2011; Dijkstra et al., 2015 Đokic et al., 2016; Doran & Fingleton, 2016).

Typically, such studies have defined resilience as a region's ability to resist change or return to a previous development path. This thesis has demonstrated that approaches too regional policy share aspects of these equilibrist applications of the concept of regional resilience but that they are also share the rather more fluid aspects of evolutionary understandings of resilience.

The thesis identified specific factors which influence this fluidity of approach to regional resilience. Key aspects identified in this regard are the perception of policy makers on the intervention stage – whether it is considered that they are managing an economic shock, major plant closure, or other form of economic contraction, compared to measures aimed at anticipation of economic change (this factor is expanded on in more detail below and in Section 8.3). Additionally, the analysis demonstrated that approaches to resilience established through policies and practices vary depending on the extent to which they aim to achieve long or short-term impact. In this respect, engineering forms of regional resilience are typically established to achieve shorter term impacts following economic contraction or plant closure. By contrast, ecological and evolutionary forms of resilience are typically established to achieve longer term change or reorientation of previous development paths.

Unpicking this fluidity of approach highlights the importance of understanding specific regional context and institutional arrangements and environment. In this respect the forms of agency discussed in the literature review and case studies that were identified by Grillitsch and Sotarauta (2018) are particularly instructive. The authors identified different forms of agency – innovative entrepreneurship, institutional entrepreneurship, and place-leadership. Each of these aspects are useful in the context of the policy approaches (related to regional resilience in both Southern Denmark and the Tees Valley). In relation to innovative entrepreneurship and institutional entrepreneurship, there is arguably more evidence for this in the Tees Valley, where the business-focussed model promotes more active engagement with individual firms and entrepreneurs to identify and support market opportunities and the institutional environment and relationship with central government promotes a “deal-making” environment which can lead to new powers and responsibilities. The dimension of place leadership is more clearly evident across each of the two case studies with a range of different actors seeking to exhibit place-based policy within a long-term strategy. The key difference in this respect being the settled consensus-led approach

established in Southern Denmark and the rather more centralised and informal power relations in the Tees Valley.

As such they should be seen as important aspects in developing a deeper understanding how regional resilience can be used by policy makers to discuss their approach (in terms of both policy content and approaches to delivery) . The prevalence and significance of these different aspects across different regions and national contexts requires in-depth analysis to establish, but they appear instructive of the ways in which different forms of agency can play a role in shaping approaches to resilience.

The analysis of case study evidence demonstrates that a region's approach to anticipating or managing economic change at any given time may indeed consist of approaches that are consistent with multiple academic definitions of regional resilience. Figure 8.1 below illustrates a simplified way in which policy and practices can correspond with equilibrist understandings of academic definitions of regional resilience. In this case the term development path is most easily understood as that of a particular sector and can be taken to be the steel industry in the case of Tees Valley or the shipbuilding industry in Southern Denmark. However, it can also be extended beyond specific sectors to understand overall regional economic change (at a more macro level).

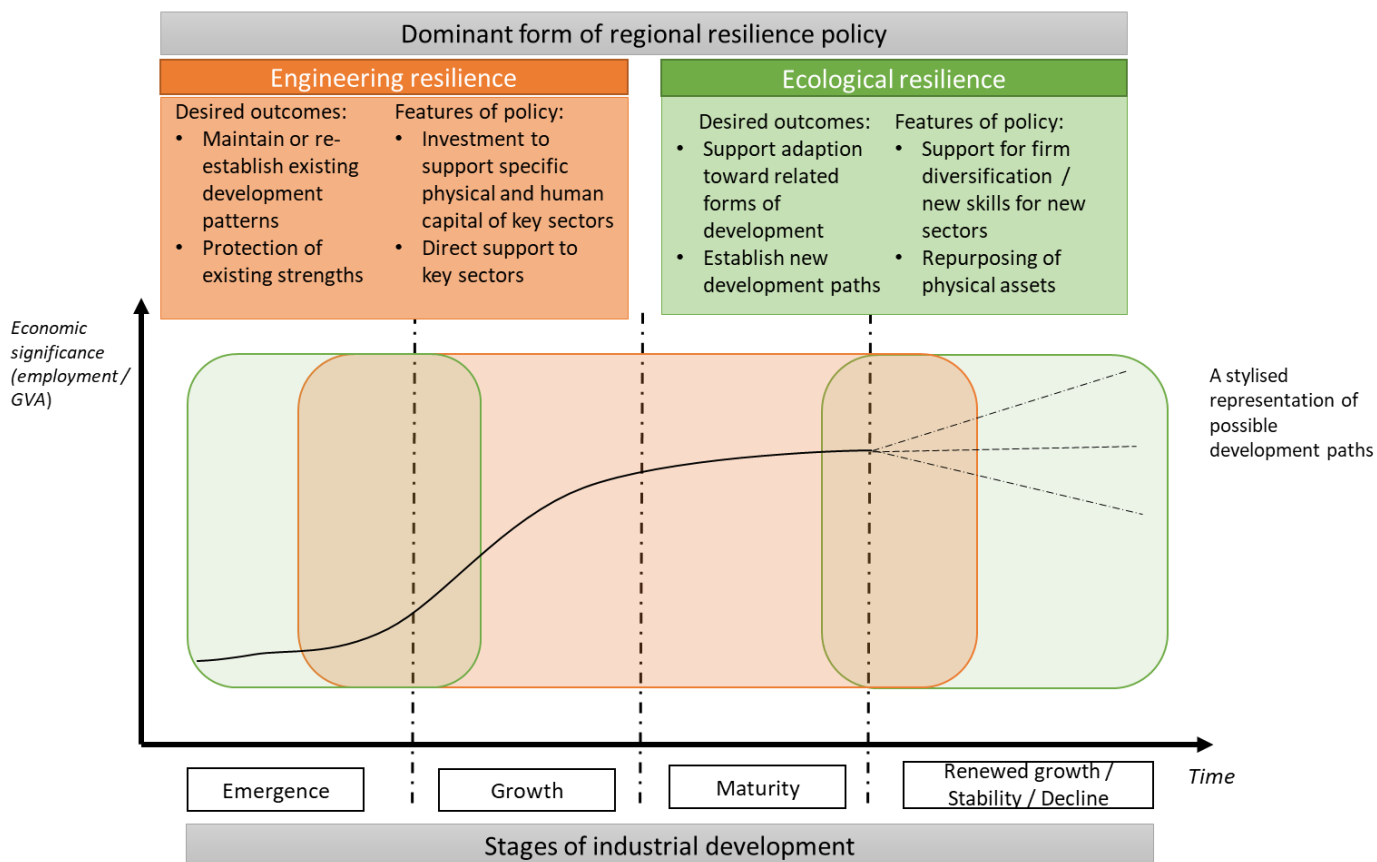
Figure 8.1 uses stages within an industry development path, such as emergence, growth, maturity, renewed growth, stability, or decline (this approach is consistent with the approach used by Martin and Sunley, 2011) to conceptualise the evolution of clusters, and in their discussion of the concept of regional resilience. The analysis presented here shows how the policy approaches to economic change correspond with academic definitions of regional resilience, changing as the development path changes over time.

This shows how different forms of equilibrist regional resilience policies and practices are dominant through different stages and may co-exist for various different sectors within a region at the same time. More specifically, Figure 8.1 shows that:

- policies and practices that are most consistent with ecological forms of resilience are most evident as a sector or groups of sectors emerge and begin to grow;

- as they then reach greater significance in terms of employment or growth, policy approaches consistent with engineering forms of resilience, to grow and protect development assets, become more evident in established policy.
- As sectors grow and mature, becoming more dominant in the region, policies and practices that are typically consistent with engineering forms of regional resilience begin to be increasingly important. This finding is consistent with economic theories of agglomeration, whereby institutions grow to support dominant firms and sectors (Frenken et al, 2007; Mackinnon et al., 2009; North, 1990; Rodrik et al, 2004).
- As the firms or sectors grow, institutional sunk-costs mean that policies and practices remain supportive as supporting institutions have become established - but also ecological forms of regional resilience may also emerge to provide support for innovation / diversification into different sectors or explore varied development paths.

Figure 8.1 Regional and sectoral development paths and approaches to regional resilience



Source: Author

Importantly, Figure 8.1 shows how different forms of regional resilience may co-exist, as policy makers seek to preserve dominant regional economic strengths at the same time as they are trying to foster different forms of economic activity that may, in time, take the place of previously dominant industries. It follows that an important judgement for regional policy makers in this respect is their determination of the economic strength of sectors or pillar companies in the region. Specific aspects of this process are discussed below as they relate to the conceptual findings of this research, relating to the process of regional resilience policy (Section 8.3).

As discussed previously in this Chapter, the ambiguity, or fuzziness, of the definition of regional resilience is one of the criticisms of the concept. This research contributes to the understanding of regional resilience in policy through demonstrating that can be understood as a combination of processes, within which multiple industries emerge, grow, mature, and change over different periods of time. As such the features of different academic definitions of regional resilience co-exist in policy, assuming varied degrees of prominence at different points in time depending on the prevailing policy maker objectives (this aspect is expanded on in detail in Section 8.3 below which presents a conceptual model showing how policies and practices related to anticipation and management of economic change related academic definitions of regional resilience are mobilised).

8.2.3 Implications for mobilisation and measurement of regional resilience in research

One implication from the findings from the empirical research is that they challenge the application of purely quantitative analytical methods that have been applied to measure levels of regional resilience. Such studies do not typically take account of the range of, potentially divergent, interpretations of regional resilience which may co-exist and for which regional policy makers may have different expectations of the time taken to achieve desired impact. Similarly, cross-regional comparisons of resilience are even less relevant because this approach makes it difficult to take account of the varied context and approaches within regions (for example, different policy maker goals, diverse policies and practices, varied time frame for expected impacts to be observed).

The evidence suggests that where purely quantitative techniques are more appropriate is in understanding the impact of specific plant closures or economic shocks, under such circumstances the stated aims of policy makers are typically more explicit. This

makes appropriate measurement of impact or adaption easier to define and calculate in appropriate and comparable ways.

An additional aspect of the review of policy and practice was the dominance of national policy makers in the design and implementation of established policies and practices at regional level. This aspect further challenges the utility of purely quantitative analysis where international comparisons are made that do not typically account for differences in approaches or outcomes which may be a product of national policy maker objectives and approaches.

8.3 The theoretical contribution of this research

This thesis has undertaken analysis which contributes to the understanding of regional resilience through developing an analytical framework which demonstrates how existing definitions of regional resilience may look when translated into policy approaches. Section 8.3.1 discusses the utility of the analytical framework and the forms of resilience identified in the research. Section 8.3.2 then outlines the contribution of this research to understanding regional resilience as a process within which institutional arrangements, institutional environments, and various forms of agency are of critical importance.

8.3.1 Contribution to the understanding of regional resilience

This thesis developed an analytical framework which took the key features of existing definitions of regional resilience and transposed their key features in regional policy. To the author's knowledge such a framework has not previously been produced in this way to combine:

- consideration of the way that definitions of resilience perceive dynamics of change
- forms of agency such as: the main agents of change and the role of public policy
- institutional factors (such as institutional structures, environments, and political economy)
- the role and importance of policy themes such as: firm-level dynamics, regional innovation assets, learning and skills, infrastructure and place development.

Application of the framework in the research undertaken for this thesis revealed the co-existence of various forms of resilience. In particular, it was evident that ecological and

evolutionary forms of resilience which seek to develop new forms of economic activity were frequently established alongside distinctly equilibrist forms of policy set on maintaining existing competitive advantages.

Whilst such complexity has led to discussion on the fundamental utility of the concept, with criticisms in relation to the lack of an established definition (Pendall et al, 2010) and in relation to the way in which the term had been mobilised in research emphasising the importance of equilibrium; a neglect of state institutions and policy; and culture and social factors (Hassink, 2010).

This research has shown that the apparent lack of precision in definition is reflected in established policy approaches. The research builds on this and identifies that established policy and practices is a result of a set of varied and changeable contextual factors for policy makers, with the importance of the distinction between anticipation and management of change and the varied extent to which they perceive outcomes to be observable over the short or longer term being particularly important. These elements are discussed in more detail in the remaining part of this sub-section which considers the distinction between anticipation and management in the context of different approaches to resilience.

In this thesis two distinct ways in which policy makers conceive approaches to anticipation and management of economic change have been identified– a business-focussed form of resilience and a human capital-focussed form of resilience. Fundamentally these approaches represent the result of a choice for policy makers as to most effective focus, unit of investment, or intervention point for public policy to deliver desired policy outcomes (with these desired outcomes also arguably a reflection of value judgements). However, these definitions and resulting established policy approaches include, and are developed through, the combination of wide range of causal factors identified in this thesis and discussed later in this section.

Measurement of policy outcomes in both the human capital and business forms of regional resilience share a common understanding of resilience as a growth-based framework. In this sense, resilience is not about a redistributive form of economic policy but rather is set within the accepted boundaries of a western market-based capitalist system. However, clearly these two approaches place different emphasis on where public policy should seek to influence – the level of the individual or the level of the enterprise.

Table 8.1 outlines these two policy maker perspectives identified in this thesis. The table provides a breakdown of key principles, objectives in anticipation of economic change, objectives for management of economic change, and the most relevant outcome measurements associated with different forms of resilience.

Table 8.1 Business related and human capital forms of regional resilience

	Business-related resilience	Human capital-related resilience
<i>Key principles:</i>	<ul style="list-style-type: none"> • Public policy a mechanism to remove restriction to business growth • Interventions should promote global competitiveness of firms and sectors • Regional embeddedness promotes resilience 	<ul style="list-style-type: none"> • Public investment in up-skilling individuals • Focus of public investment in transferable skills • Employment security for workers, • Quality working conditions
<i>Objectives in anticipation of economic change</i>	<ul style="list-style-type: none"> • Support for large business: pillar companies, key sectors, • Small firm support for high growth (established) firms • Specific business-related skills investments. • Direct innovation support for firm diversification. • Support targeted to existing (large) firm requirements 	<ul style="list-style-type: none"> • Support for labour market participation. • Learner-driven / individual choice in public investment in skills • Investment in transferable skills. • Incentives for firms to invest in specific skills. • Encouraging worker participation in decision making.
<i>Objectives in management of economic change</i>	<ul style="list-style-type: none"> • Manage effects of economic change through seeking to support existing economic strengths • Direct support to supply chain firms • Direct support for dismissed workers 	<ul style="list-style-type: none"> • Support for company diversification into economically viable sector • Direct support to dismissed workers in the form of training /retraining to diversify into different sectors
<i>Privileged measures of regional resilience</i>	<ul style="list-style-type: none"> • Growing regional GVA • Increasing regional employment • Embedding sectors/clusters in the region 	<ul style="list-style-type: none"> • Reducing unemployment and worklessness • Promoting in-work transfers. • Increasing educations and skills level in the workforce.

Source: Author

These definitions illustrate different understandings and approaches which offer an alternative way to understand regional resilience from a policy maker perspective. This extends the understanding of regional resilience; previous research has not systematically explored the extent to which varied understandings of regional resilience are held by policy makers and/or the extent to any such varied understandings are evident in policy and practice. These evident differences have important implications for the way in which the impact of different approaches to resilience should be assessed, with most previous research using common measurement metrics and time frames to assess comparative levels of resilience. These ways of understanding regional resilience can be understood as overarching frameworks which act to guide

and reinforce policy choices. The next section discusses the process through which such approaches to resilience are established in policy.

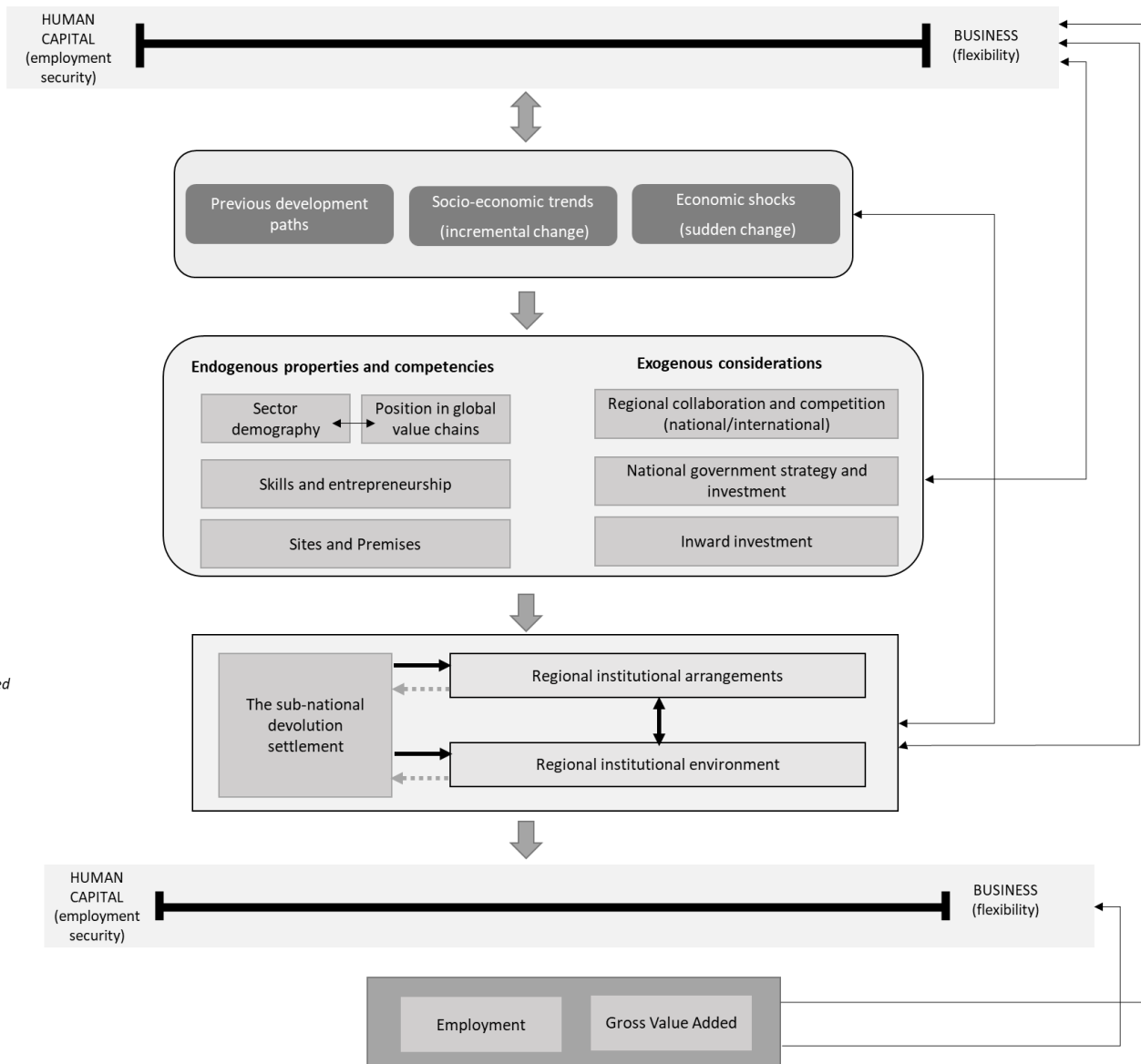
8.3.2 Exploring regional resilience as a process

This thesis was also concerned with the process through which approaches to regional economic development, related to regional resilience became established in policy and practice, with specific consideration of the role of institutional arrangements and institutional environments in this process. The research revealed the importance of these factors to the understanding of regional resilience in particular contexts.

The conceptual model below (Figure 8.2) outlines specific elements (A-F) which combine at regional level to determine the approach taken to establish regional policy related to anticipation and management of economic change. The figure reflects the interplay between the range of approaches stakeholders may seek to establish; place-specific socio-economic factors, including previous development paths in the region; and prevailing institutional arrangements and institutional environments in shaping forms of regional resilience in policy and practice. These aspects are discussed in more detail in the sub-sections below.

Figure 8.2 A conceptual model: the process through which policy and practice related to regional resilience is operationalised

A. Policy maker (and organisational) priorities in relation to the focus of regional resilience



Source: Author

A: Policy maker perspectives on regional resilience vary between and within regions

Policy maker understandings of policy and practices relevant to policy related to regional resilience and the most important policy priorities provide a starting point upon which policy discussion and strategy formation in the region is based. Key in this respect is the fact that decisions are grounded in a global political economy perspective, with regional actors themselves part of wider, potentially variable, national, and perhaps international networks in the same way that companies are part of wider sectoral networks. The regional approach is therefore variable, with policy makers not always in agreement on the most important specific policy approaches to prepare and manage economic change.

This thesis demonstrated that policy maker understandings of regional resilience may vary considerably or may in fact vary only in minor detail. However, policy priorities, are subject to change, malleable depend on specific regional circumstances, strengths, and assets. As identified in Figure 8.2, the main influences on policy maker priorities are prevailing regional socio-economic conditions; regional governance and institutions (changes to which may also alter the range of organisations active in regional policy); and, evaluation of policy outcomes, typically measured through employment and GVA.

The conceptual model presents stakeholder views on a continuum with human capital and business-focussed approaches at either end of the spectrum (element A in Figure 8.2), established policies and practices (either individually or collectively) can then be understood on the same continuum (element E in Figure 8.2). This highlights that not all established approaches are an aggregate of policy maker views, but rather a combination of the views of regional stakeholders operationalised through other specific elements of the conceptual model.

B & C: Place-specific socio-economic factors and previous development paths

This thesis has demonstrated, through both extensive policy review and case studies, the centrality of regional economic and labour market factors in bringing meaning to and shaping particular policies and practices related to regional resilience. More specifically, the perceptions of policy makers of the comparative strengths, weaknesses, opportunities, and threats, both within the national context and in international development are key drivers. As such, the approach is shaped, at least in part, by the relative assessment of the competitiveness of the regions asset base in relation to competition or collaboration.

Previous development paths, specifically the role of dominant industries and pillar companies, are important factors in this respect. Figure 8.1 above provides an illustration of how policy maker understandings of the position within an industry life cycle may impact their understandings of the most effective form of policy (and its relationship with academic definitions of regional resilience) at different points in time. In this respect, elements B and C of the conceptual model are closely interlinked in policy maker perspectives, with element B encapsulating the tipping points, or critical junctures which may be transformative in settled understandings and approaches to regional resilience policy and practice.

These factors are consistent with previous resilience research. For example, Boschma (2015) identifies that history is key to understand how regions develop new sectoral growth paths, with previous development paths setting the guiding boundaries but also providing opportunities for making new combinations and diversifying into new pathways. The dual aspect of previous development paths offering limits and opportunities that is identified in the literature is certainly evident in the two case studies undertaken for this research. In both cases the decline of traditional industries provided opportunities for the emergence of new economic activities.

These findings also offer a challenge regarding the extent to which resilience is something that can be understood to be ‘regional’ in nature –given that regions are heavily influenced by exogenous factors, such as the position of regional companies and assets in global value chains and the influence of national policy in shaping anticipation and management to economic change.

D: Institutions are crucial in shaping approaches to regional resilience

Element D of the conceptual model (Figure 8.2) accounts for regional institutions and the sub-national devolution settlement. This thesis, through in-depth case studies has demonstrated that the sub-national devolution settlement, which is both a product of, and an implementation structure, for national framework conditions, influences both institutional arrangements and the prevailing institutional environment. The conceptual model also identifies some influence on the national approach which flows from the regional level, though this is a far weaker direction of influence compared to the national – regional level of influence. The following sub-sections describe the role of institutional arrangements and institutional environment in the conceptual model.

Institutional arrangements

The synthesis of case study evidence discussed in the previous chapter identified aspects of institutional arrangements that were found to influence the type of regional resilience established in policy. These can be summarised as:

- the nature of the sub-national settlement, including the particular powers and responsibilities held at regional level;
- the organisation of decision-making structures at regional level; and,
- the scale of resources available at regional level (including, crucially, the freedom to use resources on regionally-determined priorities).

These aspects are the product of a range of political, geographical, social, and economic constructs which differ significantly by country. As such, the range of sub-national settlements or regional institutional arrangements differs across Europe, and increasingly within European countries. Indeed, the literature review reflected on this tendency in European regions to be characterised by increased dynamism in the relations between governments at various spatial scales within nations, a trend identified in academic research as a 'multi-scalar governance' (Bache and Flinders, 2004; Sørensen, 2006; Piattoni, 2009).

Most understandings of the multi-scalar nature of policy making stress two distinct but linked aspects - vertical dimensions (the development of a complex set of relations between supranational, national and subnational governments), but also horizontal dimensions: the increased involvement of non-governmental actors (representatives from businesses, civil society organisations, labour unions, etc.) in social dialogue at various territorial levels (Bache and Flinders, 2004).

The research undertaken for this thesis demonstrates the dominance of national government in these relationships, both as the lead in dictating the formal sub-national settlement and also in setting the level of resource and formal rules for the way in which regions can use devolved resources to implement the policies and practices. It is clear that the "rules of the game" as set by national government shape expectations and behaviours of the regions. As such these factors are a major determinant on regional policy approaches. In this respect the horizontal aspect of the multi-scalar nature of regional policy making is perhaps overstated when applied to policy and practices related to regional resilience. Therefore, studies which seek to understand regional resilience must examine how strongly external factors influence the approach.

The thesis also demonstrated, through both policy analysis and case studies, that there is a high degree of national policy maker involvement in the design of regional level policy making structures. This has the effect of ensuring that some regional policy makers have more power than others, particularly in setting priorities and making funding decisions. As such there is also evidence of significant asymmetry in the horizontal element of multi-scalar policy is applicable to resilience in policy when applied to the regional level.

Institutional environments

The literature review established that consideration of the institutional environment is particularly relevant to regional resilience and the extent to which stakeholders have a shared understanding of the process of anticipation and management of economic change. Amin (1999) established that the 'dominant mind-set' among policy makers was a key determinant of established policy approaches, and Ormerod (2012) asserted that such factors were often implicit or hard to detect in the policy making process, stating that "our decisions depend on the responses of others and on what we anticipate these responses will be".

The research suggests that this appears to be highly relevant in the cases of Southern Denmark and Tees Valley. In the former there is a strong consensus approach that has developed over many years, leading to a settled form of policy making through negotiation which appears to permeate all policy discussion from national to regional and local. The Tees Valley, with a more business-led approach, also has a relatively strong shared understanding or dominant mind-set in policy making, with the specific relationships between dominant stakeholders in the region a key component to understand mobilised policy related to regional resilience.

In this respect, however, the institutional environment is not a static phenomenon, but rather like the institutional arrangements, may be dynamic as it is transformed through events. In this respect, where there is consensus in the academic literature is that there may be, periodically, critical transitions or regime shifts at system level within regional or local economies when normal cyclical processes are stressed creating 'tipping points' – moments when structures collapse, and innovations or new developments take off (a stage of "post-maturity" to use the process of evolutionary regional resilience described above by Martin & Sunley, 2013). Similarly, Capoccia (2015) discusses the importance of critical junctures in comparative historical analysis as a way of understanding how seemingly entrenched factors such as: organisational norms,

formal rules, public policy, and political economy may be transformed as a result of specific events.

This thesis has demonstrated that the institutional environment can indeed be transformed at such points. The two case studies demonstrated that the closure of the shipbuilding sector in Southern Denmark and the steel works in Teesside were critical junctures, upon which regional and national stakeholders worked together to form a comprehensive response – involving support to individuals, impacted firms, and physical development work. This further demonstrates the significant extent to which approaches to regional resilience are fluid and a complex process which blends strategic and pragmatic approaches to anticipation and management of economic change.

E & F: Established policies and practices and growth metrics

The final two elements of the model show, in terms of policy focus, there may be a range of different approaches. The case studies and policy research demonstrated quite different approaches to this, but the critical factor is that these approaches are shaped by the processes identified earlier in the model. The thesis also demonstrates that the regional approaches to restructuring are also set within an overall growth imperative – with the overall success or failure understood through measurement of such metrics (typically employment and Gross Value Added).

8.4 Implications for policy and further research

This section identifies implications from the research findings and potential further research which could build on the work undertaken for this study.

8.4.1 Implications for regional policy discussion

1. Regional resilience can be used as a concept to discuss the nature of economic growth being pursued in policy

One of the legacies of the economic crisis and Great Recession was that the crisis-prone nature of capitalism had re-emerged in the consciousness of policy makers following ten years of relative prosperity and regional convergence in Europe. This development, along with wider social-economic and environmental discussion has led to discussion of the nature and form of economic growth being supported in policy (as can be seen in policy discussion relating to concepts such as environmental sustainability, inclusive growth, and green growth).

The concept of regional resilience can contribute to the discussion of the nature of economic growth that regions seek to facilitate, including widening the discussion on the overall purpose of policy and the specific target beneficiaries for regional policy. This thesis has developed an analytical framework which can be used in order to understand various approaches to resilience and offer an alternative perspective within which policy makers can discuss approaches to anticipation and management of economic change. The framework considers a wide range of factors to explain what regional resilience may look like in policy, as such it provides a framework which gives more precise meaning to the term resilience and enables policy makers to debate the viability and desirability of certain types of resilience and agree appropriate metrics.

This research has also demonstrated that distinct approaches to regional resilience are evident in Europe and that approaches to resilience are fluid. Therefore, further research should consider to what extent different forms of regional resilience offer policy makers the ability to deliver distinct policy outcomes and the extent to which different approaches can be help foster more sustainable growth.

2. The concept of resilience (as a process) is useful when discussing sub-national devolution

The scale and scope of multi-scalar policy making may itself be a contested development (in terms of the extent to which national governments dominate the regional level). However, policy analysis makes clear that there has been an increased interest and recognition of the benefits of place-based policy through sub-national devolution of powers and responsibilities in the last decade (Barca, 2010; Eurofound, 2013; IFS, 2015).

This thesis has demonstrated through case study research in two different contexts that that sub-national governance and powers have been subject to significant change over the past 10 years and are likely to continue to change in the future. Set within this context, consideration of the concept of regional resilience and the nature of economic growth that regions seek to facilitate can play a role as regions negotiate new powers and responsibilities with central government.

This thesis has also shown that whilst there may be common key factors which combine to establish regional resilience policy (as illustrated in Section 8.3.2), the varied institutional arrangements and institutional environments play a key role in establishing policy.

This aspect is important for discussions of devolution settlements and also provides a way of demonstrating the benefits and potential limitations of place-based policy.

8.4.2 Implications for further research

The following implications are identified for analysis of regional resilience.

1. Closing the gap between understandings of regional resilience and policy

The analytical framework established for this thesis provides a useful way of understanding what various forms of regional resilience may look like in policy. However, the extent to which this framework provides a way in which regional resilience may be understood in different national and regional contexts remains an open question.

Further research to understand forms of regional resilience established in policy may test and improve the analytical framework. This has the potential to improve understandings of regional resilience to the benefit of both academic researchers and those involved in policy formation and delivery.

2. Mixed methods research is important to ensure regional resilience retains meaning

To date, most academic research to understand the determinants of regional resilience have applied quantitative tools to measure comparative levels of resilience in equilibrium terms. This analysis has applied the same metrics to judge resilience in a number of regions (for example, Davies, 2011; Doran and Fingleton, 2013; Crescenzi et al., 2016; Sensier and Artis, 2014).

This research presents options which could complement such analysis and reflect different perspectives and forms of regional resilience, specifically:

- Restricting quantitative analysis of regional resilience to analysis of the impact of management of particular events and plant closures. Typically, such cases involve targets for reemployment rates and/or specific action plans which may be linked to wider regional or national strategy. In such cases evaluation can be undertaken in a manner which evaluates the effectiveness of specific approaches.
- Undertaking analysis of regions in a manner which establishes the particular form of regional resilience approach that is taken by the region and which takes account of the national framework conditions within which they operate. In this

respect it will be possible to control for such factors and better understand endogenous and exogenous factors which explain outcomes.

Understanding policy objectives is important - the analysis undertaken in this study illustrates that there can be significant differences between regions when it comes to approaches to regional resilience. Therefore, if research is being undertaken to understand why outcomes are being observed, it is important to understand what policy maker intentions are, and over what period of time, aspects of policy intent are hard to ascertain through purely quantitative methods.

3. Effectiveness of regional resilience should be measured based on the region's specific policy objectives

Up to this point the majority of comparative studies of regional resilience have assumed that all regional objectives are similar: to achieve high employment and high economic growth. It has also been assumed that they seek such policy outcomes over the same period of time (or indeed, typically, undertake analysis using a common start and/or end date). Measures of relative regional resilience are then established based on these factors.

However, this thesis has demonstrated that understanding relative levels of resilience can be enhanced through a deeper consideration of the understanding of regional policy maker approaches to regional resilience and the features of specific approaches taken in regions. Developing such an understanding enables research to develop more accurate analytical frameworks which include appropriate measures and timescales.

Furthermore, the thesis has established that there is an important distinction in the European policy review and case study regions between anticipation and management of economic change (this is also reflected in wider policy studies such as Eurofound, 2010; European Commission, 2014). The difference between these stages and the resultant policy approaches can be very different. This further suggests that it is very important to incorporate an understanding of the approach being taken to resilience by policy makers to more accurately assess the effectiveness of these approaches to regional resilience.

8.5 Summary

The concept of regional resilience has been used by researchers to examine variable patterns of uneven development and to explain varied regional capacity to adapt to

economic change. However, regional resilience has remained a contested concept, with little consensus on definition or utility among academic researchers.

This thesis develops the understanding of regional resilience through exploring the policy maker perspective in specific contexts to understand the extent to which the concept is reflected in policy and practice, and particular institutional contexts influence approaches to policy related to regional resilience. An analytical framework was established in order to identify policy and practices that were relevant to existing theoretical perspectives of regional resilience. The research conducted case studies which demonstrated two distinct approaches to the anticipation and management of economic change: a human capital approach in Southern Denmark and a predominantly business focussed approach in Tees Valley. The research also established the centrality of institutional arrangements and institutional environments as key influences on prevailing policy approaches. .

The research is important because it demonstrates the utility of regional resilience as an analytical lens to explain and examine particular policy approaches. Such approaches are a complex blend of strategic and pragmatic approaches, heavily conditioned by factors outside of the region. The thesis demonstrates that regional resilience provides a way of characterising the focus and form of regional growth policy. This may be used in design and implementation of devolution settlements and prompt policy maker consideration of the kind of regional growth they seek, the importance of resilience to it, and therefore, who benefits from public policy interventions.

Appendix 1 Relevant EU policy related to economic restructuring

EU policies on restructuring and change

EU support to the restructuring and change policy field includes a variety of activities such as analytical and research work, research, peer-learning activities, development of the databases and monitoring of the implementation at the national level.

The European Monitoring Centre on Change (EMCC) and the European Restructuring Monitor (ERM) was established in 2001, the Centre is a key measure to underpin collaborative efforts across Europe in the area of restructuring. EMCC is intended as a ‘focal point’ for companies, social partners, national and regional authorities, and European agencies alike to monitor and keep abreast of critical developments and their likely impact at company, sectoral and territorial levels, whether they be due to, for example, changes in legislation, emerging new technologies, or the introduction of new business practices. It is a source for information for purpose of this study as the EMCC provides up-to-date news and analysis on company restructuring, sectoral developments and their employment consequences in Europe.

The second milestone in the development of EU restructuring policy was the 2005 Communication from the Commission “Restructuring and employment. Anticipating and accompanying restructuring in order to develop employment: the role of the European Union”. The Communication presents restructuring as being at the heart of the re-launched Lisbon Strategy, calling on the EU and Member States to tackle the negative consequences of restructuring by active labour market policies, lifelong learning, and the anticipation of change in industrial sectors. To achieve this, it emphasises the importance of mobilising all national and Community resources, and enhancing partnership between the EU and Member States, as well as the social partners and civil society, all with the view to ensuring that the negative effects of restructuring on employment and working conditions are as short-lived and limited as possible. The Communication did not set out practical tools to manage restructuring.

In 2005 the European Commission also established the Restructuring Task Force and the Restructuring Forum. The task force coordinated the policies on restructuring, and the analyses made by the different services on the phenomenon of restructuring (causes of restructuring, as well as the best ways of anticipating change). It also prepared and organised the different sessions of the Restructuring Forum in the

different Member States. Its overall mission was to provide an EU-wide gathering to frame, support and ultimately build upon initiatives and policy measures that existed at the time in response to the challenges posed by restructuring.

In 2009 a Communication from the European Commission on “A shared commitment for employment” called for better anticipation and management of restructuring, though exchange of experiences (e.g. 'Toolkit for restructuring') and sectoral partnerships. On 11 February 2009, the Commission held a workshop aimed at gathering a group of experts and restructuring stakeholders in order to develop a series of “Restructuring Process Checklists”. Afterwards a set of comprehensive checklists was published, containing concrete actions aimed at anticipating, managing, and reacting to restructuring; to help the actors confronted with a restructuring.

Between 2008-2010, the European Commission ran a series of national seminars on restructuring (project A.R.E.N.A.S), which sought to bring together key stakeholders to debate the national framework for the anticipation of restructuring and legislation and other measures supporting the implementation of follow-up of restructuring in a way which limits the negative impact of such processes on companies, individuals and territories

The Commission staff working document *Restructuring in Europe 2011* (European Commission, 2012) illustrated EU action in the field of anticipating skills needs and developing competences; highlights the role of EU funds in support of restructuring processes, the impact of restructuring in EU regions and the role of ‘smart specialisation’ strategies; analysed the role of social dialogue, legal instruments and Member States’ support measures in this field; outlines the challenges and the EU responses to them; and highlighted some tentative lessons learned in recent years on anticipation and management of change and restructuring.

The Commission staff review was followed by the 2012 Green Paper: Restructuring and anticipation of change: what lessons from recent experience? (European Commission, 2012) The paper renewed the debate on restructuring and was accompanied by a public consultation aiming to get further insights into best practices that contributed to a successful restructuring process especially under the current economic crisis. The Commission was eager to encourage permanent business adaptation to fast-changing economic circumstances while pursuing a high level of employment and social protection through the appropriate supporting measures. Measures supporting the reallocation of resources between firms and occupations are

strongly in demand. Furthermore, the paper highlighted the central role of public services as a partner for restructuring management as public enterprises as an important employer.

In early 2013, the European Parliament adopted a resolution endorsing a report of Alejandro Cercas member of the Spanish Socialist Workers' Party (PSOE) – Resolution on information and consultation of workers, anticipation and management of restructuring based on Article 225 of the TFEU (known as the Cercas Report) (European Parliament, 2013). The resolution called on the European Commission to prepare a proposal for a legal act on the information and consultation of employees, and the anticipation and management of restructuring.

The European Commission responded to the European Parliament request by issuing in December 2013 Communication on EU Quality Framework for Anticipation of Change and Restructuring (QFR) (European Commission, 2013). The framework is a soft law instrument setting out best practice for the anticipation and monitoring of restructuring for stakeholders involved the guidelines and best practice contained in the QFR are not legally enforceable, as the Cercas Report called, which disappointed social partners representing employees (ETUC, 2012) but was welcomed by employers' organisations (BUSINESSEUROPE, 2014).

Building on from various initiatives gathering information on anticipation, change management and restructuring initiatives, responses received to the Green Paper and a resolution of the European Parliament on Information and Consultation of Workers, Anticipation and Management of Restructuring, the European Commission published the EU Quality Framework for Anticipation of Change and Restructuring. The QFR contains a set of around 30 good practice actions and instruments to be adapted and used by different actors in the process of anticipating and managing change and restructuring, these are outlined in Table A1.1 below.

Table A1.1 Actions and instruments to be adopted in the implementation of QFR

STAKEHOLDERS	ANTICIPATION OF CHANGE	MANAGEMENT OF RESTRUCTURING
EMPLOYERS	<ul style="list-style-type: none"> • Conduct strategic long-term monitoring of company financial performance and technological and market developments • Engage in continuous mapping of skills needs 	<ul style="list-style-type: none"> • Building of internal consensus through joint diagnosis in line with comprehensive information and consultation processes • Help to organise personalised support for individuals affected by restructuring

	<ul style="list-style-type: none"> • Implementation of measures targeted at individual employees (flexibility measures, training, and career development measures to support internal and external flexibility) 	<ul style="list-style-type: none"> • Involve internal actors at an early stage
EMPLOYEES REPRESENTATIVES	<ul style="list-style-type: none"> • Engage in continuous mapping of skills needs • Implementation of measures targeted at individual employees to support internal and external flexibility 	<ul style="list-style-type: none"> • Establishment of joint diagnosis with management • Agreement company specific procedures on dealing with restructuring situations • Contribute to design and implementation of specific measures to support employees • Follow up and assist workers made redundant • Participate in external partnerships to support affected workers
INDIVIDUAL EMPLOYEES	<ul style="list-style-type: none"> • Collect information needed to understand the situation of the company • Review own skills and update career orientations • Strengthen own employability and mobility • Exercise rights to training and education 	<ul style="list-style-type: none"> • Seek information on company strategy, restructuring plans and available support measures • Explore possible actions to avoid being made redundant • Make use of individuals support measures being made available (for internal or external redeployment)
SOCIAL PARTNERS AND SECTORAL ORGANISATIONS	<ul style="list-style-type: none"> • Mapping of future jobs and skill needs • Drawing up frameworks for worker involvement • Preparation of measures for affected workers, including to support internal and external flexibility and mobility 	<ul style="list-style-type: none"> • Support joint diagnosis • Explore and negotiate possible options as alternatives to redundancies • Support redundant workers individually
NATIONAL AND REGIONAL AUTHORITIES	<ul style="list-style-type: none"> • Continuous mapping of labour and skills needs • Develop measures target at individual employees to boost flexibility and mobility • Develop measures to promote regional economic adaptation 	<ul style="list-style-type: none"> • Support joint diagnosis • Explore alternative options to prevent redundancies • Support redundant workers individually (including through PES) • Facilitate partnerships between actors

Source: European Commission, 2013

Appendix 2 Socioeconomic conditions and policy context for case study regions

Introduction

This appendix provides an overview of the context within which policy making in case study regions takes place. The first section discusses specific indicators to illustrate aspects of public policy related to business and enterprise, education policy, public employment support, social security provision, and the extent to which social dialogue plays a role in policy making. Selection of these particular issues is informed through consideration of policy and practice related to economic restructuring identified in the literature review.

From analysis of these indicators the picture which emerges is that the framework conditions within which the case study regions operate is quite different. In Denmark, the relatively weak employment protection legislation, allowing that employers can easily hire and dismiss workers, coupled with high level of expenditure in education and social security provision, or a strong “safety net”, is a distinctive feature. In this respect the high level of social partner involvement in policy making is a clear difference when compared with the UK context.

Economic and labour market conditions

The national level data analysis describes the conditions which shape regional policy and in which regional policies operate. These conditions are a function of the national economy and also political choices which have shaped the boundaries within which regional decision makers operate.

The focus here is on indicators that show the national government approaches to policy relevant to regional resilience, a mixture of policy input (in the form of expenditure and legal approaches) and participation (in the form of relative numbers of citizens using particular services) are used rather than a focus on specific outcomes as the effectiveness of these approaches is not the primary focus of enquiry. Rather the policy approaches within which regional approaches are established is the key focus.

Table A2.1 outlines the issues that are analysed in this section, along with the relevance to regional resilience and the list of specific indicators that are used.

Table A2.1 Indicators of national framework conditions

Issue	Nature of the issue	Relevance to regional resilience	Indicators
Legal / contractual flexibility	This issue relates to the balance between flexibility for employers to employ and terminate employment, and the security of employment for employees. Data are available for temporary and standard contract workers.	Impacts the extent to which companies can react to changes in trading patterns and the extent to which employees are vulnerable to rapid job loss in such events	1. Employment Protection Legislation (Standard Workers)
			2. Employment Protection Legislation (Temporary Workers)
			3. Employment Protection Legislation (Collective Dismissals)
Provision and participation in education	This issue relates to the extent to which there is public and private investment in human capital and provides information on participation and outcomes. These data relate to the capacity of the stock of human capital to react and adapt to change	Investment in human capital can impact how able individuals are to make in-work transitions to new roles / jobs, and also their ability to react to economic shocks. This can be either through same sector or different sector employment.	4. Public and private expenditure on education as a percentage of GDP
			5. Percentage of the adult population aged 25 to 64 participating in education and training
Provision of Active Labour Market Policies	This issue relates to the extent to which the state invests in support for those out of work. Labour Market Expenditure (LMP) relates to the element of support that is conditional upon participation in certain programmes or behaviours.	The scope and scale of labour market provision can affect the extent to which individuals are able to train/retrain following an economy shock.	6. Total LMP expenditure as a % of GDP
			7. ALMP ⁶ expenditure as % of GDP
Social Security provision	Social protection spending provides an indication of the degree to which different countries provide a “safety net” for those that are out of work or on low incomes.	This relates to the extent to which the state provides resource to support individuals out of work, this plays a role in their choices, for example: regarding return to employment or training	8. Expenditure on passive LMP ⁷
			9. Expenditure on social protection
Systems of Social Dialogue	Data on forms of social dialogue provide some indication of how the	Differences in social dialogue may reflect the power balances	10. Share of employees in trade unions

⁶ Active Labour Market Policy (ALMP) refers to Training; Job rotation and job sharing; Employment incentives; Supported employment and rehabilitation; Direct job creation; and, Start-up incentives.

⁷ Passive labour market policy refers to Out-of-work income maintenance and support; and, early retirement.

	policy making process works in different countries. The level of Trade Union membership and collective bargaining coverage describes the role of workers' representatives in the policy making process, with worker-board representation describing firm-level worker participation in decision making.	between various actors in determining the policy outcomes (as they relate to previous indicators and others). This therefore plays a role in determining regional resilience policy. These indicators are of further interest as they describe institutional environments.	11. Collective Bargaining Coverage
			12. Worker board-level representation

Source: Author

Legal / contractual flexibility

The OECD indicators of employment protection legislation (EPL) measure the procedures and costs involved in dismissing individuals or groups of workers and the procedures involved in hiring workers on fixed-term or temporary work agency contracts. The indicators include analysis of statutory laws, collective bargaining agreements and case law and consultation with country governments and labour law experts. The charts below present's data for workers that are on regular contracts and data for those on temporary, or fixed-term contracts. The charts present data for the UK and Denmark, with the OCED average included for comparison.

The data in the first chart below shows that the UK has low levels of employment protection legislation when compared with other OCED countries and also when compared with Denmark. Indeed, the full OECD dataset shows that the UK has one of the most lightly-regulated labour markets amongst developed countries, with only the US and Canada with lighter overall regulation.

The data in the second chart below show a relatively settled level of employment protection in the UK, though there was a change in the level in 2013. This can be attributed to the outcome of the Conservative-led coalition government reforms which were introduced following their analysis of the economic crisis and great recession. The reforms included an extension to the time employees needed to be employed to be able to claim for unfair dismissal from 1 to 2 years (BIS, 2013).

The data in the third chart below relate specifically to temporary contracts. In common with the data for permanent contracts the UK has comparatively weak protections for temporary workers. The UK approach in this area has been to comply with EU Directives and rulings of the European Court of Justice but in transposing Directives and rulings to maintain lightness of regulation where permitted. The rationale for this

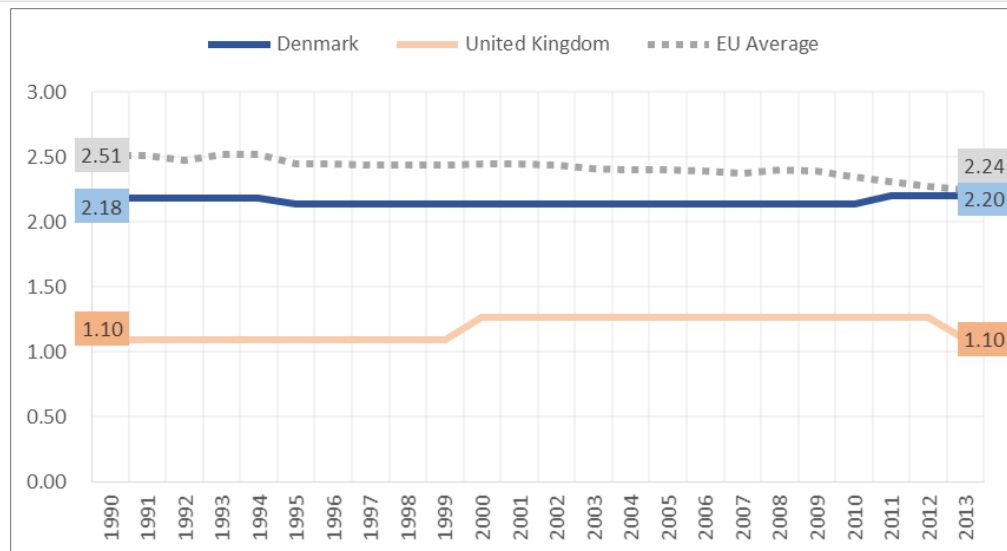
approach is to maintain maximum business flexibility in how they may use temporary contracts to meet changes in demand. The only change in the data in pre-great recession in 2003 which may relate to regulations introduced in that year to regulate employment agencies frequently used by temporary or agency workers⁸.

LEGAL / CONTRACTUAL FLEXIBILITY

Strictness of
employment
protection –
regular
contracts

Source: OECD,

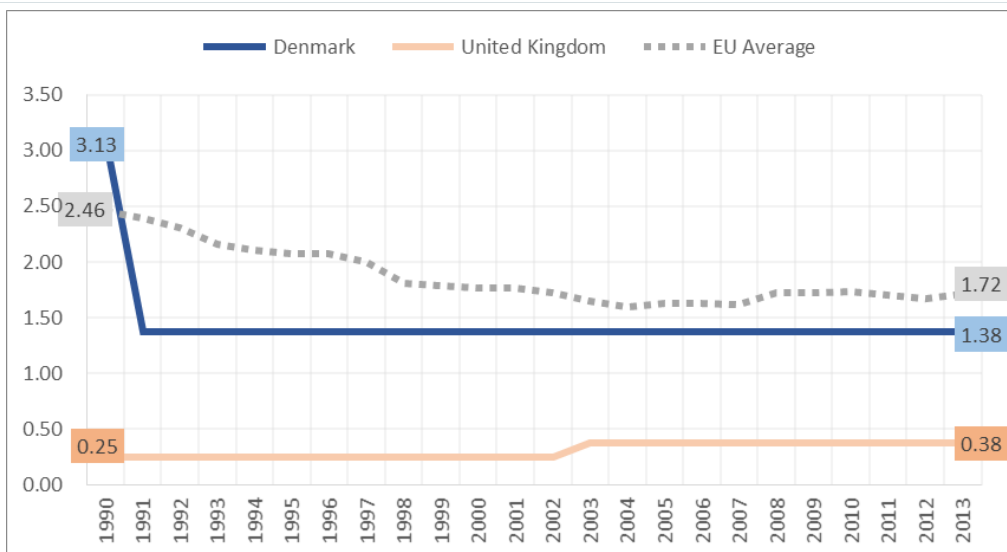
Extracted:
08.05.18



Strictness of
employment
protection –
temporary
contracts

Source: OECD,

Extracted:
08.05.18

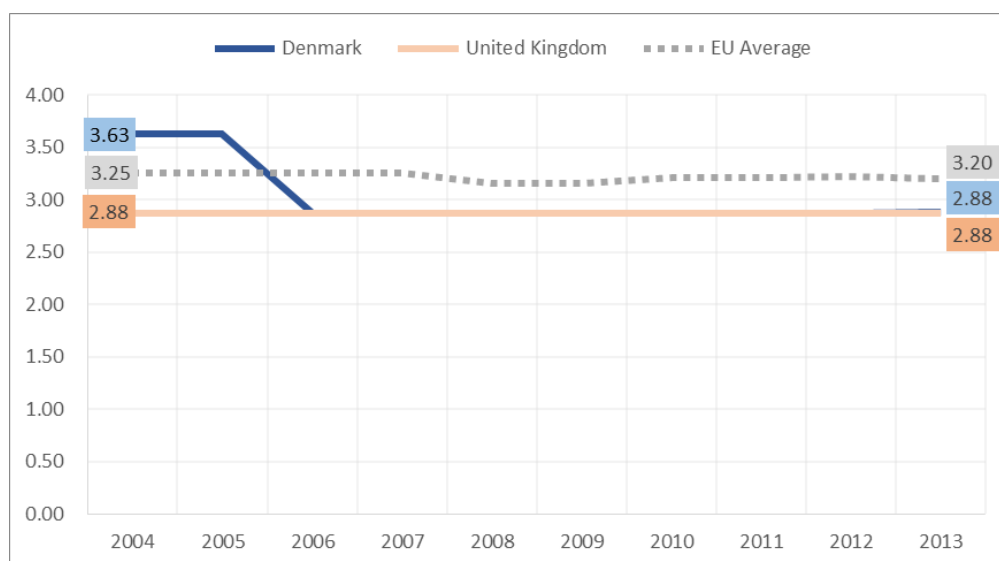


⁸ The Conduct of Employment Agencies and Employment Businesses Regulations 2003: <http://www.legislation.gov.uk/uksi/2003/3319/contents/made>

Strictness of
employment
protection –
**collective
dismissals**

Source: OECD,

Extracted:
08.05.18



The link with regional resilience is that these data and the reforms described above which explain the changes in the data for the UK are part of an approach taken by the UK government that is intended to reduce the risk for employers to take on new staff. This is understood to be important for UK competitiveness. There has been no change to this approach as a result of the great recession, indeed the only significant post-recession development has been to further weaken labour market protections for workers / reduce the burden on employers (exemplified in 2013 reforms).

The implication for regional resilience policy is wider than employment law. The fundamental principle is that, when compared with other European countries, the UK government approach to the balance between employer flexibility and employee security favours employer flexibility. Indeed, the UK cites lightness of regulation as a key element of business-friendly policy (highlighted in, for example in successive Employment Law Review Annual Updates published by the UK Government).

Provision and participation in education

The data presented below in the first chart show annual expenditure on public and private educational institutions per pupil/student compared to GDP per capita. This data is only available up to 2011. It is based on full-time equivalent enrolment. The use of GDP per capita allows the comparison of levels of economic activity of different sized economies (per capita) irrespective of their price levels (in PPS).

The data show that the level of expenditure per capita in Denmark has been substantially higher than the EU average since the year 2000, with the level of

expenditure in the UK lower than that of Denmark but rising above the EU average by 2011.

The second chart below presents data which shows the level of participation in education and training for the UK and Denmark, along with the EU average. These data are survey based and show the share of people aged 25 to 64 who stated that they received formal or non-formal education and training (both general and vocational) in the four weeks preceding the survey to gather the data.

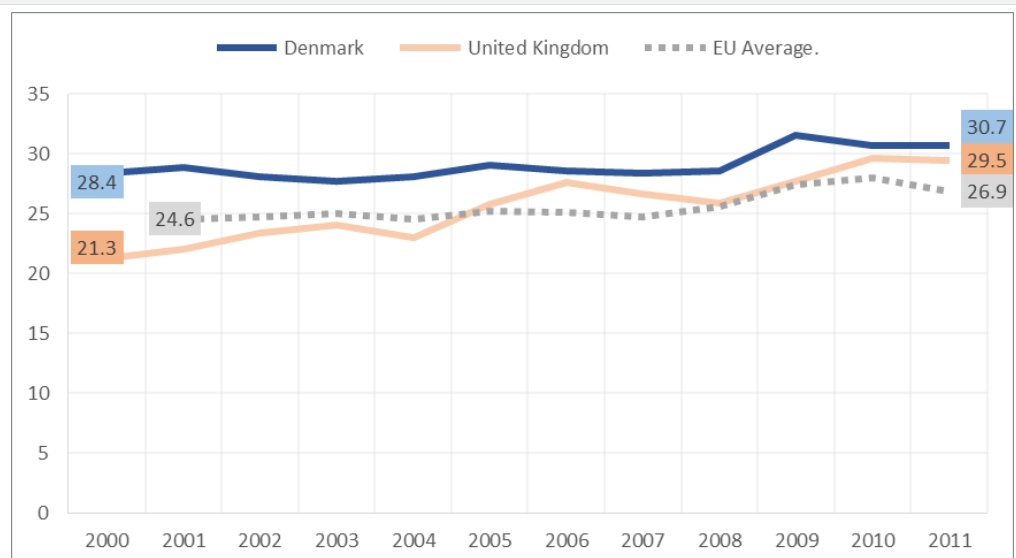
These data illustrate that participation in education among UK adults is consistently higher than the EU average from 2000 to 2017. However, there are some interesting trends within the data. When the years which preceded the great recession are considered, between 2000 and 2007 there was an initial rise in participation between 2000 and 2005, from 20.5% to 27.6%. However, in 2006, just before the economic crisis and great recession, the rate fell and has followed a general downward trend up to 2017 where the rate was 14.3%. It is interesting to note that the UK rate in 2000 was 1.1 percentage points above that of Denmark but by 2017 the UK rate was 12.5 percentage points below that of Denmark. Indeed, the UK rate has converged somewhat toward the EU average. In 2002 (earliest date for which comparable data are available) the UK rate was 14.2 percentage points greater than the EU average; by 2017 the UK rate was only 3.4 percentage points higher than the EU average.

EDUCATION

Annual expenditure on public and private educational institutions compared to GDP per capita

Source:
Eurostat,
[tps00069]

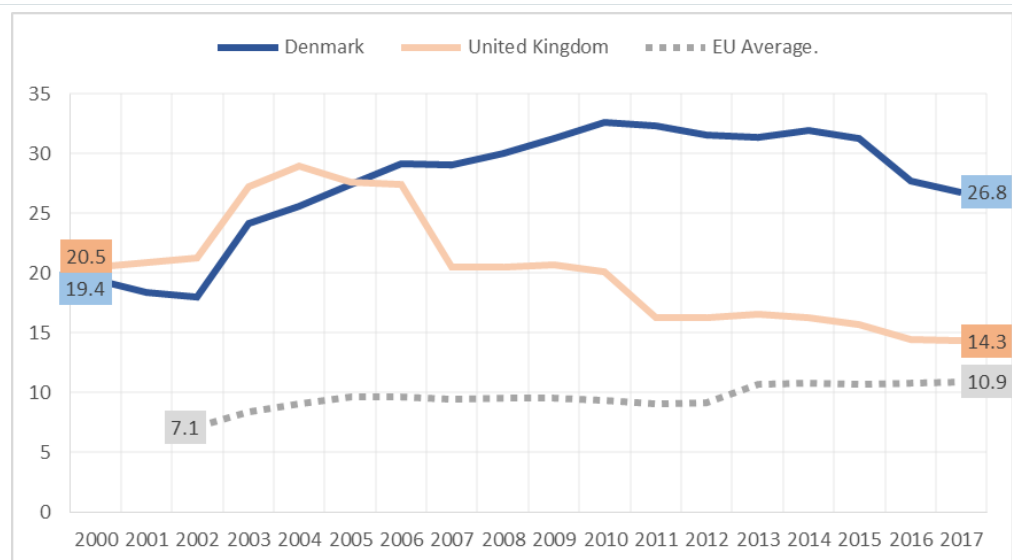
Extracted:
03.05.18



Adult
participation in
learning

Source:
Eurostat,
[sdg_04_60]

Extracted:
03.05.18



Provision and participation in Active Labour Market Policies

The first chart below presents data to show national expenditure on labour market policy as a share of GDP. These data refer to three main types of market interventions: services, measures and supports.

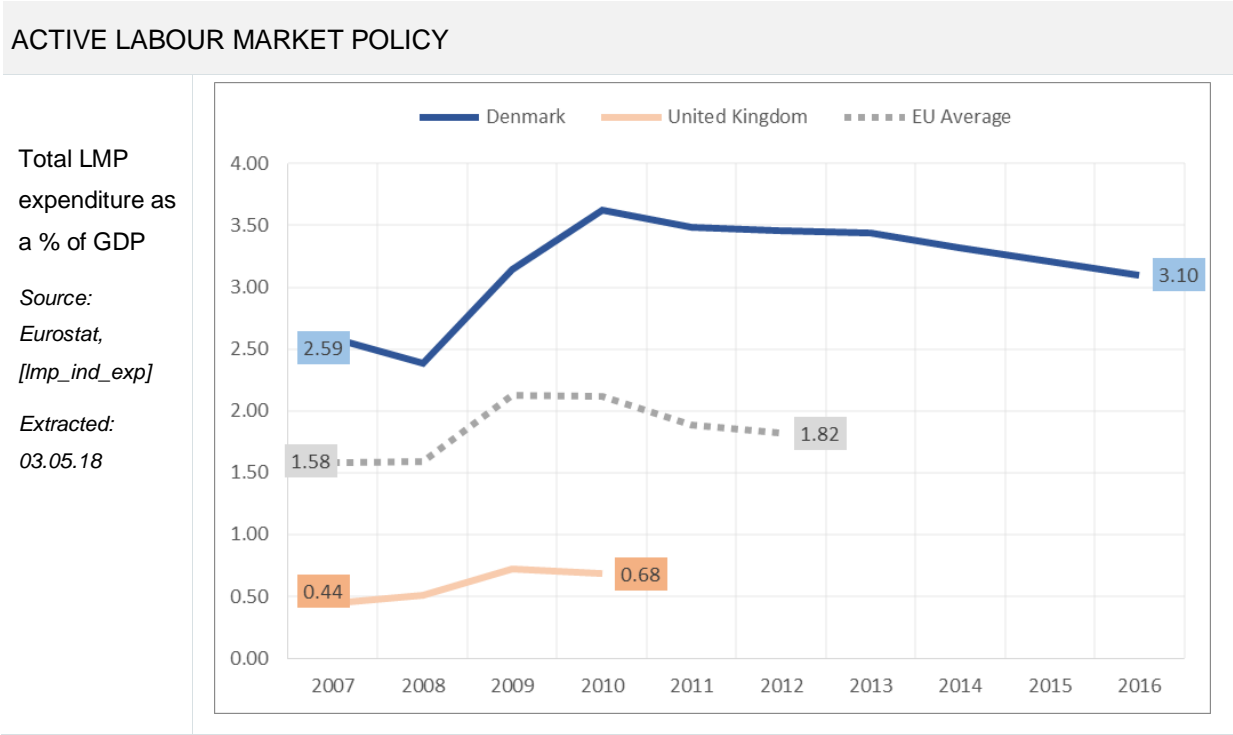
- Active Labour Market Policies expenditure refers to all services and activities Public Employment Services and any other publicly funded measures provided to support reemployment of unemployed persons.
- Labour Market Policy measure expenditure refers to services to invest in skills or work experience to support employability. Measures include short-term activities which supplement basic job searches.
- LMP supports cover financial assistance to compensate individuals for a loss of wages or salary and to support them during a period of job-search.

Comparable data is not available prior to 2007 and is only available for the UK between 2007 and 2010. Nevertheless, some interesting observations can be made. The United Kingdom is among the countries in Europe with lowest expenditure on labour market policies in Europe. This expenditure did increase between 2007 and 2009 as the unemployment rate grew in the UK during the great recession. However, expenditure as a share of GDP reduced in 2010, this despite unemployment still increasing at this time.

By contrast the data show that Denmark has higher than EU average rates of expenditure on LMP as a share of their GDP. Indeed, it should be noted that Denmark has one of the highest levels of expenditure on LMP as a share of GDP in Europe.

The second chart below presents data on expenditure for LMP measures. This expenditure specifically relates to training; job rotation and job sharing; employment incentives; supported employment and rehabilitation; direct job creation; and start-up incentives. These data are a sub-set of those that are presented in the first table in the box below, specifically showing active labour market policy interventions that are provided with a direct purpose of reemployment.

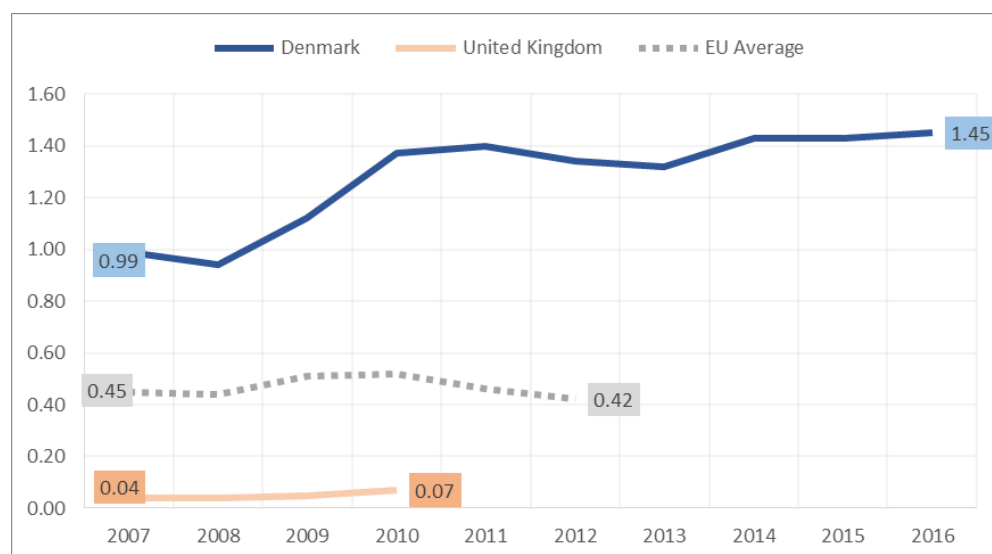
These data also show the relatively low level of expenditure on supports in the UK when compared with the EU average and also Denmark. What is noticeable is a slight increase in 2010 in the UK on expenditure on supports when compared with the two previous years for which data are available, though this is in line with similar increases in other counters and the EU average.



Active LMP expenditure as a % of GDP (categories 2-7)

Source: Eurostat, [Imp_ind_exp]

Extracted: 03.05.18



The significance of this trend for the research is that the data reinforce the policy message that the crisis and great recession did not result in significant national level increases in the resource available to support individuals back into employment.

Social Security provision

The greatest proportion of LMP expenditure in the EU, almost 60 % of the total or around 1 % of EU GDP (as shown in chart below) relates to passive LMP supports. This comprises categories 8 and 9 of country expenditure in this area: out-of-work income maintenance and support and early retirement.

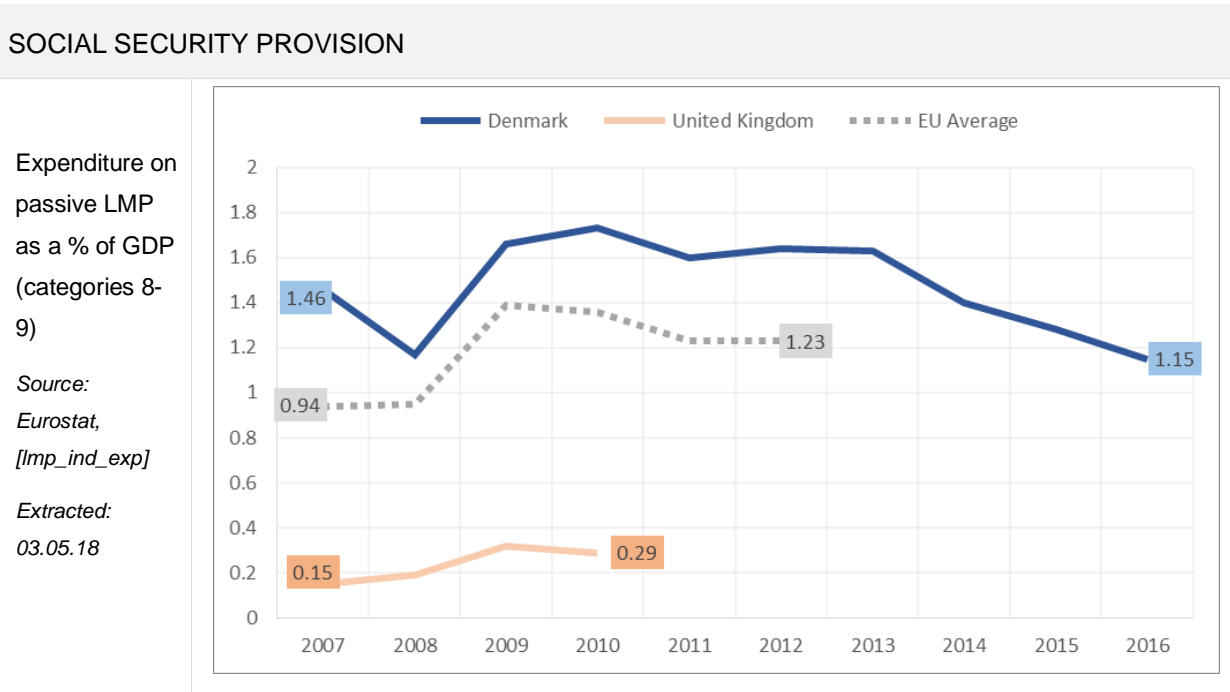
As such this expenditure provides a good indication of the relative generosity of welfare systems in Europe. The first chart below presents data comparing the UK with Denmark, and the EU average. These data show that the UK expenditure on out of work income support and support for early retirement is far below the EU average and the levels of expenditure for Denmark as a percentage of GDP. Data for the UK are not available beyond 2010 so it is difficult to chart the long-term development of this expenditure for the UK.

Nevertheless, the fundamental principles of the UK can be understood through these data. The UK Public Employment Service main motivation is to move people into employment as quickly as possible. In contrast it could be argued that other countries, Denmark perhaps being the clearest example, seek to direct investment into a stronger safety net – exemplified here through more generous expenditure on passive LMP, but

also as outlined in the charts through significantly higher expenditure than the UK on active LMP.

The second chart below provides more recent data which specifically relates to social protection expenditure. This shows expenditure which provides a wider range of government services, rather than LMP data presented above. In the chart below expenditure relates to government expenditure that is targeted toward protecting people against the risks associated with unemployment, parental responsibilities, health care and invalidity, the loss of a spouse or parent, old age, housing, and social exclusion. As such this provides a more holistic sense of the range of welfare state provisions, these data also extend up to 2015.

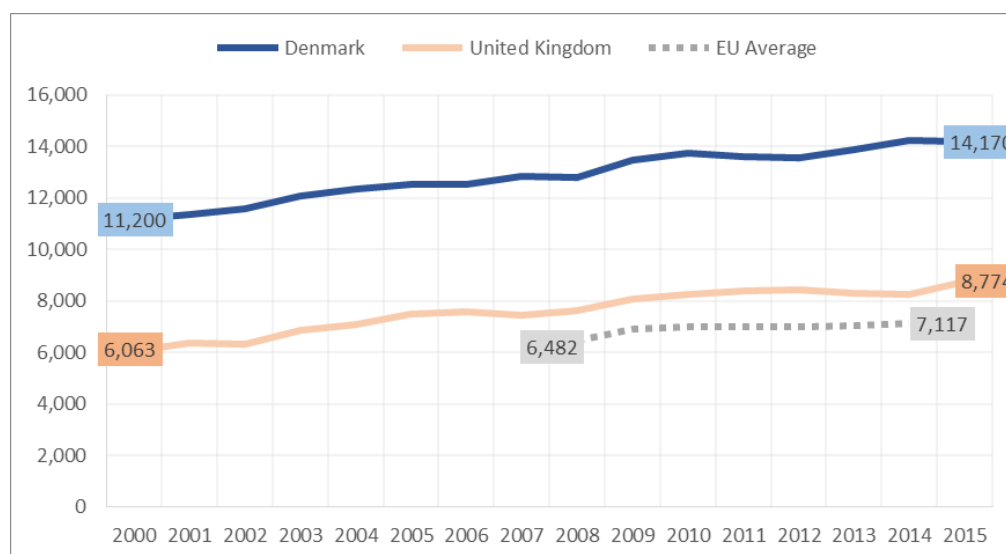
These data show an increase in expenditure across all countries when the data in 2000 and 2015 are compared. The increase in Denmark appears to be gradual with little evidence of a spike during or following the great recession. This may be a function of the wide range of services captured in these data. What is also important is that these data suggest that there has been little change in the fundamental approach taken in the UK with regards to a purposively designed relatively weak safety net of social protection.



Social protection benefits (Euro per inhabitant at constant 2010 prices)

Source:
Eurostat,
[spr_exp_sum]

Extracted:
03.05.18



Systems of Social Dialogue

The table below shows data for three indicators relating to the system of social dialogue in the UK and Denmark. These data are from various sources, but each of the data relate to the year 2012. This provides a common date upon which to make comparisons.

The data show a varying picture for employee trade union membership, the table shows that, at present just over a quarter (26%) of UK employees are union members, although it is worth noting that union density is much higher in the public sector (56%) than the private sector (14%). This shows that, when compared with other countries of Europe the unions in the UK represent relatively fewer employees. This is particularly the case when compared with Denmark where the share of employees in trade unions is 67%.

Data on collective bargaining coverage are also presented in the table, these data relate to the number of employees covered by collective agreements as a percentage of the total number of employees as a whole. Such collective bargaining establishes minimum standards for workers, it is more widely used in other countries of Europe, with relatively little use in the UK.

The table also shows information on worker-board level representation. Here it can be noted that there are no formal rules in place in the UK that give workers rights to board-

level representation (though there is a European Works Council Directive (Council Directive 2006/109/EC) which stipulates that in transnational decisions workers have a right to consultation). By contrast it is more commonplace that there are rules in other countries of Europe which give workers a right to representatives on boards of directors.

Country	Share of employees in trade unions	Collective Bargaining Coverage	Worker representation at board-level
DK	67%	80%	Employee representation at board level starts in companies with 35 employees and these representatives have one third of the seats.
UK	26%	29%	UK employees have no statutory right to representation at board level.
EU Ave.	30%	59%	N/A

Sources:

Denmark: Udviklingen i den faglige organisering: årsager og konsekvenser for den danske model, by Jesper Due and Jørgen Steen Madsen. 2010, LO-dokumentation 1/2010;

United Kingdom: Trade Union Membership 2013: Statistical Bulletin, Department for Business, Innovation and Skills, May 2014.

Appendix 3 Topic Guide and coding structure for case study interviews

Topic Guide for stakeholder interviews

1. Understanding Regional Resilience

The following questions relate to regional economic development policies and practices which deal with economic change / economic restructuring:

1. What do you consider to be the current policy priorities in the [insert region name]?
Prompts:
 - For example: retention of current levels and types of employment; innovation / diversification of economic functions into related sectors; evolution of new forms of economic activity?
 - To what extent do these policy priorities alter for different sectors?
 - How does the focus of these priorities differ for investment in different skill levels or types of skills?
 - Which forms of physical development policies and practices are important to support firms and workers in the region to adapt to economic change?
 - Which indicators do you think are the most important measures of adaption to economic change for the region?
2. To what extent do policy priorities differ depending on the stage that policy / practice is being delivered? For example, comparing management of economic shocks / specific plant-closures with other periods?
 - Do the key indicators to measure success change between these two periods?
3. Has your understanding of what the policy priorities are changed over time (for example, when compared to the period prior to the financial economic crisis and great recession)?

2. Policy making and the role of institutions in the region

4. What is your/ your organisations role in policy making in the [insert name of regional lead policy making body] has this changed in the last few years?
5. Do policy making arrangements operate in the way intended through published documents such [name doc]
6. Does regional policy reflect the view of a range of stakeholders? Is this important?
7. What is the impact of national government on established policy in the region? Are there ways in which this enables / restricts policy approaches that you would like to see?
8. Does European policy and funding enable or restrict established policies and practices in the region? Does this vary for different areas of policy?
9. To what extent are wider influences on policy in the region influential (for example, from think tanks, commissioned research reports, and/or other sources)?
10. Can regional policy makers effectively influence the national and/or European policy so that regional priorities are reflected in national policy?
11. Are there any other specific legal / administrative barriers which act to restrict the types of policies and practices that you think should be established in the region? To what extent does this vary for different areas of policy?

3. The approach to policy making in specific cases (where stakeholders were involved in policy response – and where not already covered in previous answers)

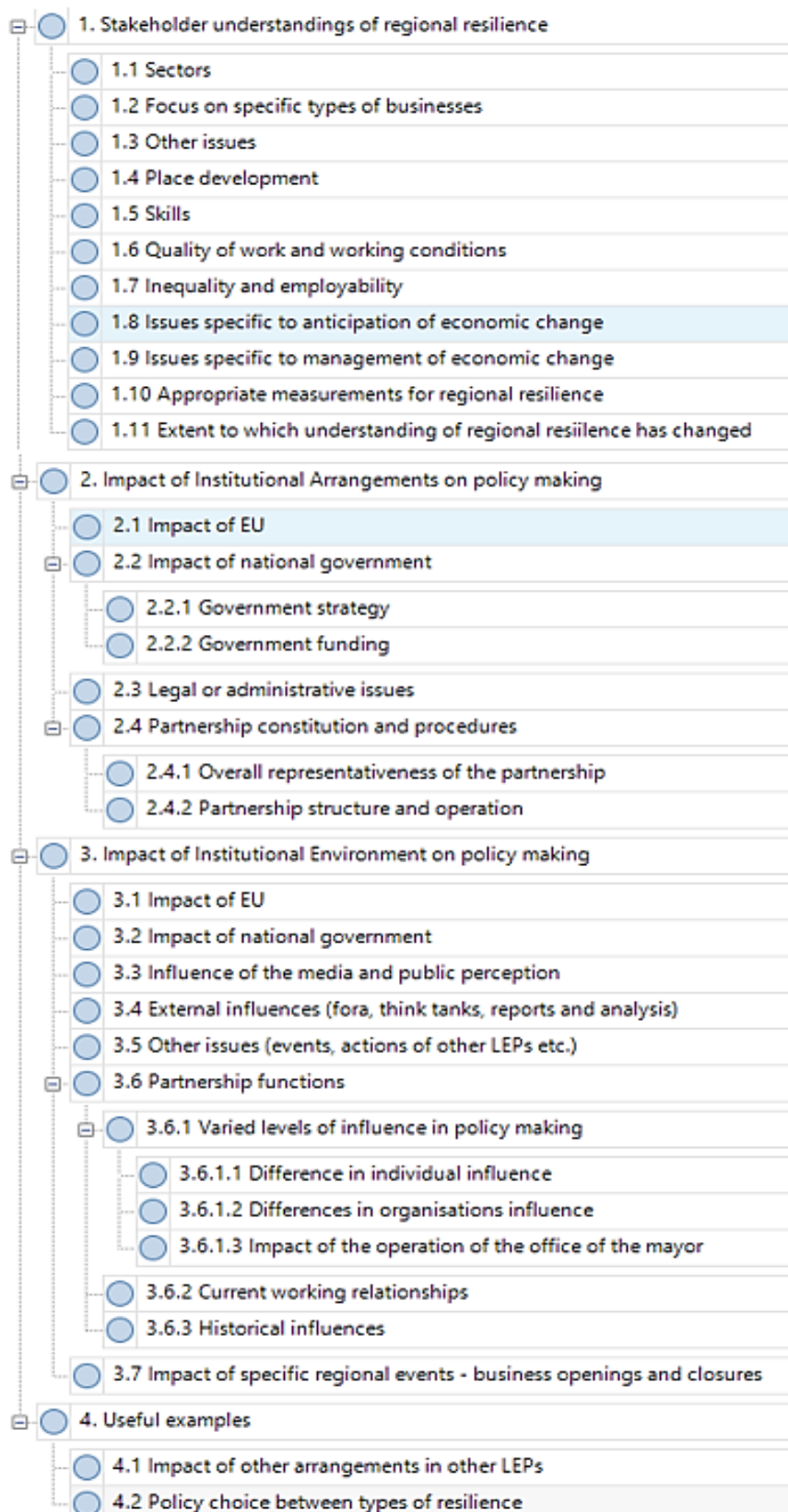
12. Considering the job losses in specific cases, [Steel / Shipyard] case, why were the specific measures provided in this case developed? To what extent would this have differed for other sectors?
13. Was the process of partnership formation and deciding which measures to provide to dismissed workers different to the normal policy making process in the region, if yes why and what were the effects of this?
14. How was success measured in this case? Is this different to the way in which you would measure success in other contexts? Was this the most appropriate way of understanding success in this case?
15. Did the experience of this case change the way you think about regional policy priorities and measurement of success in relation to managing economic change /economic restructuring?
16. Lastly, are there any documents and/or data which would help to illustrate the issues discussed?

Case study interviews conducted

Tees Valley			
<i>Name</i>	<i>Position</i>	<i>Organisation</i>	<i>Date of interview</i>
Content removed on data protection grounds	Relationship Manager	Federation of Small Businesses	30.08.2018
	Deputy Area Director, North East, Yorkshire & Humber	Department for Business, Energy & Industrial Strategy	07.09.2018
	Director of Strategy	Tees Valley Combined Authority	04.10.2018
	Assistant Director of Policy	North East England Chamber of Commerce	10.10.2018
	Manager	Tees Valley Rural Community Council	16.10.2018
	Chief of Staff to the Mayor of Tees Valley	Tees Valley Combined Authority Mayor	17.10.2018
	North East Regional Manager	The Trades Union Congress (TUC)	05.11.2018
	Director of Enterprise	Teesside University	09.11.2018
	Director	Voluntary Organisations Network, North East	13.11.2018

Southern Denmark			
<i>Name</i>	<i>Position</i>	<i>Organisation</i>	<i>Date of interview</i>
Content removed on data protection grounds	Labour Market Manager	jobcentre, Southern Denmark	18.03.2019
	CEO of growth hub covering one third of the region of Southern DK.	Southern Denmark, Triangle Regional Partnership	19.03.2019
	Director, head of employment and labour	Confederation of Danish Employers	22.03.2019
	Former Regional Director at the Public Employment Service	Social Democratic politician Danish delegate to OECD LEED.	25.03.2019
	CEO / Principal of vocational educational college (largest in DK)	Business School of Southern Denmark, Odense	24.04.2019
	Member of the National Labour Market Advisory Council	Professor at Aalborg University	26.04.2019
	Labour Market Policy Adviser for Regional policy	Danish Trades Union Congress	29.04.2019
	Development Manager in Southern Denmark for 10 years	Region of Southern Denmark	07.05.2019

Coding Structure used to analyse of stakeholder interviews



Appendix 4 Search terms for review of policy and practices

<i>Search terms (descriptors)</i>	<i>Additional terms (related descriptors)</i>	
restructuring policy	specific country names- EU 28 <i>in UK</i> <i>in Ireland</i> <i>In Denmark</i> <i>in Tees Valley</i> <i>in Southern Denmark</i>	
restructuring practice / practices		
restructuring support instruments		
anticipation of restructuring		
management of restructuring		
Social Dialogue		
Territorial coordination		
Active labour market policy	AND support for restructuring Redundancy job loss preventing job loss risk of job loss	AND specific country names- EU 28 <i>in UK</i> <i>in Ireland</i> <i>In Denmark</i> <i>in Tees Valley</i> <i>in Southern Denmark</i>
Dismissed worker support		
Redundancy support		
Income support for workers		
Information, Advice, Guidance		
Provision of labour market information		
Training		
Fostering mobility		
Supply chain support		
Social partners		
Public Employment Services		
Business support / bail-out		
Matching / networking		
Employment incentives		
Fostering innovation		

Wage flexibility		
Working time flexibility		
Access to finance		
Start-up support		
Support of SMEs	sector diversification	
Support of business transfers	economic reorientation	
Support of companies' growth	following closure / bankruptcy	
Support of internationalisation	preventing job loss	
land remediation	jobs at risk	
sites and premises redevelopment		
Attracting investors		

Bibliography

- Armstrong, H., and Taylor, J. (2000). *Regional Economics and Policy*. Oxford: Blackwell.
- Armstrong, K. (2006) *Life after MG Rover: The impact of the closure on the Workers, their Families, and the Community*. London: The Work Foundation
- Aliglica (2006) 'Institutional and Stakeholder Mapping: Frameworks for Policy Analysis and Institutional Change' *Public Organization Review* 6(1):79-90
- Amin, A., 1998. 'Globalisation and regional development: a relational perspective'. *Competition & Change*, 3(1-2), pp.145-165.
- Amin, A. (1999) 'an Institutional Perspective on Regional Economic Development'. *International Journal of Urban and Regional Research* 23 (2), 365
- Amin, A. and Thrift, N. (1995) 'Globalisation, Institutional 'Thickness' and the Local Economy', in Healey, P., Cameron, S., Davoudi, S., Graham, S. and MadaniPour, A. (eds.) *Managing Cities: The New Urban Context*. John Wiley and Sons: Chichester, pp. 91-108.
- Astley, M. S., Giese, J., Hume, M. J., and Kubelec, C. (2009) 'Global Imbalances and the Financial Crisis Q3. Available at SSRN: <https://ssrn.com/abstract=1478419>'. *Bank of England Quarterly Bulletin* 3
- Bache, I. and Flinders, M. (2004) *Multi-Level Governance*: Oxford University Press
- Bailey, D. and Berkeley, N. (2014) 'Regional Responses to Recession: The Role of the West Midlands Regional Taskforce'. *Regional Studies* 48 (11), 1797-1812
- Bailey, D., Bellandi, M., Caloffi, A. and De Propriis, L. (2010) 'Place-renewing Leadership: Trajectories of Change for Mature Manufacturing Regions in Europe', *Policy Studies*, 31, (4), pp. 457-474
- Bailey D., Bentley G., De Ruyter A. and Hall S. (2014) Plant closures and taskforce responses: an analysis of the impact of and policy response to MG Rover in Birmingham, *Regional Studies*, Regional Science 1, 60–78.
- Bailey D. and De Propriis P. (2014) Editorial: Recession, recovery, and resilience?, *Regional Studies* 48, 1757–1760.
- Bailey, M., Elmendorf, D. and Litan, R (2008) *the Great Credit Squeeze: How it Happened, how to Prevent another*. Washington, DC: Brooking Institution
- Bailey, D., Pitelis, C., Tomlinson, P., (2018) 'A place-based developmental regional industrial strategy for sustainable capture f co-created value' *Cambridge Journal of Economics*, Volume 42, Issue 6, November 2018, Pages 1521–1542

-
- Bachtler, J. (2001) 'Where Is Regional Policy Going? Changing Concepts of Regional Policy'. European Regional Policy Research Consortium (EoRPA) Paper No. 01/5.
- Barca, F., McCann, P., and Rodriguez-Pose, A. (2012) 'The case for regional development intervention: place- based versus place- neutral approaches'. *Journal of Regional Science* 52 (1), 134
- Bathelt, H. and Glückler, J. (2003) 'Toward a Relational Economic Geography', *Journal of Economic Geography*, 3, (2), pp. 117-144.
- Bathelt, H. and Glückler, J. (2014) 'Institutional Change in Economic Geography', *Progress in Human Geography*, 38, (3), pp. 340-363.
- Bathelt, H. and Gertler, M. S. (2005) 'The German Variety of Capitalism: Forces and Dynamics of Evolutionary Change'. *Economic Geography* 81 (1), 1-9
- Bhaskar (1978) 'A Realist Theory of Science' London: Verso
- Bhaskar (1979) 'The Possibility of Naturalism' (3rd edition), London: Routledge
- Birch, K., MacKinnon, D. and Cumbers, A. (2010) 'Old Industrial Regions in Europe: A Comparative Assessment of Economic Performance', *Regional Studies*, 44, (1), pp. 35-53.
- Boschma, R. and Capone, G. (2015) 'Institutions and Diversification: Related Versus Unrelated Diversification in a Varieties of Capitalism Framework'. *Research Policy* 44 (10), 1902-1914
- Boschma, R. and Frenken, K. (2011) 'The Emerging Empirics of Evolutionary Economic Geography'. *Journal of Economic Geography* 11 (2), 295-307
- Boschma, R. (2004) 'Competitiveness of Regions from an Evolutionary Perspective', *Regional Studies*, 38, (9), pp. 1001-1014.
- Boschma, R. (2005) 'Proximity and Innovation: A Critical Assessment', *Regional Studies*, 39, (1), pp. 61-74. • Boschma, R. (2009) *Evolutionary Economic Geography and Its Implications for Regional Innovation Policy*. Papers in Evolutionary Economic Geography #09.12, Utrecht University: Utrecht.
- Boschma, R. (2015) 'Towards an Evolutionary Perspective on Regional Resilience', *Regional Studies*, 49, (5), pp. 733-751.
- Boschma, R. and Capone, G. (2015) 'Institutions and Diversification: Related versus Unrelated Diversification in a Varieties of Capitalism Framework', *Research Policy*, 44, (10), pp. 1902–1914.
- Boschma, R. and Frenken, K. (2006) 'Why is Economic Geography not an Evolutionary Science? Towards an Evolutionary Economic Geography', *Journal of Economic Geography*, 6, (3), pp. 273-302.
- Boschma, R. and Frenken, K. (2009) 'Some Notes on Institutions in Evolutionary Economic Geography', *Economic Geography*, 85, (2), pp. 151-158.

-
- Boschma, R. and Frenken, K. (2010) 'The Spatial Evolution of Innovation Networks: A Proximity Perspective', in Boschma, R. and Martin, R. (eds) *The Handbook of Evolutionary Economic Geography*. Edward Elgar: Cheltenham, pp. 120-135.
- Boschma, R. and Frenken, K. (2011) 'The Emerging Empirics of Evolutionary Economic Geography', *Journal of Economic Geography*, 11, (2), pp. 295-307. •
- Boschma, R. and Frenken, K. (2015) *Evolutionary Economic Geography. Papers in Evolutionary Economic Geography #15.18*, Utrecht University: Utrecht.
- Bosker, M., Brakman, S., Garretsen, H., and Schramm, M. (2010) 'Adding Geography to the New Economic Geography: Bridging the Gap between Theory and Empirics'. *Journal of Economic Geography* 10 (6), 793-823
- Brakman, S., Garretsen, H., and van Marrewijk, C. (2015) 'Regional Resilience Across Europe: On Urbanisation and the Initial Impact of the Great Recession'. *Cambridge Journal of Regions, Economy and Society* 8 (2), 225-240
- Bristow, G. (2005). 'Everyone's a 'winner': problematising the discourse of regional competitiveness'. *Journal of Economic Geography*, 5: 285–304
- Bristow, G. (2010). *Critical reflections on regional competitiveness: theory, policy, and practice*. Routledge Studies in Human Geography. London: Routledge.
- Bristow, G. (2010) 'Resilient Regions: Re-'place'ing Regional Competitiveness'. *Cambridge Journal of Regions, Economy and Society* 3 (1), 153-167
- Bristow, G. and Healy, A. (2015) 'Crisis Response, Choice and Resilience: Insights from Complexity Thinking'. *Cambridge Journal of Regions, Economy and Society* 8 (2), 241-256
- Bristow, G. and Healy, A. (2018). *Economic Crisis and the Resilience of Regions*. New Horizons in regional Science Series. Cheltenham, UK: Edward Elgar Publishing.
- Bruff, I. (2011) 'What about the Elephant in the Room? Varieties of Capitalism, Varieties in Capitalism'. *New Political Economy* 16 (4), 481-500
- Bryman, (2008), 'Of methods and methodology' *Qualitative Research in Organizations and Management: An International Journal*, 22 August 2008, Vol.3 (2), pp.159-168
- Bryman, A. (2016) *Social Research Methods*. Fifth Edition. edn. Oxford: Oxford University Press
- Camagni, R. and Capello, R., 2012. 'Globalization and Economic Crisis: How Will the Future of European Regions Look?'. In *Globalization Trends and Regional Development*. Edward Elgar Publishing.
- Castellacci, F. 2007. 'Evolutionary and new growth theories. Are they converging?' *Journal of Economic Surveys* 21 (3): 585–627.

-
- Christopherson, S., Michie, J., and Tyler, P. (2010) 'Regional Resilience: Theoretical and Empirical Perspectives'. *Cambridge Journal of Regions, Economy and Society* 3 (1), 3-10
- Clark, J., Huang, H. Walsh, J 'A typology of 'innovation districts': what it means for regional resilience', *Cambridge Journal of Regions, Economy and Society*, Volume 3, Issue 1, March 2010, Pages 121–137
- Coenen, L., Moodysson, J., and Martin, H. (2015) 'Path Renewal in Old Industrial Regions: Possibilities and Limitations for Regional Innovation Policy'. *Regional Studies* 49 (5), 850-865
- Cooke, P. (2012) 'Relatedness, Transversality and Public Policy in Innovative Regions', *European Planning Studies*, 20:11, 1889-1907
- Collier (1994), 'Critical Realism: An Introduction to Roy Bhaskar's Philosophy' London: Verso
- Courvisanos J., Jain A., and Mardaneh K. (2015) Economic resilience of regions under crises: a study of the Australian economy, *Regional Studies*.
- Cowell, M. (2013) 'Bounce back or move on: Regional resilience and economic development planning', *Cities*, Volume 30, 2013, Pages 212-222,
- Crescenzi, R., Luca, D., and Milio, S. (2016) 'The Geography of the Economic Crisis in Europe: National Macroeconomic Conditions, Regional Structural Factors and Short-Term Economic Performance'. *Cambridge Journal of Regions, Economy and Society* 9 (1), 13-32
- Crouch, C. and Keune, M. (2005) 'Changing Dominant Practice: Making Use of Institutional Diversity in Hungary and the United Kingdom', in Streeck, W. and Thelen, K. (eds.) *Beyond Continuity: Institutional Change in Advanced Political Economies*. Oxford University Press: Oxford, pp. 83-102.
- Crouch, C., Le Galès, P., Trigilia, C. and Voelzkow, H. (eds.) (2004) *Changing Governance of Local Economies: Responses of European Local Production Systems*. Oxford University Press: Oxford.
- Crouch, C., Schröder, M. and Voelzkow, H. (2009) 'Regional and Sectoral Varieties of Capitalism', *Economy and Society*, 38, (4), pp. 654-678.
- Cuadrado-Roura, J. R. and Maroto, A. (2016) 'Unbalanced Regional Resilience to the Economic Crisis in Spain: A Tale of Specialisation and Productivity'. *Cambridge Journal of Regions, Economy and Society* 9 (1), 153-178
- Cuadrado-Roura, J. R., Martin, R., and Rodríguez-Pose, A. (2016) 'The Economic Crisis in Europe: Urban and Regional Consequences'. *Cambridge Journal of Regions, Economy and Society* 9 (1), 3-11

-
- Cumbers, A., Featherstone, D., MacKinnon, D., Ince, A., and Strauss, K. (2016) 'Intervening in Globalization: The Spatial Possibilities and Institutional Barriers to labour's Collective Agency'. *Journal of Economic Geography* 16 (1), 93-108
- Davies, S. (2011) 'Regional Resilience in the 2008–2010 Downturn: Comparative Evidence from European Countries'. *Cambridge Journal of Regions, Economy and Society* 4 (3), 369-382
- Dawley, S. (2008) 'Advanced manufacturing skills tracking survey: A report investigating the post-closure resettlement patterns of the former Atmel workforce'. Centre for Urban and Regional Development Studies.
- Dawley, S., Pike, A., and Tomaney, J. (2010) 'Towards the Resilient Region?'. *Local Economy: The Journal of the Local Economy Policy Unit* 25 (8), 650-667
- Dawley S, Marshall JN, Pike A, Pollard J, Tomaney J. (2013) 'Continuity and Evolution in an Old Industrial Region: The Labour Market Dynamics of the Rise and Fall of Northern Rock'. *Regional Studies* 2014, 48(1), 154-172.
- Dawley S. (2014) 'Creating New Paths? Offshore Wind, Policy Activism, and Peripheral Region Development'. *Economic Geography* 2014, 90(1), 91-112
- Dawley, S., MacKinnon, D., Cumbers, A., and Pike, A. (2015) 'Policy Activism and Regional Path Creation: The Promotion of Offshore Wind in North East England and Scotland'. *Cambridge Journal of Regions, Economy and Society* 8 (2), 257-272
- Dijkstra, L., Garcilazo, E., and McCann, P. (2015) 'The Effects of the Global Financial Crisis on European Regions and Cities'. *Journal of Economic Geography* 15 (5), 935-949
- Diodato, D. and Weterings, A. B. R. (2015) 'The Resilience of Regional Labour Markets to Economic Shocks: Exploring the Role of Interactions among Firms and Workers'. *Journal of Economic Geography* 15 (4), 723-742
- Doran, J. and Fingleton, B. (2016) 'Employment Resilience in Europe and the 2008 Economic Crisis: Insights from Micro-Level Data'. *Regional Studies* 50 (4), 644-656
- Doran, J. and Fingleton, B. (2015) 'Resilience from the Micro Perspective'. *Cambridge Journal of Regions, Economy and Society* 8 (2), 205-223
- Edwards, P. K., O'Mahoney, J., and Vincent, S. (eds.) (2014) *Studying Organizations using Critical Realism: A Practical Guide*. Oxford: Oxford University Press
- Edwards, T. (2003) *Varieties of Capitalism: The Institutional Foundations of Comparative Advantage*. Oxford: Blackwell Publishing Ltd
- Eliason, M. and Storrie, D. (2006) 'Lasting or Latent Scars? Swedish Evidence on the Long-Term Effects of Job Displacement'. *Journal of Labor Economics* 24 (4), 831

-
- Eryadin, A. (2015). 'The role of regional policies along with the external and endogenous factors in the resilience of regions'. Cambridge Journal of Regions, Economy and Society.
- ESPON, (2014) "Territorial Dynamics in Europe: Economic Crisis and the Resilience of Regions", September 2014. European Union, Luxembourg
- European Commission (2008) *Industrial Relations in Europe 2008*. Brussels: European Commission
- European Commission (2009) *Economic Crisis in Europe: Causes, Consequences and Responses*. Brussels: DG Economic and Financial Affairs, European Commission
- European Commission (2012) *Commission Staff Working Document: Restructuring in Europe 2011*. Brussels: European Commission
- European Commission (2013) *Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions EU Quality Framework for Anticipation of Change and Restructuring*. Brussels: European Commission
- European Commission (2014) *A Comprehensive EU Response to the Financial Crisis: Substantial Progress Towards a Strong Financial Framework for Europe and a Banking Union for the Eurozone*. trans. by European Commission. Brussels: European Commission
- European Commission (2019) '*The great recession: main determinants of regional economic resilience in the EU*'. European Commission. Brussels: European Commission
- European Parliament (2012) *Report with Recommendations to the Commission on Information and Consultation of Workers, Anticipation and Management of Restructuring (2012/2061(INI))*. Brussels: European Parliament, Committee on Employment and Social Affairs
- Evenhuis E (2017) 'New directions in researching regional economic resilience and adaptation' Geography Compass.
- Evenhuis E., and Dawley S. 'Evolutionary Perspectives on Economic Resilience in Regional Development'. In: Williams N; Vorley T, ed. *Creating Resilient Economies: Entrepreneurship, Growth and Development in Uncertain Times*. Cheltenham: Edward Elgar, 2017.
- Fagerberg, J. 2013. 'Innovation Studies: Evolution and Future Challenges'. Oxford: Oxford University Press
- Fingleton, B., Garretsen, H. and Martin, R., 2012. 'Recessionary shocks and regional employment: evidence on the resilience of UK regions'. *Journal of regional science*, 52(1), pp.109-133.

-
- Fratesi, U., 2012. 'A globalization-based taxonomy of European regions'. *Regional Science Policy & Practice*, 4(1), pp.1-23.
- Frenken, K., Van Oort, F., and Verburg, T. (2007) 'Related Variety, Unrelated Variety and Regional Economic Growth'. *Regional Studies* 41 (5), 685-697
- Gardiner, B., Martin, R., and Tyler, P. (2011) 'Does Spatial Agglomeration Increase National Growth? some Evidence from Europe'. *Journal of Economic Geography* 11 (6), 979-1006
- Gertler, M. S. (2010) 'Rules of the Game: The Place of Institutions in Regional Economic Change'. *Regional Studies* 44 (1), 1-15
- Gong, H., and Hassink, R. (2017). Regional resilience: The critique revisited. In N. Williams & T. Vorley (Eds.), *Creating resilient economies: Entrepreneurship, growth, and development in uncertain times* (pp. 206–216). Cheltenham: Edward Elgar.
- Grabher, G. (1993) 'The weakness of strong ties; the lock-in of regional development in Ruhr area' *The embedded firm; on the socioeconomics of industrial networks*. 255-277
- Grabher, G. and Stark, D. (1997) *Organizing Diversity: Evolutionary Theory, Network Analysis and Postsocialism*, *Regional Studies*, 31:5, 533-544
- Grillitsch, M. and Asheim, B. (2018) 'Place-based innovation policy for industrial diversification in regions', *European Planning Studies*, 26:8
- Grillitsch, M. and Sotarauta, M., (2018) "Regional Growth Paths: From Structure to Agency and Back," *Papers in Innovation Studies*
- Hall, P. A. (1986) 'The State and Economic Decline', in Elbaum, B. and Lazonick, W. (eds.) *The Decline of the British Economy*. Clarendon Press: Oxford, pp. 266- 302.
- Hall, P. A. and Taylor, R. C. R. (1996) 'Political Science and the Three Institutionalisms', *Political Studies*, 44, (5), pp. 936-957.
- Hall, P. A. and Soskice, D. (2001) 'An Introduction to Varieties of Capitalism', in Hall, P. A. and Soskice, D. (eds.) (2001) *Varieties of Capitalism: The Institutional Foundations of Comparative Advantage*. Oxford University Press: Oxford, pp. 1-68. Hall, P. A. and Thelen, K. (2009) 'Institutional Change in Varieties of Capitalism'. *Socio-Economic Review* 7 (11), 7
- Hall, P. A. and Thelen, K. (2009) 'Institutional Change in Varieties of Capitalism', *Socio-Economic Review*, 7, (1), pp. 7-34.
- Hall, P. A. (2014) 'Varieties of Capitalism and the Euro Crisis'. *West European Politics* 37 (6), 1223-1243
- Harvey, D. (2006) 'Neo-liberalism as creative destruction', *Geografiska Annaler: Series B, Human Geography*, 88:2, 145-158

-
- Harvey, D. (1982) 'The Limits to Capital', Oxford: Blackwell
- Hassink, R. (2010) 'Regional Resilience: A Promising Concept to Explain Differences in Regional Economic Adaptability' *Cambridge Journal of Regions Economy and Society*
- Hassink, R. & H. Gong (2020). 'Regional Resilience'. In: Kobayashi, A, Boyle M, Castree, N, Collins, F, Crampton J, de Leeuw, S, Ho, E, Luginah, I, Maharaj, B and J Tyner (eds.) *International Encyclopedia of Human Geography*. Oxford: Elsevier.
- Hassink, R. and Klaerding, C. (2011) 'Evolutionary Approaches to Local and Regional Development Policy', in Pike, A., Rodríguez-Pose, A. and Tomaney, J. (eds.) *Handbook of Local and Regional Development*. Routledge: London, pp. 139-148.
- Hassink, R., Klaerding, C. and Marques, P. (2014) 'Advancing Evolutionary Economic Geography by Engaged Pluralism', *Regional Studies*, 48, (7), pp. 1295- 1307.
- Hassink, R. and Shin, D.-H. (2005) 'Guest Editorial', *Environment and Planning A: Economy and Space*, 37(4), pp. 571–580
- Hassink, R., Isaksen, A., Trippel, M. (2019): Towards a comprehensive understanding of new regional industrial path development, *Regional Studies*
- Henning, M., Stam, E. and Wenting, R. (2013) 'Path Dependence Research in Regional Economic Development: Cacophony or Knowledge Accumulation?', *Regional Studies*, 47, (8), pp. 1348-1362.
- Hervas-Oliver, J-L. Garrigos, J. Gil-Pechuan, I. (2011) 'Making sense of innovation by R&D and non-R&D innovators in low technology contexts: A forgotten lesson for policymakers' *Technovation* Volume 31, Issue 9, September 2011, Pages 427-446
- Hill E., St. Clair, T., Wial H., Wolman, H., Atkins, P., Blumenthal, P., Ficenec S. and Friedhoff, A. (2011) "Economic Shocks and Regional Economic Resilience" in *Building Resilient Regions: Urban and Regional Policy and Its Effects*
- Holm, J. R. and Østergaard, C. R. (2015) 'Regional Employment Growth, Shocks and Regional Industrial Resilience: A Quantitative Analysis of the Danish ICT Sector'. *Regional Studies* 49 (1), 95-112
- Hu (2015) 'Exploring Differentiated Economic Adaptation and Adaptability of Old Industrial Areas in Transitional China'
- Hudson, R. (2010) 'Resilient Regions in an Uncertain World: Wishful Thinking or a Practical Reality?'. *Cambridge Journal of Regions, Economy and Society* 3 (1), 11-25
- Ibert & Schmidt, (2014) 'Once You Are In You Might Need to Get Out: Adaptation and Adaptability in Volatile Labor Markets—the Case of Musical Actors'. *Social Sciences*.

-
- Isaksen, A., 2014. 'Industrial development in thin regions: trapped in path extension?'. *Journal of economic geography*, 15(3), pp.585-600.
- IRENE (2014) *Responsible Restructuring* [online] available from <<http://responsible-restructuring.eu/publications-and-resources/irene/>> [02/10 2017]
- Johnson, J. (2001) 'Path Contingency in Post-communist Transformations' *Comparative Politics* Vol. 33, No. 3
- Keating, M. (2016) 'Contesting European Regions'. *Regional Studies*, 1-10
- Keohane, R.O. and Nye Jr, J.S., 2000. 'Globalization: What's new? What's not?(And so what?)'. *Foreign policy*, pp.104-119.
- Krugman, P. (2009) 'How did Economists Get it so Wrong?'. *New York Times* September 6, 2009
- Krugman, P. (2011) 'The New Economic Geography, Now Middle-Aged'. *Regional Studies* 45 (1), 1-7
- Kitson, M., Martin, R., Tyler, P. 'Regional Competitiveness: An Elusive yet Key Concept?' *Regional Studies*, Vol. 38.9, pp. 991–999, December 2004
- Lundvall, B.A, Johnson, B, Andersen, E.S., Dalum, B. (2002) 'National Systems of Production, Innovation and Competence Building'. *Research Policy* 31 (2), 213
- Maskell, P. and Malmberg, A. (2007) 'Myopia, Knowledge Development and Cluster Evolution' *Journal of Economic Geography* 7(5):603-618
- MacKinnon D, Dawley S, Pike A, Cumbers A. (2019) 'Rethinking Path Creation: A Geographical Political Economy Approach'. *Economic Geography* 2019
- Mackinnon D. and Derickson K. (2013) 'From resilience to resourcefulness: a critique of resilience policy and activism', *Progress in Human Geography* 37, 253–270.
- Martin, R. (2012) 'Regional Economic Resilience, Hysteresis and Recessionary Shocks'. *Journal of Economic Geography* 12 (1), 1-32
- Martin, R. and Sunley, P. (2015) 'On the Notion of Regional Economic Resilience: Conceptualization and Explanation'. *Journal of Economic Geography* 15 (1), 1-42
- Martin, R., Sunley, P., Gardiner, B., and Tyler, P. (2016) 'How Regions React to Recessions: Resilience and the Role of Economic Structure'. *Regional Studies* 50 (4), 561-585
- Martin, R., Sunley, P., and Tyler, P. (2015) 'Local Growth Evolutions: Recession, Resilience and Recovery'. *Cambridge Journal of Regions, Economy and Society* 8 (2), 141-148

-
- McCann, P. and Ortega-Argilés, R. (2015) 'Smart Specialization, Regional Growth and Applications to European Union Cohesion Policy', *Regional Studies*, 49, (8), pp.1291-1302.
- Mikecz, R. (2012) 'Interviewing Elites: Addressing Methodological Issues'. *Qualitative Inquiry* 18 (6), 482-493
- Morgan, K. (2004). 'Sustainable regions: governance, innovation and scale'. *European Planning Studies*, 12: 871–819.
- National Audit Office (2016) 'English devolution deals' National Audit Office, London
- Neffke, F. Henning, M. & Boschma, R. (2011) How Do Regions Diversify over Time? Industry Relatedness and the Development of New Growth Paths in Regions, *Economic Geography*, 87:3, 237-265
- Nelson, R., Winter, S. G. 1982. 'An Evolutionary Theory of Economic Change' Cambridge: Belknap Press/Harvard University Press.
- North, D. (1991) *Institutions, Institutional Change and Economic Performance*. Cambridge: Cambridge University Press
- Obstfeld, M. and Rogof, K. (2009) *Global Imbalances and the Financial Crisis: Products of Common Causes*. California: University of California
- O'Brien P, Coombes M, Dawley S, Evans L, Pike A. 'How to Create Great Jobs: Towards a Regional Industrial Strategy for Tees Valley: A Report for the TUC by the Centre for Urban and Regional Development Studies', Newcastle University. Trades Union Congress, London: Newcastle University, 2017.
- OECD, (2005). *Building Competitive Regions: Strategies and Governance*. Paris: OECD.
- OECD, (2010) *From Crisis to Recovery: The Causes and Consequences of the Great Recession*. Paris: OECD Insights
- Pendall, R., Foster, K., Cowell, M., (2010) 'Resilience and regions: building understanding of the metaphor' *Cambridge Journal of Regions, Economy and Society*, Volume 3, Issue 1.
- Piattoni, S. (2009) 'Multi-level Governance: A Historical and Conceptual Analysis'. *Journal of European Integration* 31 (2), 163-180
- Pike, A. (2020) 'Coping with deindustrialization in the global North and South' *International Journal of Urban Sciences*
- Pike, A., Rodríguez-Pose, A., and Tomaney, J. (2007) 'What Kind of Local and Regional Development and for Whom?'. *Regional Studies* 41 (9), 1253-1269
- Pike, A., Dawley, S., and Tomaney, J. (2010) 'Resilience, Adaptation and Adaptability'. *Cambridge Journal of Regions, Economy and Society* 3 (1), 59-70

-
- Pike A., MacKinnon D., Cumbers A., Dawley S., McMaster R., (2016). 'Doing evolution in economic geography'. *Economic Geography*, 92(2), 123-144.
- Pike, A., Rodríguez-Pose, A., and Tomaney, J. (2016) 'Shifting Horizons in Local and Regional Development'. *Regional Studies*, 1-12
- Piketty, T. and Saez, E. (2013). IMF Economic Review 61 (3), 456
- Rodríguez-Pose, A. (2013) 'Do Institutions Matter for Regional Development?'. *Regional Studies* 47 (7), 1034-1047
- Rodríguez-Pose, A. and Di Cataldo, M. (2015) 'Quality of Government and Innovative Performance in the Regions of Europe'. *Journal of Economic Geography* 15 (4), 673-706
- Rodríguez-Pose, A. and Ezcurra, R. (2010) 'Does Decentralization Matter for Regional Disparities? A Cross-Country Analysis'. *Journal of Economic Geography* 10 (5), 619-644
- Rodrik, D. (2004) 'Institutions Rule: The Primacy of Institutions Over Geography and Integration in Economic Development'. *Journal of Economic Growth* 9 (2), 131
- Rodrik, D., (2018). 'Populism and the Economics of Globalization'. *Journal of international business policy*, 1(1-2), pp.12-33.
- Sabot, E. (1999) 'Dr Jekyll, Mr H(i)De: The Contrasting Face of Elites at Interview'. *Geoforum* 30 (4), 329
- Sayer, A. (2007) 'Method and Politics: Avoiding Determinism and Embracing Normativity', in Tickell, A., Sheppard, E., Peck, J. and Barnes, T. J. (eds) *Politics and Practice in Economic Geography*. Sage: London, pp. 95-105.
- Sayer, A. (2010) *Method in Social Science*. Revised 2nd Edition. Routledge: London.
- Sapir, A. (2006) 'Globalization and the Reform of European Social Models'. *Journal of Common Market Studies* 44 (2), 369
- Schamp, E.W.. (2010). On the notion of co-evolution in economic geography. *The Handbook of Evolutionary Economic Geography*. 432-449.
- Schmidt, V. (2008) 'Discursive Institutionalism: The Explanatory Power of Ideas and Discourse'. *Annual Review of Political Science* 11 (1), 303
- Schmidt, V. (2012) 'The State and Political Economic Change: Beyond Rational Choice and Historical Institutionalism to Discursive Institutionalism. *State, Globalization and Multilateralism*, pages 99-118.
- Sensier, M., Bristow, G., and Healy, A. (2016) 'Measuring Regional Economic Resilience Across Europe: Operationalizing a Complex Concept'. *Spatial Economic Analysis* 11 (2), 128-151

-
- Simmie, J. and Martin, R. (2010) 'The Economic Resilience of Regions: Towards an Evolutionary Approach'. *Cambridge Journal of Regions, Economy and Society*
- Solly, A. (2016) Place-based innovation in Cohesion Policy: meeting and measuring the challenges, *Regional Studies, Regional Science*, 3:1, 193-198
- Sørensen, E. (2006) 'Metagovernance: The Changing Role of Politicians in Processes of Democratic Governance'. *The American Review of Public Administration* 36 (1), 98-114
- Stiglitz, J. (2010) 'Interpreting the Causes of the Great Recession of 2008'. Bank for International Settlements Annual Conference: Monetary and Economic Department
- Strambach, S. and Halkier, H. (2013) 'Reconceptualizing change - Path Dependency, path plasticity and knowledge combination' *Zeitschrift für Wirtschaftsgeographie* 57(1-2):1-14
- Storper, M., (1995) 'The resurgence of regional economies, ten years later: the region as a nexus of untraded interdependencies' *European urban and regional studies*, 2(3), pp.191-221.
- Storper, M. (2011) 'Why do Regions Develop and Change? the Challenge for Geography and Economics'. *Journal of Economic Geography* 11 (2), 333-346
- Storper, M. (2013) 'Keys to the city: how economics, institutions, social interactions and politics affect regional development' Princeton University Press, Princeton, USA
- Streeck, W. (2009) *Re-forming Capitalism: Institutional Change in the German Political Economy*. Oxford University Press: Oxford.
- Streeck, W. and Thelen, K. (2005) 'Institutional Changes in Advanced Political Economies', in Streeck, W. and Thelen, K. (eds.) *Beyond Continuity: Institutional Change in Advanced Political Economies*. Oxford University Press: Oxford, pp. 1-39
- Swanstrom, T., 2008. 'Regional resilience: a critical examination of the ecological framework' (No. 2008, 07). Working paper
- Tabellini, G. 'Culture and Institutions: Economic Development in the Regions of Europe', *Journal of the European Economic Association*, Volume 8, Issue 4, 1 June 2010, Pages 677–716
- Taylor, J. (2009) 'the Financial Crisis and the Policy Responses: An Empirical Analysis of what Went Wrong'. NBER Working Paper 14631
- Tomaney, J., Pike, A., and Rodríguez-Pose, A. (2010) 'Local and Regional Development in Times of Crisis'. *Environment and Planning A* 42 (4), 771-779

-
- Trippl, M., Grillitsch, M., Isaksen, A.. (2018). "Exogenous sources of regional industrial change: Attraction and Attraction and absorption of non-local knowledge for new path development." *Progress in Human Geography* 42 (5): 687–705
- Trippl, M., Frangenheim, A., Chlebna, C., (2019) 'Beyond the Single Path View : Interpath Dynamics in Regional Contexts' , *Economic Geography*. Vol. 00 No. 00 2020
- Von Wright (1971), 'Explanation and Understanding' *Revue Internationale de Philosophie*, 1 January 1981, Vol.35(135), pp.127-142
- Voss, E. (2007) Toolkit Restructuring - Key Findings from the ETUC Project "Strengthening the Role of worker Representation Bodies and Trade Union Organisations within the Framework of Restructuring Operations. Brussels: ETUC
- Weiss, L., (1999). 'Globalization and national governance: antinomy or interdependence?'. *Review of International Studies*, 25, pp.59-88.
- Whitley, R. (1999) 'The Institutional Structuring of Innovation Strategies: Business Systems, Firm Types and Patterns of Technical Change in Different Market Economies' *Organization Studies*
- Wink, R. (2014). Regional economic resilience: European experiences and policy issues. *Raumforschung und Raumordnung*, 72, 85–91.
- Witt, M. and Jackson, G. (2016) 'Varieties of Capitalism and Institutional Comparative Advantage: A Test and Reinterpretation'. *Journal of International Business Studies* 47, 778
- Wolfe D. (2010) 'The strategic management of core cities: path dependency and economic adjustment in resilient regions', *Cambridge Journal of Regions, Economy and Society*, 2010, vol. 3 (pg. 139-152)
- Yamamura, K. and Streeck, W. (2003)'The End of Diversity?: Prospects for German and Japanese Capitalism' *Pacific Affairs* 77(3):573-574