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Manuscript

Lock-in, resilience and path development in old industrial regions: an agency-based explanation

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This paper examines why some old industrial regions (OIRs) show strong lock-ins while others experience weaker ones. To do so, it compares the resilience of two OIRs in northern Spain — Asturias and the Basque Country — to major shocks and structural changes over the last fifty years, tracing their divergent development paths and advancing a tentative explanation for these differences. It employs a mixed-methods approach, combining dynamic shift-share analysis to evaluate regional resilience and the role of economic structure with qualitative analysis of how agency shapes regional trajectories, in addition to taking a historical perspective. The extreme cases of Asturias and the Basque Country offer contrasting examples of lock-in and path breaking (and renewal) in regional development. Asturias illustrates the strength of reproductive agency (place maintenance), while the Basque Country exhibits greater change agency (place leadership), engaging a broader range of actors in regional transformation. Ultimately, the paper advocates a holistic approach to regional development that combines both quantitative and qualitative analysis.

Keywords: agency, lock-in, resilience, path dependence, old industrial regions

JEL Classifications: N94, O25, R11, R58

Introduction

The concept of path dependence has been increasingly used in evolutionary economic geography (EEG) to explain regional development, initially to account for lock-in situations and, more recently, also to explain different evolving scenarios. Path dependence, broadly defined, can have both negative and positive effects on regional economic performance and can be used to explain why change occurs in a particular direction (Martin and Sunley, 2006; Martin, 2010; Henning et al., 2013). Path dependence and lock-in are particularly evident in old industrial regions (OIRs) that have faced several important dilemmas of adaptation (Grabher, 1993; Birch et al., 2010; Hassink, 2010; Evenhuis, 2016) and taken different industrial paths (Isaksen et al., 2019; Blazek et al., 2020). Regional path development results from the interplay between economic structure and agency (Martin and Sunley, 2006; Grillitsch and Sotarauta, 2025) and both affects and is affected by each region's resilience, that is, its capacity to reshape its socioeconomic structure (Boschma, 2015; Martin and Sunley, 2015; Evenhuis, 2017).

This paper's main research question, following Martin and Sunley (2006) and Hassink (2010) is: why we find relatively strong lock-ins in some OIRs and relatively weak ones in others? To answer this question, we analyse the resilience of two OIRs in the north of Spain, Asturias and the Basque Country, to the main shocks experienced over the last fifty years — particularly, the three economic crises of 1975–1985,1991–1994 and 2007–2013 — and to the deindustrialisation process that has happened in Europe, examine their different development paths, and suggest a tentative explanation. This paper employs a dual methodology, using a quantitative approach (dynamic shift-share

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analysis) to examine the resilience of the two regions and the role of economic structure (Martin et al., 2016), and qualitative methods to analyse the role played by agency in the path development of each region (Blazek and Kveton, 2023). It also adopts an explicit historical approach (Henning, 2019; Bianchi et al., 2024; Martin and Sunley, 2022). The extreme cases of Asturias and the Basque Country are good examples of lock-in and path dependence and path breaking and renewal, respectively, in regional development. As in other works on OIRs (Evenhuis, 2016; Blazek and Kveton, 2023; Steen et al., 2023), this study uses comparative analysis to explore the factors that may account for the different path development of each region.

The paper has six parts. The first two parts develop the theoretical framework based on the literature on lock-ins, resilience and regional path development and on the role of actors and agency. Then, the cases, methodology, data and sources employed are presented. The following two parts analyse, first, the resilience of the two regions to the main economic crises and the role of economic structure, and secondly, the role played by agency and actors in their respective development paths. Finally, we offer some conclusions with implications for further research in this field.

Lock-in, resilience and path development in OIRs

Path dependence and lock-in were concepts employed to explain the lack of renewal of OIRs. According to the seminal work of Grabher (1993, 265), the lock-in situation of the Ruhr region was the outcome of a previous process of increasing specialisation that undermined its adaptability to shocks and changes in the future. Three types of lock-in can be identified: functional (inter-firm relationships, particularly between large enterprises and SMEs); cognitive (a shared world-view or mindset); and political (cooperative relations between industry, the government, unions and professional associations). Cognitive and political lock-ins are strongly related: they form a thick "institutional tissue" (political administration, trade unions, large enterprises, firms and workers) that can form a "self-sustaining coalition" that hinders renewal and restructuring (Grabher, 1993; Hassink, 2010, 452).

Lock-in must be framed within the broader typology of different development paths established by EEG. Martin and Sunley distinguish between a phase of positive lock-in in which increasing returns and positive externalities reinforce industrial dynamism, and another phase of negative lock-in, in which the previous structures become a source of increasing rigidity and inflexibility. (Negative) lock-in is a particular outcome rather than an inexorable tendency of path dependence, e.g., some paths and places are more conducive to lock-in than others (Martin and Sunley, 2006; Martin, 2010; Hassink, 2010).

EEG conceptualises resilience as the capacity of a region to resist, adapt, respond, recover and/or renew after a shock (Martin, 2012; Martin and Sunley, 2015) and its overall outcome (Evenhuis, 2017; Sutton and Arku, 2022). There is a broad consensus on the relationship between resilience and long-run development paths: regions with a low degree of resilience experience negative hysteresis after a shock and are unable either to resume their pre-shock rate or to escape from their previous path, whereas others with a high degree of resilience are able to open up new development paths with higher growth rates than before (Martin and Sunley, 2015). Boschma (2015) distinguishes between adaptation, defining it as a region's ability to resist shocks in the short run, and adaptability, which is a region's capacity to develop new paths in the long run. This latter capacity has been labelled as transformative resilience (Sutton and Arku, 2022; Trippl et al., 2024).

The transformation of old paths and the creation of new ones allow regions to escape from lock-in situations (Martin and Sunley, 2006). Numerous studies identify different sources for new path development (sometimes also understood as path creation), mainly based on regional diversification (Boschma, 2015; Boschma et al., 2017; MacKinnon et al., 2019), and there is an acknowledgement of the relevance of the past for the development of new paths (Martin, 2010; Martin and Sunley, 2006). Isaksen et al. (2019) and Grillitsch et al. (2018), incorporate new regional paths: according to these authors, path extension, path upgrading and path branching are more linked to existing regional capabilities and industries (related variety), whereas path importation, path diversification and path creation represent new trajectories resulting from unrelated diversification. However, regional path development is not necessarily linked to economic growth, and this is particularly the case for several OIRs: path delocalisation, path contraction and path downgrading are also recognised in the literature (Blazek et al., 2020) and might be related to lock-in situations.

Regional development must be understood as the interplay between structure and agency. Structural preconditions may imply a tendency for certain forms of path development to be more likely than others, but do not determine outcomes; it is agency, understood as "the purposeful work of powerful actors" (Dinmore et al., 2024), which ultimately explains path development (Martin and Sunley, 2006; Grillitsch and Sotarauta, 2020; Grillitsch and Sotarauta, 2025). The relationship between structure and agency is 2-fold and systemic: firstly, structures constrain actors and, secondly, actors work to shape the very same structures in which they are embedded (Sotarauta and Grillitsch, 2023b).

Structure and agency have also been identified as the factors behind regional lock-ins. Hassink (2010, 454–55) identifies two economic-structural impact factors ("a

Table 1. Agency, resilience and regional development paths.

Reproductive agency			Change agency		
Repetitive entrepreneurship	**Institutional work**	**Place maintenance**	**Innovative entrepreneurship**	**Institutional entrepreneurship**	**Place-based leadership**
Firm/organisation level System level (collective agency, policy coalitions and agendas)			Firm/organisation level System level (collective agency, policy coalitions and agendas)		
Behaviour (reactive) and narrative (past-oriented, change-resistant)			Behaviour (anticipate, proactive) and narrative (future-oriented, transformative)		
← **Resistance and adaptation**			**Resilience and adaptability** →		
Path dependency, lock-in			Path breaking and new path creation		

Source: Authors' elaboration from , Bristow and Healy (2014), Blazek and Kveton (2023), and Roessler et al. (2025).

marked industrial mono-structure," accounting for at least 30% of the region's total manufacturing employment; and a leading industry that is capital intensive, with high entry and exit barriers, above average company size, oligopolistic structure and influential trade unions) and three political-institutional impact factors ("an institutional tissue at the regional level strongly focused on the leading industry," "a national-political system which enables regional actors to influence political questions concerning industrial policy," and "supranational institutions that strongly affect the conditions of industrial policy relevant to the leading industry").

Agency and actors in regional path development

There is increasingly widespread agreement on the key role of agency in explaining both lock-in and regional development paths (Bristow and Healy, 2014; Nilsen et al., 2023; Grillitsch and Sotarauta, 2025). According to Grillitsch and Sotarauta (2020, 7), some regions perform better than others with similar structural preconditions due to the existence of a trinity of change agency that exploits "opportunity spaces" which allow them to escape from lock-in and/or path dependency. These opportunity spaces appear at "critical junctures," moments of social and political fluidity (and change), when the decisions and choices of key actors are freer and more influential in steering institutional development (Capoccia, 2015). Crises are examples of critical junctures in which a change in regional structures is more likely than at other times (Grillitsch et al., 2023).

Following Blazek and Kveton (2023), it is possible to distinguish between different levels and types of agency (see Table 1). Agency may operate at the firm and/or organisation level but also at a system-level, with more powerful implications for the regional development path. System-level agency may support processes of economic restructuring (Isaksen et al., 2019; Steen et al., 2023), foster the emergence and development of new industries, legitimise them (Jolly and Hansen, 2022; Gong et al., 2022) and, along with government policies, even create new paths (Coenen et al., 2015; Uyarra and Flanagan, 2022).

Regarding the types of agency, the literature distinguishes between reproductive and (a trinity of) change agency. From the firm to the system level, reproductive agency comprises repetitive (or routine) entrepreneurship, focused on gradual improvements, institutional work aimed at maintaining existing institutions and practices, and place maintenance (sustaining existing activities in delivering collective goals) (Baekkelund, 2021; Blazek and Kveton, 2023). Reproductive agency is limited for transformation but it can also lead to incremental changes; it may be seen as a source of stability (Benner, 2024).

The trinity of change agency (Grillitsch and Sotarauta, 2020; Sotarauta et al., 2023) is made up of innovative entrepreneurship (activities focused on transforming existing economic fabric or creating new economic activities through the novel combination of knowledge and resources), institutional entrepreneurship (to transform existing regulatory, normative and economic institutions) and place-based leadership (to coordinate and mobilise a variety of regional actors for the collective goal of place development). Institutional entrepreneurship plays an important role in challenging existing worldviews (cognitive lock-in) and dominant actors' rationales (political-institutional lock-in). Redirecting attention to new economic activities depends on changing mindsets and increasing the legitimacy of activities (Gong et al., 2022; Kinosian et al., 2024).

Various forms of agency coexist and evolve over time and may represent contradictory interests (Sotarauta et al., 2023). It is the predominance of one of them at system level that makes the difference (Isaksen et al., 2019; Blazek and Kveton, 2023). Therefore, "change agency and reproductive agency should be observed alongside each other in a continuum" (Stihl, 2024, 591).

Agency is concerned with actions or interventions to produce a desired effect; agents point to the actors that exercise agency (Jolly et al., 2020). Agency is performed by individuals (e.g., entrepreneurs, policymakers, political leaders) or groups (Grillitsch and Sotarauta, 2020; Blazek

Figure 1. Geographical location of Asturias and the Basque Country.

and Kveton 2023; Calignano and Nilsen, 2024). Actors may play different roles across regions and their roles may change over time (Sotarauta et al., 2023; Jolly et al., 2020). Power, the potential to influence path development, is unequally distributed among actors, and that distribution depends on regional characteristics (Nilsen et al., 2023). A high skewness of power relations is the key reason for lock-ins, especially the political-institutional form of lock-in where powerful elites protect vested interests (Grabher, 1993). Firm-level actors in locked-in specialised regions typically operate in a few dominant industries (Nilsen et al., 2023). Agents forge policy coalitions (Hassink, 2010), a form of collective agency that may be linked either to place maintenance or place-based leadership, with different agendas for policy action and narratives that shape opportunity spaces and path-development (Roessler et al., 2025). The role of the state is particularly important in OIRs: government policies may support resistance and lock-in or change and new path developments (Morgan, 2013; Magro et al., 2022; Uyarra and Flanagan, 2022; Steen et al., 2023).

Generally speaking, reproductive agency is more related to reactive behaviour, which is more focused on resistance and adaptation, whereas change agency tends to be more proactive and focused on removing things and/or transforming, that is, on resilience and adaptability (Bristow and Healy, 2014; Magro et al., 2022; Huggins and Thompson, 2023). However, rather than simply studying the attributes or behaviour of the individuals, the analysis of agency must also focus on the relationships connecting actors in regional structures, development paths and change or lock-in processes (Grillitsch and Sotarauta, 2020; Huggins and Thompson, 2023).

Taking these concepts into consideration (see Table 1), after measuring regional resilience and the role of economic structure, this paper identifies the different types of system-level agency over the last few decades, the behaviour and narratives of actors, and their consequent impact on path development in the two regions.

Case context, methodology data and sources

As the interplay between structure and agency needs to be investigated over time, we have adopted a comparative longitudinal case study, with an intensive research strategy (ideographic), of two OIRs over a period of more than 50 years (Grillitsch et al., 2023; Sotarauta and Grillitsch, 2023a; Grillitsch and Sotarauta, 2025). We have selected the "extreme cases" of two OIRs in the north of Spain, Asturias and the Basque Country, with similar starting points at the early 1970s and the same external events but very different agency patterns and outcomes (Evenhuis, 2016; Blazek and Kveton, 2023; Grillitsch and Sotarauta, 2025).

Table 2. Main economic features of Asturias and the Basque Country.

	Asturias	Basque Country
Population (thousands)	1002	2206
GDP 2022 (% of Spain)	1.9%	5.9%
GDP per capita 2022 (€)	25,779	35,977
GDP pc (% EU 27 and Spain)	73%–91%	102%–127%
GVA per occupied 2022 (% Spain's average and ranking Spanish regions)	100% (8)	116% (1)
R&D expenditures/GDP 2021 in % (% Spain's average)	0.9% (62%)	2.3% (164%)
R&D personnel/employment 2022 (% Spain's average)	9.2‰ (72%)	21.6‰ (168%)
RIS 2023 innovation index	83.4 (Moderate Innovator)	119.1 (Strong Innovator)
RIS 2023 II (% of EU27)	77%	123%

Source: INE, Eurostat and Regional Innovation Scoreboard 2023.

For each OIR, we have investigated the regional preconditions at the beginning of the period, their resilience to external events (the three main economic crises between 1975 and 2019), their agency patterns (types of reproductive and/or change agency) throughout the period, and the final outcome (Grillitsch et al., 2023; Blazek and Kveton, 2023).

Asturias and the Basque Country are two OIRs in northern Spain which currently display very different economic and innovation performances (see Table 2). The industrial revolution began in both regions in the 1840s, linked to coal mining and ironworks in Asturias, and to iron ore mining and iron- and steel-making in the Basque Country. However, outcomes and achievements during the rest of the 19th century were rather different in the two regions. In 1900, the Basque Country was, along with Catalonia, the most industrialised region of Spain, leading the ranking of industrial Gross Value Added (GVA) per capita, whereas Asturias ranked much lower in both absolute and per capita terms. From then until the 1970s, industrialisation sped up in both regions. The Basque Country maintained its industrial leadership in Spain, and Asturias climbed to the third position, after the Basque Country and Catalonia, as of 1970 (Domínguez, 2002; Roses and Wolf, 2018). Both regions were hard hit by the economic crisis of 1975–1985 (and in the Basque case by the terrorism of ETA (Abadie and Gardeazabal, 2003)).

In the 1980s, new regional governments and administrations were created from scratch in Spain, with full powers over industrial policy and regional development (Sanz-Menéndez and Cruz-Castro, 2005). In addition, the Basque Country enjoyed a fiscal autonomy that resulted in the region having more public resources per inhabitant than Asturias or the Spanish average (Zubiri, 2015). However, Asturias has been an Objective 1 region, receiving a much higher amount of European Structural Funds than the Basque region (Objective 2) (https://cohesiondata.ec.europa.eu/stories/s/Historic-EU-payments-by-region-1988-2022/47md-x4nq), and also benefiting from a regular flow of subsidies from the national government to maintain coal mining activity in the region (Sendín, 2014).

From the mid-1980s onwards, they experienced very divergent trajectories: whereas the Basque Country successfully managed to transform its industrial fabric and set up a new development path with GDP per capita growth rates higher than the Spanish and European average, Asturias seemingly remained trapped in its industrial past, fell behind, never recovering its former position in the ranking of Spanish and European regions (Table 3 and Figure 2). If GDP per capita and employment can be considered outcomes of the respective resilience of each region, then it appears that the Basque Country performed much better than Asturias, something that other studies, with different approaches and methodologies, have also showcased (Birch et al., 2010; Cueto et al., 2017). In perspective, it seems that both regions moved from positive to negative lock-in (Martin and Sunley, 2006) during the 1975–1985 crisis and then faced a critical juncture in the 1980s with one experiencing positive hysteresis and the other negative hysteresis, and divergent growth paths thereafter (Martin and Sunley, 2015, and Figure 2).

Our work employs a dual methodology. The economic evolution of the two OIRs is described using quantitative variables such as GDP, population and employment. To measure their resilience to external events and the role of economic structure, we employ, following Martin et al. (2016), a dynamic shift-share analysis, with employment as the main variable, and descriptive statistics such as data on industrial change (NACE two-digit level) (Sutton and Arku, 2022). These aforementioned variables have been used to analyse the regional preconditions and outcome at the beginning and at the end of the period, respectively.

The identification of agency types, actors, their behaviour and relative power, and, particularly, the evaluation of the role of agency in regional path development,

Table 3. Asturias and Basque Country GDP per capita, 1900–2015 (selected years).

	1900	1950	1970	1980	1990	2000	2010	2015
Asturias position among 173 European regions	139	150	155	155	152	154	106	155
Asturias position among 17 Spanish regions	7	7	9	10	11	12	9	12
Asturias GDP per capita (173 European regions' average = 100)	57,1%	53,8%	62,5%	69,4%	68,1%	69,2%	88,0%	68,8%
Asturias GDP per capita (Spain = 100)	94,2%	114,2%	101,6%	100,0%	91,0%	87,9%	94,8%	87,5%
BC position among 173 European regions	27	98	114	136	130	57	18	52
BC position among 17 Spanish regions	1	1	1	4	6	3	2	2
BC GDP per capita/173 European regions' average = 100)	124,0%	85,6%	86,2%	80,5%	83,7%	101,1%	128,8%	104,3%
BC GDP per capita (Spain = 100)	204,6%	181,7%	140,2%	116,0%	111,7%	128,5%	138,8%	132,7%

Source: Authors' elaboration from Roses and Wolf (eds.) (2018). GDP in 1990 international dollars, millions.

and the relationship between agency and economic structure, presents important problems of measurement and operationalisation. For agency types, we follow the typology suggested by Blazek and Kveton (2023), trying to identify, for each region, the most important actors and their behaviours and relations that lead to either reproductive agency or change agency. In addition, we analyse development paths in each region and period. In any case, this analysis is far from easy, as agency has to be inferred from the relative power of interacting individuals and groups and their relationships (Grillitsch and Sotarauta, 2020). It is mainly based on secondary sources, including policy documents and grey literature and has been contrasted with several interviews with different regional actors. However, interviews have not been employed as a primary source, which could be problematic in longitudinal studies (Henning, 2019; Steen et al., 2023).[1]

We have resorted to "path tracing" (Sotarauta and Grillitsch, 2023b) to capture the relationship between structure and agency, adopting an explicit historical approach to unravel the causal relationships, and a sequence and periodisation based on the same three periods of the dynamic shift-share analysis: 1975–1991, 1991–2007 and 2008–2019. Our focus is mainly on human agency at the system level, although some examples of organisational-level agency have been highlighted when they eventually brought about systemic effects. Although the two types of agency may coexist, we have highlighted the dominant type for each region and period in grey in Tables 6 and 7. Our method involves a certain degree of subjectivity, but it does not differ substantially from that employed by other works (Blazek and Kveton, 2023; Sotarauta and Grillitsch, 2023a; Nilsen et al., 2023; Sotarauta et al., 2023).

In the following sections, we will attempt to examine, through quantitative and qualitative approaches, the degree of resilience as an outcome, and the role of economic structure and agency in the development path of every region.

Measuring resistance and recoverability in OIRs. The role of economic structure

This section focuses on measuring two dimensions of resilience in OIRs, resistance and recoverability and then addresses the role of economic structure. Measurement is carried out using dynamic shift-share decomposition (Barff and Knight, 1988), which has previously been employed in this context by Martin et al. (2016) and more recently by Delgado-Bello et al. (2023) and Maroto-Sanchez and Cuadrado-Roura (2024).

Thus, in Equation 1, the first term on the right hand-side of the equation captures the national effect, the second term captures the industry-mix effect, and the third term captures the competitive effect, for each region. The national effect measures the change that would occur in regional employment if it grew at the same rate as the national economy. The sectoral effect or "industry-mix" effect captures the positive or negative influence of regional specialisation in sectors with growth rates above or below the national average, respectively $(g_i - g)$. Finally, the competitive effect (or regional effect) measures the specific dynamism of the regional economic sectors compared to their expected evolution at the national level $(g_{ir} - g_i)$.

$$X_r^{t+1} - X_r^t = \sum_i X_{ir}^{t+1} g + \sum_i X_{ir}^t (g_i - g) + \sum_i X_{ir}^t (g_{ir} - g_i). \quad (1)$$

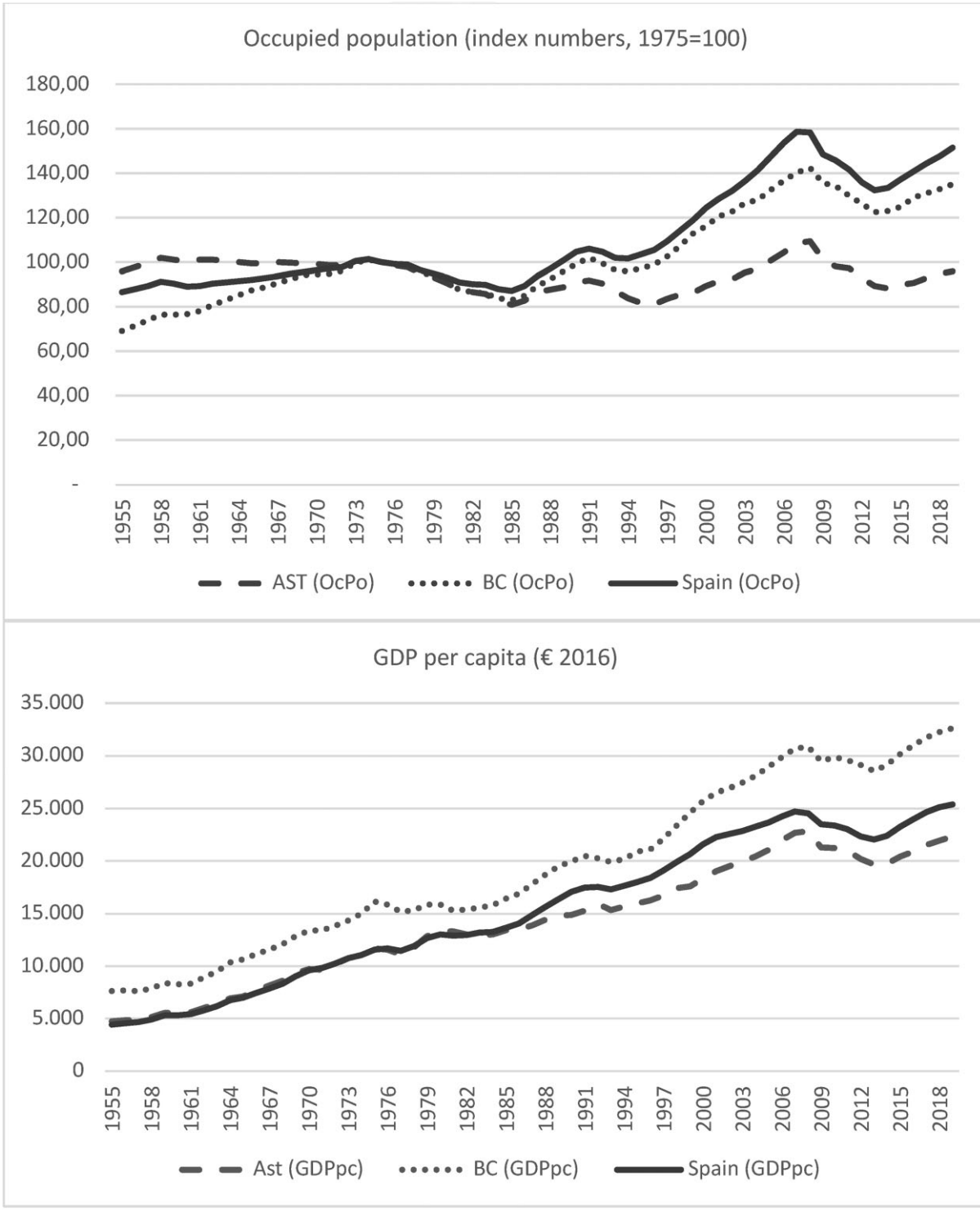

Figure 2. GDP per capita and occupied population of Asturias, the Basque Country and Spain, 1955–2019.
Source: Authors' elaboration from RegData_Sect FEDEA-BBVA v6.3_1955–2022.

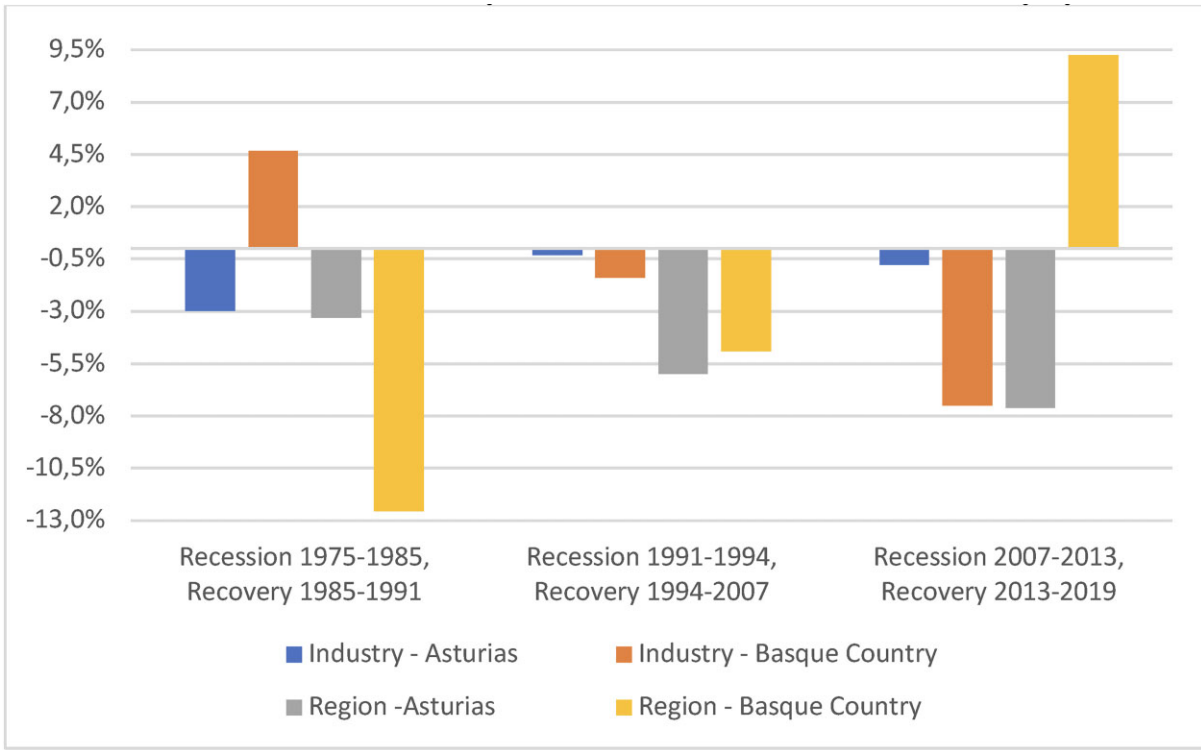

Figure 3. Contribution of industry mix and region-specific effects to regional differential resistance and recoverability for the last three recession-recovery cycles.
Source: See Figure 2.

Following the proposal by Martin et al. (2016), the contributions of the effects for the crisis and recovery phases of the three periods analysed are aggregated in order to summarise their overall contribution. Figure 3 depicts the industry-mix effect and the competitive effect for Asturias and the Basque Country (both effects are shown in relative terms with respect to the employment variation that would have occurred if they had followed the same trajectory as Spain).[2]

In the first period (1975–1991), the contribution of the industry-mix effect in Asturias was negative, while in the Basque Country it was positive, thanks to the latter's greater specialisation in sectors that exhibited growth rates above the national average. Regarding the competitive effect, its overall contribution was negative in both regions; that is, sectoral performance was less dynamic than the national average. As previously stated, both regions transitioned from a state of positive to negative lock-in during this period. In the following period (1991–2007), the contribution of the competitive effect was negative in both regions but its relative importance was greater in Asturias than in the Basque Country. Sectoral effects offset each other over the period and are hardly relevant in the overall calculation, although the trajectories of the two regions differed, establishing distinct patterns of specialisation and diversification, as will be discussed later. In the final period (2007–2019), the aggregate sectoral effect contribution was negative in both regions. While the competitive effect was positive in the Basque Country, reaching 9.2%, it was markedly negative in Asturias, at −7.5%. This highlights the Asturian region's inability to keep pace with the national average.

We acknowledge that the competitive effect may not fully capture the intended outcome — namely, the specific dynamism of a sector within a particular region — as it may be influenced by the underlying economic structure. To overcome this issue, this paper applies the decomposition proposed by Esteban-Marquillas (1972) based on homothetic employment, which is defined as the employment level that would be assigned to sector i in region j if the sectoral structure of that region were assumed to be the same as the national one $X^{*}_{ij} = X_j(X_i/X)$. Then, the competitive effect is divided into two new effects: the net competitive effect which is isolated from the structural effect $NCE_{ij} = X^{t*}_{ij}(g_{ir} - g_i)$ and the allocation effect which reflects specialisation and/or diversification patterns $LE_{ij} = (X^{t}_{ij} - X^{t*}_{ij})(g_{ir} - g_i)$.

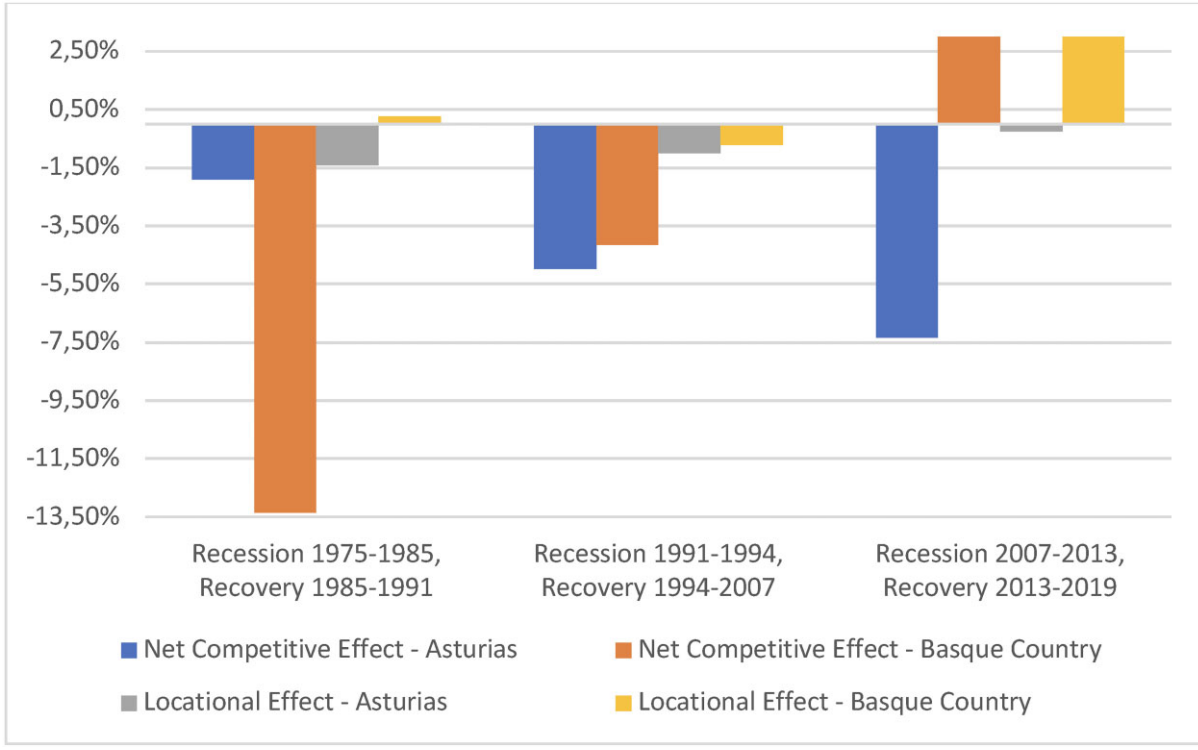

Figure 4. Contribution of net competitive and allocation effects.
Source: See Figure 2.

Figure 4 shows these effects for the two regions across the three selected periods. Asturias consistently represents the most unfavourable scenario, with negative outcomes in both effects and employment concentrated in low-growth sectors. In contrast, the Basque Country displays better adaptability and recoverability, initially showing mixed results but achieving positive values in both effects by the final period. Further sector-specific details for each period are provided in the Appendix (Supplmentary Information).

To sum up, Asturias and, to a greater extent, the Basque Country, exhibit an acceptable capacity for resistance to crises, but they have not been able to follow the national growth rate of employment, shaped by the relative specialisation of the Spanish economy in the services sector. The intermediate position of the Basque Country and, to a lesser extent, Asturias, among the Spanish regions is explained by their relative specialisation in industry, a sector less employment-intensive than services but which has higher relative productivity. Our results align with those of other studies carried out using the full sample of Spanish regions, which have shown that the most resilient regions are those whose economic structure is dominated by market services (and tourism, in particular), and where the relative weight of industry and construction is below the Spanish average (Ubago et al., 2019).

Table 4 shows the average annual growth rate of employment by sector in Asturias, the Basque Country and Spain between 1978 and 2018. In the case of Asturias, the rate is slightly negative compared to a positive growth rate for the Basque Country and Spain (see also Figure 2). For Asturias, except in sectors V and VI, associated with services, the average growth rate is negative, especially in agriculture and fishing (I) and in the mining, energy and water sector (II). In the manufacturing sector (III), the figure is even more negative in Asturias than in the Basque Country, a clear symptom of the former's industrial decline. However, the growth of services was not able to counterbalance the job destruction in the aforementioned sectors.

The scenario in the Basque Country is different, as the annual rate is positive, with the services sector showing a particular dynamism. This region has also experienced less job destruction in the manufacturing sector. The good performance of the services sector, including business services, created a suitable environment and conditions that mitigated the destruction of industrial activity and employment. In terms of GVA, knowledge-intensive business services became the single most important sector (NACE-30) of the Basque economy from 2000 onwards (Aranguren et al., 2012, 160–61). In any case, it should be noted that, in a European perspective, the Basque Country has resisted the deindustrialisation trend that began the 1970s very well,

Table 4. Sectoral employment average annual growth rates in Asturias, the Basque Country and Spain, 1978–2018 (%).

	Asturias	Basque Country	Spain
Total	−0.01	0.82	1.07
Sector I (agriculture and fishing)	−5.05	−3.65	−2.85
Sector II (energy, water and mining)	−4.23	0.93	1.01
Sector III (manufacturing industry)	−1.22	−1.19	−0.92
Sector IV (construction)	−0.46	−0.28	−0.07
Sector V (for sale services)	1.61	1.89	2.27
— *Sector Va (finance and insurance)*	−0.11	−0.62	0.32
— *Sector Vb (distribution, retailing, hotels and catering, transport and communications)*	1.14	1.36	1.77
— *Sector Vc (other business services)*	2.90	3.29	3.62
Sector VI (not for sale services and private health and education)	2.13	3.05	2.61

Source: See Figure 2.

advancing from 32nd place in 1970 to 6th place in 2010 in the ranking of European regions by share of industrial employment (Roses and Woolf, 2018).

Looking at the industrial structure of the two regions (Table 5), in the late 1970s, both presented economic-structural impact factors conducive to lock-in (Hassink, 2010): a marked industrial mono-structure based on mining and metallurgy in Asturias (representing 28% and 20% of industrial employment, respectively), and metallurgy and metal products in the Basque Country (14% and 24% of industrial employment). In both cases, industry was highly spatially concentrated in a few places (central Asturias, the Bilbao estuary), which facilitated labour organisation and made protests and resistance stronger. However, there were also some differences between the two regions. In Asturias, there were two leading capital-intensive and oligopolistic sectors: coal mining and steel-making, with high entry and exit barriers, large and powerful state-owned firms, and influential trade unions (Köhler, 1996; Hernandez, 2001). In the Basque Country, the largest sector, metal products, was comprised mostly of small and medium-sized enterprises; large (mostly private) firms were found in other capital-intensive sectors, such as steel-making, machinery and equipment, and transport material (Aranguren et al., 2012).

The restructuring process that began in both regions in the 1980s and their subsequent industrial development paths brought about different results: a sharp fall (60% between 1978 and 2018) in industrial employment in Asturias, which is explained by the collapse of the coal mining sector and the decline of steel-making and metal products — although these two sectors increased its relative share of the total industrial employment — as well as other sectors, such as machinery and equipment and the food industry; and a gradual decline (38% between 1978 and 2018) of industrial employment in the Basque Country, but with only small changes in the region's industrial fabric, which as of 2018 was still dominated by metallurgy and metal products, machinery and equipment, electric and electronic and transport material, and rubber and plastics.

In any case, leaving aside the collapse of the coal mining sector in Asturias, what we find in both regions is an industrial structure that has experienced relatively few changes, within a broader context of deindustrialisation that has had a greater impact on Asturias than on the Basque region. However, the sector distribution does not show other outstanding divergent patterns in these two regions, such as the large difference in their R&D intensity (another significant factor in regional resilience, Bristow and Healy, 2018), which is much higher in the Basque Country (see Figure 1).

In other words, the evolution of industrial structure does not fully reveal what has actually happened since the 1980s to enable the Basque Country to break with its former industrial path, while Asturias has remained stuck in its previous trajectory. As we see it, the explanation must be found in qualitative factors that are strongly related to one another, such as agency and institutions — to use Hassink's (2010) terms, an "institutional tissue" at the regional level that remains strongly focused on formerly leading sectors in Asturias, and a new "institutional tissue" and "policy coalition" supportive of industrial change in the Basque Country.

Agency and path development in Asturias and the Basque Country

The empirical evidence presented so far shows that, starting from similar structural preconditions in the 1970s, the resilience and evolution of the two regions in terms of jobs and GDP, and their development paths differed significantly from then on. Both regions faced the same

Table 5. Distribution of industrial employment in Asturias and the Basque Country, 1958–2018.

	1958		1978		2008		2018	
	Asturias	Basque Country	Asturias	Basque Country	Asturias	Basque Country	Asturias	Basque Country
Industrial employment	124,974	256,663	125,858	316,777	60,101	248,971	51,073	196,194
*Total employment**	424,054	595,862	396,148	747,634	455,139	1110,716	394,400	1037,000
Share of industry employment (%)	29.5	43.1	31.8	42.4	13.2	22.4	12.9	18.9
Water and energy	2890 (2.2)	1832 (0.7)	4.837 (3.8)	1805 (0.6)	2971 (4.9)	8860 (3.6)	3473 (6.8)	9789 (5.0)
Mining and quarrying	58,656 (45.1)	7299 (2.8)	35,507 (28.2)	2065 (0.7)	4498 (7.5)	845 (0.3)	2603 (5.1)	397 (0.2)
Metallurgy	11,303 (8.7)	45,215 (17.6)	25,916 (20.6)	44,363 (14.0)	19,937 (33.2)	91,140 (36.6)	18,088 (35.4)	65,715 (33.5)
Metal products	5670 (4.4)	36,904 (14.4)	11,333 (9.0)	76,415 (24.1)				
Machinery and equipment	1804 (1.4)	20,515 (8.0)	4190 (3.3)	34,427 (10.9)	4275 (7.1)	23,746 (9.5)	8553 (16.7)	22,069 (11.2)
Electric and electronic equipment and material, and computer products	427 (0.3)	13,843 (5.4)	1345 (1.1)	25,538 (8.1)	3612 (6.0)	20,877 (8.4)		16,234 (8.3)
Transport material	5731 (4.4)	36,934 (14.4)	5343 (4.2)	27,952 (8.8)	1709 (2.8)	17,720 (7.1)		17,838 (9.1)
Other non-metallic products	7157 (5.5)	7589 (3.0)	7618 (6.1)	10,058 (3.2)	3895 (6.5)	-	2687 (5.3)	-
Chemical industry and pharmaceutical products	3204 (2.5)	12,798 (5.0)	2204 (1.8)	11,233 (3.5)	2124 (3.5)	6005 (2.4)	3386 (6.6)	5108 (2.6)
Rubber and plastics	1596 (1.2)	4831 (1.9)	202 (0.2)	22,745 (7.2)	984 (1.6)	26,357 (10.6)	-	17,814 (9.1)
Food industry, beverages and tobacco products	11,229 (8.6)	16,328 (6.4)	11,144 (8.9)	16,133 (5.1)	8169 (13.6)	15,641 (6.3)	7524 (14.7)	14,296 (7.3)
Textiles, apparel, leather and footwear	7944 (6.1)	20,802 (8.1)	6767 (5.4)	7837 (2.5)	1152 (1.9)	3352 (1.3)	4759 (9.3)	1863 (0.9)
Timber, paper and printing and reproduction	936 (0.7)	11,908 (4.6)	2290 (1.8)	15,038 (4.7)	2891 (4.8)	17,387 (7.0)		10,549 (5.4)
Furniture and other manufacturing	5950 (4.6)	14,992 (5.8)	6668 (5.3)	15,722 (5.0)	1688 (2.8)	17,041 (6.8)		14,522 (7.4)
Other manufacturing	477 (0.4)	4873 (1.9)	494 (0.4)	5446 (1.7)	2196 (3.7)			

(
*) *Source:* Asturias, INE 1960, SADEI 1978 (CNAE-74), 1998 and 2008 (CNAE-93), 2018 (CNAE-2009); the Basque Country, INE 1960 and 1978 (CNAE-74), and EUSTAT, Cuentas Económicas 2008 and 2018 (CNAE-2009).
In brackets, % over total industrial employment. Shading indicates the top 5 industrial sectors of each region.

critical juncture in the 1980s, when a new opportunity space opened up, thanks to the combination of Spain's new political architecture, which transferred power and competences to new regional governments created from scratch, and the country's entry into the European Economic Community. However, they exploited that new opportunity space in very different ways.

In the Basque Country (Table 6) the first period was characterised by a combination of reproductive and change agency. The initial response to the first crisis by the national and regional governments was reactive, as they attempted to support existing sectors following a reproductive agency. However, the creation of a new regional government, as well as a regional development agency and research and technology centres, marked the beginning of the creation of a new policy path (industrial and technology policy), which at first focused on upgrading existing sectors (path extension), and then on diversification into new sectors (path branching and diversification) in the second and third periods (Navarro et al., 2014; Magro et al., 2022). The first crisis opened up an opportunity space for policy change, setting a new industrial and technology policy path that has been maintained since then with few changes (Valdaliso et al., 2014). This was an institutional work led initially by the regional government, which had the power to develop new policies and institutional arrangements. The construction of an institutional framework composed of different types of actors and public-private alliances, such as cluster organisations, together with the strong role of firms, resulted in the creation of a policy coalition with a shared view of new path development and a long-term strategy for the region, which denotes a strong place leadership built over the years (Morgan, 2016; Aranguren et al., 2021; Magro et al., 2022).

This collective leadership, with the regional government and a few policy entrepreneurs who enjoyed strong political power in the 1980s and 1990s playing a leading role, created a transformative narrative focused on "building the future" (a common expression that appeared regularly in the most important policy documents from the early 2000s onwards), based on regional industrial capabilities, that facilitated the creation of new development paths (innovative entrepreneurship) and policies (institutional entrepreneurship). In the 2000s, in addition to the maintenance of these former policies, new strategies were proactively launched to create new paths and promote what the government termed "the second great economic transformation" (Navarro et al., 2014; Valdaliso, 2015).

Building on this narrative, the regional industrial and policy capabilities developed over the previous decades, and collective leadership, as well as the strong connections it had established with the European Commission (Morgan, 2016), the Basque Country was early to implement a Smart Specialisation Strategy (RIS3) in the 2010s. The Basque Country's RIS3 replicated what the region had already been doing since the 1980s (Morgan, 2016; Aranguren et al., 2021 and 2023). The "regional transformation success story" of the Basque region since the 1980s (OECD, 2011, 42) has been attributed to the regional state's ability to maintain a balance between continuity (of a new policy path opened up in the 1980s) and novelty (Morgan, 2013 and 2016).

Conversely, reproductive agency has been predominant in Asturias since the first economic cycle (Table 7). A self-sustaining coalition of agents (state-owned enterprises, trade unions and regional government) with vested interests in the old industrial sectors have blocked change and path breaking, thereby maintaining the political and cognitive lock-in. This reproductive agency is embedded in the wording of the Statute of Autonomy of the region itself (Organic Law 7/1981, of 30 December, Statute of Autonomy for Asturias), which gave the regional government the right to propose the representatives of the Spanish state on the boards of directors of state-owned firms present in the region (article 19.1).[3] Based on this prerogative, prominent leaders of both the regional government (or the governing party) and trade unions were appointed to the boards of directors of state-owned mining and steel enterprises. Reproductive agency has maintained a strong presence in all three periods, especially institutional work in existing sectors and place maintenance through social concertation agreements, with trade unions exerting a strong influence. Trade unions are very powerful in the region and, unlike in the Basque case, have significant representation in the regional government, state-owned firms and several policy bodies, boards and platforms (Köhler, 1996).

Therefore, the factors conducive to lock-in identified by Hassink (2010), including both industrial structure and institutional factors, appear to be more present in Asturias than in the Basque region. Of particular importance is the strong weight of coal mining, a heavily regulated sector that was generously subsidised by the Spanish government and the EU through different policy programmes that failed to promote industrial diversification (Sendín, 2014). As in other mining regions, the strong regional identity that was forged led to cognitive lock-in among local actors (Görmar et al., 2023) and shaped a narrative of dependency (Rossler et al., 2025). Like other OIRs (Sweeney et al., 2020), Asturias was resistant but not resilient.

Evidence from the interviews supports the hypothesis — originally advanced by the primary sources — of an entrenched political and social lock-in in Asturias, which is rooted in the historical centrality of mining activity and the dominant influence of trade unions in the region. Statements by informants, such as "the trade unions ruled the region for decades" and "all activity was conditioned by the mining area and mining activity," clearly reflect a consolidated institutional structure that has profoundly shaped the region's economic and social dynamics. Similarly, expressions such as "being the last to close," "clientelism," or "captured by the unions and concertation," illustrate the

Table 6. Agency and path development in the Basque Country.

Economic cycle	Key agents	Reproductive agency (system-level)	Change agency (system-level)	Path development
1975–1991	NG, RG and RDAs Firms and business associations RTOs TUs	Institutional work: – Industrial restructuring, support to existing sectors (subsidies, loans) (NG and RG, firms and BAs, TUs)	Inn. Entrepreneurship: – New energy policy (new energy sources) – Technological upgrading in existing sectors (firms and RTOs) Inst. Entrepreneurship: – Creation of a government architecture – Industrial and technology policy (RG) – Creation of RDAs and RTOs (RG)	Path extension Path breaking→ policy path creation
1991–2007	RG and RDAs Firms and cluster associations (CAs) RTOs and Universities	Institutional work: – Maintenance of an industrial policy path, e.g. policy path dependence (RG)	Inn. Entrepreneurship: – Diversification into new sectors (related –i.e. aeronautics-or unrelated-i.e. biosciences) (firms) Inst. Entrepreneurship – Creation of public agencies to support industry (RG) – Creation of new RTOs to support new industries (universities, RG) – Creation of CAs in existing and new industries (RG, firms) Place-based leadership: – Building a collective leadership and public-private coalitions-i.e. CAs, STI Network and Council (RG, firms, RTOs)	Path extension and upgrading New path development (branching and diversification)
2008–2019	RG and RDAs Firms and CAs RTOs and Universities	Institutional work: – Maintenance of an industrial policy path, policy path dependence with small changes (RG)	Inn. Entrepreneurship: – Diversification towards smart industry, clean technologies, biosciences (firms, CAs, RTOs, universities) Inst. Entrepreneurship: – Reorganisation of science and technology agents and cluster organisations (RG, RTOs, CAs) – New STI policies: RIS3 (RG, RTOs, CAs) Place-based leadership: – Shared leadership in STI policy following a triple helix approach	Path extension and upgrading New path development (branching and diversification)

Source: Authors' elaboration from Valdaliso et al. (2014), Valdaliso (2015), Magro and Valdaliso (2019), Aranguren et al. (2021), and Magro et al. (2022), and the sources and interviews quoted there. The dominant type of agency in shading.
BAs: business associations; CAs: cluster associations; NG: national government; RG: regional government; RDA: regional development agency; RTO: research and technology organisation: TUs: trade unions.

Table 7. Agency and path development in Asturias.

Economic cycle	Key agents	Reproductive agency (system-*level*)	Change agency (system-level)	Path development
1975–1991	NG and RG Private firms and BAs, State-owned enterprises (SOEs) TUs	Institutional work in the hegemonic sectors (coal mining and steel-making) Place maintenance: – Industrial restructuring, support to existing sectors (subsidies, loans) (RG, SOEs and TUs) – Social concertation agreements (with strong TU influence) – Government architecture that reinforce the coalition between state-owned enterprises and regional government	Inn. Entrepreneurship – FDI in existing sectors: Suzuki (1988) Inst. Entrepreneurship – Creation of RDA and RTOs (RG)	Path extension
1991–2007	NG and RG Firms (MNE and local) and BAs SOEs TUs RTOs	Institutional work in the traditional sectors (coal mining and steel-making): – Maintenance of state ownership in coal mining (HUNOSA) despite privatisation attempts, and in steel industry (CSI) Place maintenance: – Support to existing sectors (subsidies, loans) (RG, SOEs and TUs) – Social concertation agreements (with strong TU influence)	Inn. Entrepreneurship: – FDI in new sectors: Dupont (1992) and Thyssenkrupp (1992) with spillover effects – Technological upgrading in existing sectors (firms and RTOs) – Privatisation of SOE in steel (Aceralia 1997) Inst. Entrepreneurship: – Creation of RTOs (CTIC) (RG, firms) – Cluster initiatives (firms and BAs, RG)	Path extension Path delocalisation Path importation
2008–2019	RG and RDAs Firms and BAs SOEs TUs RTOs	Institutional work in coal mining (until 2018, closure of coal mines due to EU) Place maintenance: – Support to existing sectors (RG, SOEs, TUs) – Social concertation agreements (with strong TU influence)	Inn. Entrepreneurship: – Diversification into new sectors (firms) Inst. Entrepreneurship: – Reorganisation of science and technology agents and cluster organisations (RG) – New STI policies. RIS3 priorities (RG and firms) – Cluster initiatives (firms and BAs, RG)	Path extension Path delocalisation Path branching (RIS3)

Source: Authors' elaboration from González (1981), Vázquez (1994), Köhler (1996), García (1998), Hernández (2001), Antuña (2024) and interviews. The dominant type of agency in shading.

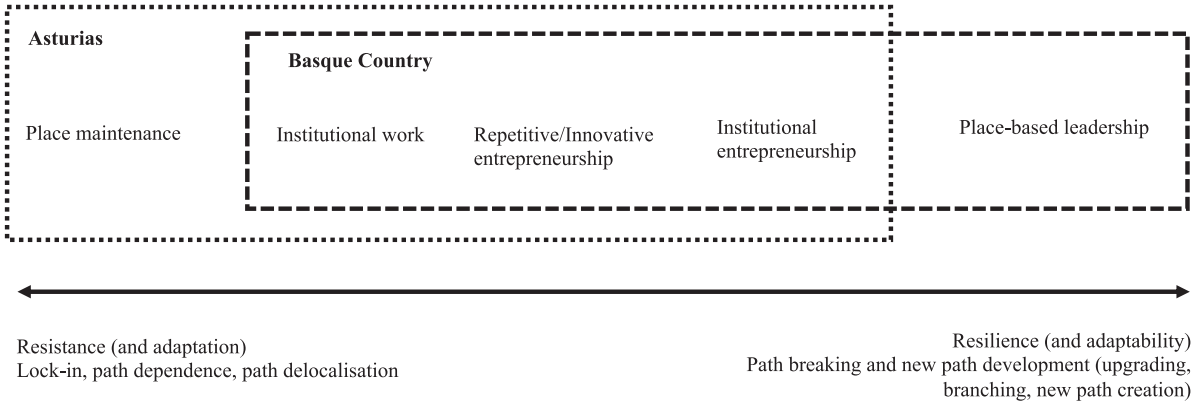

Figure 5. Agency and development paths in Asturias and the Basque Country.
Source: Authors' eleboration.

presence of entrenched power networks and institutional agreements that have fostered a culture of dependence and resistance to change. The phrase "impossibility of doing anything" encapsulates the widespread perception of "pessimism" (Heeringa, 2020) and resignation in the face of an institutional environment that is seen as rigid and resistant to transformative initiatives. When considered as a whole, these accounts emphasise a context shaped by a past-oriented narrative that has limited the region's capacity to adapt and transform its economic structure. The most important regional actors considered the well-being of Asturias to be strongly linked to its capacity to exert political pressure and lobby external policy actors and funding programs: industrial policy became a social policy of income redistribution (González, 1981; Vazquez, 1994; Köhler, 1996; García, 1998).

Although some forms of change agency at organisational and system levels appeared in the region, overall they were not powerful enough to counterbalance the weight of reproductive agency and vested interests. There were some attempts at path extension in existing sectors (shipbuilding and machinery and equipment), path importation (chemicals) and path branching through related diversification (renewables equipment), led by local firms or multinational enterprises (MNEs) (innovative entrepreneurship), but they had few systemic effects on the industry. In addition, institutional entrepreneurship can be identified in the three periods, mainly through the creation of Research and Technology Organisations (RTOs) and a few cluster initiatives. Despite these signs of change agency, the stronger weight of reproductive agency favoured a lock-in situation and path delocalisation. The closure of coal mines by EU regulation in 2018, and the emergence of new science, technology and innovation (STI)policies linked to RIS3 and focused on major societal challenges, both of which are sources of change external to the region, might increase the relative power of change agency in Asturias in the near future.

In summary, reproductive and change agency coexisted in both regions (see Figure 5), but there were significant differences in relative political and institutional power, which, in turn, are related to their respective economic structures. In Asturias, reproductive agency has been much stronger. It is symbolised by a policy coalition comprising large state-owned coal mining and steel-making enterprises, influential trade unions and the regional government, that favoured place maintenance in the region and reinforced the political and cognitive lock-in. Conversely, change agency was highly fragmented among different actors, with less capacity to influence the policy agenda. In the Basque Country, the new regional government forged a policy coalition with private firms, mostly SMEs, and RTOs, which resulted in place-based leadership with a shared narrative focused on the future and policy supportive of change and transformation. In the Basque case, the relative power, influence and representation of firms, and business and cluster-associations in shaping regional policy were much stronger than that of their Asturian counterparts, and trade unions were more fragmented and less influential.

Therefore, while there have been attempts to develop new paths in Asturias, change agency has been highly fragmented and has not been strong enough to lead to system reconfigurations and new path creation. Reproductive agency (especially place maintenance) has been a strong force preventing the development of new paths in the region, thereby reinforcing resistance and lock-in, especially in political and cognitive terms. By contrast, the stronger weight of change agency at the system level in the Basque Country, particularly place-based leadership, has encouraged adaptability and resilience, and then supported path breaking and new development paths.

Conclusions

The aim of this paper has been to address a longstanding and salient question in the field of regional development: why do relatively strong institutional and economic lock-ins persist in certain OIRs, while others are able to de-lock and take new development paths? The contribution of this study lies in its comparative analysis of the developmental trajectories of two OIRs in northern Spain from c. 1975 to 2019. Methodologically, the paper has adopted a mixed-methods approach that combines quantitative techniques (to assess regional resilience across successive business cycles) and qualitative analysis (to explore the types of agency present in each region and their influence on developmental dynamics) in a balanced and complementary manner.

The dynamic shift-share analysis clearly corroborates the divergent development path of the two regions despite their similar initial economic structures. The decomposition of employment growth reveals a persistently negative competitive effect in Asturias throughout the three economic cycles. In contrast, the Basque Country experienced a declining negative competitive effect between the first and second cycles, which became strongly positive in the third. More specifically, Asturias also exhibits a negative allocation effect across all the three cycles, whereas in the Basque Country, this effect gradually became positive in the first and third cycles. Summing up, Asturias trajectory can be characterised by resistance and path dependence, whereas the Basque Country's trajectory reveals resilience and new path development. While this analytical tool effectively uncovers contrasting outcomes, it falls short of elucidating the underlying causal mechanisms (Sutton and Arku, 2022).

Although the two regions presented quite similar economic-structural impact factors conducive to lock-in in the late 1970s, agency played a key role in their divergent development paths thereafter, as many recent works have also shown for other places (Grillitsch and Sotarauta, 2020; Blazek and Kveton, 2023). In Asturias, reproductive agency, and particularly place maintenance, has remained much more significant than the few and fragmented types of change agency, which overall failed to have a systemic impact that could have resulted in a new reconfiguration of actors and power, potentially leading the region to other development paths. In the Basque case, the predominance over time of a trinity of change agency at the system level and a weak reproductive agency are important factors for explaining resilience and new development paths. The importance of coalitions in a form of a collective change agency oriented towards a common goal of place development is highly significant in this case. Agency has therefore contributed to the development of a transformative resilience related to the ability to develop new paths (adaptability), a place leadership that facilitates change and path breaking, and the reconfiguration of the regional constellation of actors to face new challenges (Sutton and Arku, 2022; Huggins and Thomson, 2023; Trippl et al., 2024). The creation of new industrial paths by innovative entrepreneurs requires institutional entrepreneurship and place-based leadership to achieve industry legitimacy (Jolly and Hansen, 2022; Gong et al., 2022).

Our work also supports the view that some places are more supportive of lock-ins than others (Martin and Sunley, 2006; Martin, 2010; Hassink, 2010). Like other places (Evenhuis, 2016), the OIRs examined in this study faced the same critical juncture in the 1980s, but exhibited two different agency types that shaped their different development paths. Agency was shaped by the different distribution of power in each region, which was, in turn, conditioned by their respective economic structures. Asturias is a clear example of Grabher's and Hassink's canonical lock-ins, characterised by a self-sustaining coalition of large and powerful state-owned enterprises, influential trade unions and the regional government, and a pessimistic and past-oriented narrative that hindered renewal and change. In this case, coalitions supporting cognitive and political lock-ins made it difficult to advance towards new development paths. The Basque Country is a good example of the trinity of change agency, led by a policy coalition forged around the regional government, with a future-oriented narrative supportive of transformation and change.

The novelty of our work lies in the analysis of the trajectories of two OIRs, while also considering the country's overall economic trajectory, combining both quantitative and qualitative perspectives in a balanced manner. Quantitative analysis reveals divergent paths and responses, despite similar structures and initial conditions, but does not explain its causes. The analysis of economic structure offers no explanation for this divergence. It is precisely qualitative analysis, despite the challenges it presents, that provides explanations for these differences. In addition to agency, factors such as power dynamics and differing narratives and cultures — which have historically influenced both the actions of agents and development paths — enable us to explore what has occurred in the Basque Country and Asturias. Furthermore, qualitative analysis helps us to understand how different lock-ins are interconnected and the importance of change agency for path breaking and new path development. Ultimately, a holistic approach to regional development analysis is essential (Grillitsch and Sotarauta, 2020; Martin and Sunley, 2022), as the underlying causes of regional growth will shape future regional imbalances.

Endnotes

1 In the Basque case, two of the authors have an in-depth knowledge of the actors and regional policies because they

have more than ten years of experience doing academic work in this area and have conducted more than one hundred interviews since 2008, which has made it possible to check the evolution of agency over time; see, for instance, Magro and Valdaliso (2019) and Magro et al. (2022). In the case of Asturias, ten semi-structured interviews (4 businessmen, 3 academics, 2 politicians and 1 union leader) were conducted between July 2024 and January 2025 with the explicit aim of contrasting the agency types and roles previously identified in the analysis of secondary sources.

2 Based on shift-share, if the national effect is moved to the left side and divided by the deviation in expected employment, the expression on the left side becomes the measure of resilience and/or recovery. Meanwhile, on the right side, the industry-mix and competitive effects appear in relative terms; with respect to what would have been the variation in employment assuming that the trajectory of the two regions was the same as that of Spain. $\frac{\sum_i X_{ir}^t (g_i - g) + \sum_i X_{ir}^t (g_{ir} - g_i)}{|X_r^{t+1} - X_r^t - \sum_i X_{ir}^{t+1} g|}$

3 Under Law 7/1983, of 6 October, the regional government created a Coordination Committee of these representatives (later on known as the CREP), with an advisory committee dependent on the Government's presidency.

Supplementary material

Supplementary material is available at *Cambridge Journal of Regions, Economy and Society* online.

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