Abstract

This paper asks to what extent recent European industrial policies were responses to an episode of crisis rather than more enduring policy changes in response to globalization and the knowledge-economy. We argue that the 2008 crisis and recent protectionist efforts provided policy-makers greater freedom of maneuver but structural policy reform was already underway in the 2000s. We find policy responses were shaped by three factors: policy legacies; a country's position in global value chains; or differing state traditions and capacities. The paper contributes to the understanding of the determinants of economic policy-making and the impact of crises.

JEL classification: Policy, Industrial Policy, Institutions and growth, Capitalist Systems, Europe, Political Economy

Policy highlights:

- Deep shocks that curtail governments' fiscal room for maneuver may prevent the emergence of new industrial policy paradigms when they are most needed.
- Lack of coordinating institutions does not necessarily prevent deep swings from laissez-faire to interventionism, but may compromise policy implementation.
- The size and density of globally competitive firms has a significant effect on economic policy scope and preferences for horizontal vs. sector-specific policies.

1. Introduction

In responding to the financial crisis of 2007-10, affected European countries had two options: external adjustments via changes in the exchange rate, or internal adjustments via salaries and structural reforms to increase competitiveness (Frieden and Walter 2017). The Single Currency eliminated the first option for Eurozone countries, forcing them to rely on combinations of internal depreciations and structural reforms to regain competitiveness.

Differences in the impact of the crisis across countries, and the enduring effects of austerity policies and internal devaluations, have led scholars of comparative European capitalisms to concentrate on exploring the implications of the crisis for existing models of capitalism (Hall 2018), identify different types of growth regimes (Baccaro and Pontusson 2016), and question whether the EU provides a suitable umbrella for these different models to thrive (Johnston and Regan 2018). Other authors, writing from the perspective of southern, “peripheral” and late-industrializing European countries, have focused on the long-term effects of European policy imposition and austerity on crisis- stricken countries (Clifton, Diaz-Fuentes, Gómez 2018) and the risk that they may be set permanently on a path to dependency, low wages and peripheralization.

One aspect that has received less attention is the apparent rediscovery of industrial policy since the crisis. Is the current consensus around industrial policy largely a reaction to the crisis, or a broader response to structural change derived from anti-globalization and the ‘Knowledge Economy’? And, if it is a broader response and these shocks are common across advanced industrialized economies, should we expect to observe similar policy responses across European nations? If not, what determines the variety of industrial policies we see?

We argue that although, the 2007 crisis and the recent wave of protectionism may have allowed policy-makers to act with greater freedom of maneuver to make long lasting decisions (Gourevitch 1986; Katznelson 2003), structural policy reform was already underway in many European countries in the 2000s and was therefore a reaction to a broad set of factors connected to global industrial transformation, rather than a mere response to the crisis. Building on Pierson's 2000 and North's 1990's arguments about the role of existing policies and legacies in the architecture of political economies we argue that, despite addressing a common shock, policy responses are likely to vary across nations.

We build our argument through empirical analyses of industrial policies in four European countries: France, Germany, Spain and the United Kingdom. These are four large countries that make significant contributions to Europe's GDP. They showcase diversity in terms of the three factors the paper focuses on: state traditions; the consistency of their policy trajectories; and productive structures. France and Germany represent different, but time-consistent forms of state activism, while Spain and the United Kingdom have veered from state activism to laissez faire. Germany has a large population of globally competitive manufacturing SMEs in a broad range of related sectors, whereas France has world-leading large firms but less efficient SMEs. By contrast, Spain and the United Kingdom have considerably smaller manufacturing sectors that tend to specialize in only a few industries. In addition, Spain's firms tend to occupy the middle rather than the top of global production networks and to operate in more traditional sectors.

By comparatively examining the apparent reboot of industrial policies in these four countries we hope to contribute to debates about continuity and change in the organization of economic systems and the degrees of freedom available to policymakers (Streeck and Thelen 2004; Hall and Taylor 1996; Hay and Wincott 1998). The discussion touches on ongoing theoretical debates in comparative political economy about the importance of demand and supply-side driven path-dependencies *versus* possibilities for state agency in the face of economic change. These debates are important as governments wrestle with a widening set of economic, technological and distributional challenges.

1.1 Varieties of industrial policy

We adopt a broad definition of industrial policy, as *'the process whereby governments aim to deliberately affect the structural characteristics of their economies'* (Naudé 2010). To restore some precision, we also try to distinguish between politicized, crisis-driven policies that focus on politically important and well-connected sectors and are inevitably short-termist in nature, and longer-term overarching 'grand plans' that may encompass a range of policy areas simultaneously and display more deep-seated and strategic ambitions. Similarly, we do not directly address EU initiatives such as the Lisbon and 2020 Agendas, even though these are important in shaping the terrain for intervention (see Bosch 2014 for an overview).

We expect policy variation to depend on three main factors: policy legacies; a country's position in global value chains; or differing state traditions and capacities. The first two factors build on classic historical institutionalism, the VoC literature and the Business Systems framework. The third factor reflects classic and recent contributions to the debate on state activism.

<u>Historical and institutional legacies.</u> A country's previous experience with industrial policy influences views regarding the role of the state in the economy and acceptable types of public interventions. Historical legacies are reflected in institutions. Building on the Voc literature (Hall and Soskice 2001) we focus on coordinating structures, especially those underlining the presence of powerful social groups that influence the allocation of resources (Hall 2018). Of these, we focus on public-private elite networks because of their influence on policy design and quality of implementation (Hancké 2002). Institutionalized public-private elite networks that dominate the commanding heights of the economy provide a sanctioned channel for political discussion that may lead to important swings in the direction of policy. Centrally coordinating institutions such as strong vocational training systems, public research centers and development banks act as conveyor belts for the implementation of industrial strategies, facilitating policy efficiency. In that regard, we expect the presence of strong coordinating institutions to reduce political pressure for policy swings.

The characteristics of the national productive structure. Industrial policy requires close cooperation with business, but industry is not homogeneous and neither are its needs. The VoC and Business systems frameworks (Whitley 1999) argue that national institutional configurations will influence domestic production structures. However, we also contend that causality will run in the opposite direction: the position of firms in global value chains, the types of sectors a country specializes in and the size of firms, will influence the time horizon and scope of industrial policies.

We expect countries with large number of lead firms operating at the top of global value chains (GVCs), large manufacturing sectors, or firms operating in technologically complex industries to have more time-consistent and long-term oriented policies than those in which most firms operate in the middle rungs of GVCs or in more traditional sectors, as well as countries that have small manufacturing sectors relative to the total size of the economy. We also expect countries where manufacturing constitutes a large portion of GDP to prioritize horizontal industrial policies that can benefit firms in adjacent industries, whereas countries in which the most competitive firms concentrate in only a few distinctive sectors to favor industry-specific approaches.

The capabilities of the state. The capacity to coordinate public and private sector actors across various economic spheres is critical in designing and implementing industrial strategies. According to the classic literature on state activism (Evans 1995), the capacity to articulate and implement an effective coordination strategy will be contingent on the presence of civil service organizations that exhibit high levels of internal coherency and low levels of internal political conflict. In addition, the presence of developed intermediary organizations such as unions, accustomed to cooperating strategically with their governments, will be associated with high levels of government strategic capacity (Yang 2017).

However, we argue that while bureaucratic capacity is necessary to articulate technically complex long-term strategies it is not sufficient to transform industry, expand capacity, and generate innovation because this requires large, long-term capital investments. Thus, in practice, states with highly competent and coherent bureaucracies may be forced to compromise long term major goals for more immediate, less ambitious ones if they find themselves strapped for cash due to internal or external constraints.

The rest of article is structured as follows. Section two discusses the debates that frame our paper. Sections three and four are the empirical heart of the article, comparing paths of industrial policies before and after the crisis. Section five summarizes and concludes.

2. The Global Economy, Productive Systems and the State

Our analysis is framed by three related debates. The first discusses historical differences in the scope of industrial policy; the second explores the connection between national institutional structures and transformational reforms; the third addresses the capacity of states to influence social and economic processes since liberalization.

2.1 Industrial policy

Debates about industrial policy have often contrasted arguments around intervention on grounds of market failure versus government failure (Buiges and Sekkat 2009). The recent literature (Aiginger 2007; Bailey et al 2015; Warwick 2013; Owen 2012) also brings in a distinction between contemporary and historical approaches. In doing so, these authors emphasize the importance of context and prevailing ideology. Warwick (2013) for example, characterises different 'generations' of industrial policy, and connects them with infant industry, economies of agglomeration, neoclassical, and institutional arguments.

The existing literature on industrial policy is limited by a tendency to refer to states and firms as abstract entities, without much consideration for their characteristics and dynamics or the impact of these on industrial policy measures. Much of the discussion of industrial policy is rooted in neo-classical approaches to market failure, which essentially assumes that all advanced economies in the global economy are competing for the same prize. This ignores the fact that national economies have relatively distinct industrial endowments and that these shape the content and to a certain extent the character of how states seek to enhance the national competitiveness of industry, and we turn to these next.

2.2 Institutions and path dependencies

The second debate explores connections between domestic institutional structures and possibilities for transformational reform. Political economists have been interested for some time in how diverse sets of institutions shape the incentives of economic actors, producing continuing divergence in the organization of productive relations (Dore et al 1999, Whitley 1999). The most influential of these approaches is the Varieties of Capitalism framework (Hall and Soskice 2001), which highlights supply-side structures of economies and divides advanced industrial countries into two main types according to whether market or non-market modes of coordination between economic actors predominate. These are labelled liberal (LME) and coordinated (CME) market economies respectively. Germany is the archetypical CME, whereas the United Kingdom embodies the LME system. France and Spain stand somewhere in the middle. The web-like nature of national institutional structures and the interconnections between their various nodes means that transformational reforms that target one institutional area require simultaneous action in other areas of the economy.

The VoC framework has been criticized for being static and unable to explain tensions, ignoring the role of the state, and that its two 'ideal types' are insufficient to explain many institutional structures. Recent iterations have broadened the number of ideal types (Nolke and Vliegenhart 2009, Molina and Rhodes 2007) as well as introducing the state as an important (albeit largely passive) actor (Hancké, Rhodes and Thatcher 2007). Outside VoC, other institutionalist scholars have emphasized the role of state activism more directly (Levy 2006). A further refinement is to complement VoC's supply-side analysis with a demand-focused comparison of 'growth regimes'. Baccaro and Pontusson (2016) arrange countries according to whether consumption or net exports provide the main contribution to economic growth, while Johnston and Regan (2016) suggest these introduce inter-dependencies into the European economy locking countries into particular growth paths.

Overall, the institutional literature suggests that successful policies will tend to work with, rather than against, the grain of their existing model of capitalism, as initial institutional endowments affect options for adjustment.

2.3 State capacities

A third debate questions the capacity of states to transform domestic economies in the context of free, global markets. Two groups of authors have taken a stance on the matter. One sustains that globalisation and liberalisation have robbed states of their capacity to influence social and economic processes (Coates 1999; Glyn 2006; Strange 2000). Trade openness and financial liberalisation prevent the nurturing of infant industries and increase the power of business over labour and governments. Rapidly developing ICT also permits the “decomposition” of production into global value chains, obliging countries to compete with each other to ensure their inclusion in these (Breznitz and Zysman 2013; Dicken 2003; Lane 2007).

The second group of authors counters that the global division of labour may provide new opportunities for agency, not just an exogenous constraint (Evans 1995, Weiss 2003). Porter (1990) has also suggested an idea of constructed comparative advantage that includes government policies alongside other endowments. Chang and Rowthorn (2000) argue that states occupy strategic positions at the center of an economy from which they can provide a long-term vision around which other agents build their actions. This strand of thinking also envisages an important activist role for government in helping to underwrite the massive, long-term and uncertain investments necessary to transform productive structures (Mazzucato 2013).

However, these views of the state tend to ignore the influence of politics and short-termism in shaping policy and sidestep issues of government failure. Our approach builds on a longstanding literature on crisis and reform (Chang, Park and Yoo 1998, Hall 2012) and on comparative empirical evidence of industrial policies before and after the 2008 crisis in large European economies to highlight the possibilities for radical policy reform in the face of sudden economic shocks.

3. Industrial Strategies prior to the Crisis

This section examines countries' pre-crisis industrial strategies in light of the three factors outlined above to set out grounds for evaluating national variations in post-crisis policy responses.

3.1 Historical and institutional legacies

The influence of industrial policy legacies would be expected to be visible in predominant views on the role of the state in the economy and the presence (or not) of significant swings in policy direction over time. In our analysis, Germany is an example of a consistent policy approach since the Post-War period, whereas the United Kingdom and Spain have historically swung between interventionism and laissez faire and France stands somewhere in the middle.

Germany is the archetype of an institutional system based on inclusive non-market coordination institutions, which have countered pressure for the consolidation of public-private elite networks. This structure correlates with a highly consistent policy approach that emphasizes sector-neutral industrial policies that may not target specific industries. If there was an inflection point for economic and industrial policy in post-war Germany, it was probably the early to mid-2000s, when the post-reunification hangover was peaking. In response to sluggish growth and high unemployment, the "Hartz" reforms of 2002-2004 liberalised employment regulations and created a dual labour market, and a "High-Tech Strategy" was launched in 2006 with the aim of increasing Germany's already high proportion of R&D and fostering more innovative companies.

France's weak vocational training system and antagonistic unions provide feeble support for strategic coordination with labor. However, the country's public research institutions support the competitiveness of French firms in high-skilled sectors and France's two-tiered public system of higher education underpins a decision-making system based on public-private elite networks. This combination of weak labor coordinating agents and strong policy and industry elites has resulted in consistent support for dirigisme (Hancké 2002; Levy 1999). Since the mid-1980s, the state shifted away from policies that supported national champions and reduced its stakes in many of them although without achieving complete privatization, or doing so slowly. The influential Beffa Report (2005) prompted a shift in support towards high-technology industries promoted by the state. Industrial policy thereafter focused on supporting innovation in key industries and articulated the strategy via a set of high-level national institutions (Buiges and Sekkat 2009).

Spain's labor coordinating institutions have been historically weak, a result of the country's late industrial development and the legacy of Francoism, which outlawed unions and underinvested in public education. Public research institutions constitute the core of Spain's industrial innovation system; but public investment in research was negligible until the mid-1980s and has since continued to lag behind those of other major advanced industrialized economies. Spain's economic transition in the 1980s steered clear of French-inspired "developmentalism" that dominated the two previous decades and embraced a system that combines state activism in a few strategic sectors with reliance on markets for most other industries. Since the late 1990s, Spain has sold most of the state's remaining stakes in strategic firms and expanded liberalization across services sectors, but has continued to rely on sector-specific initiatives and European funding for critical industries.

Finally, the United Kingdom epitomizes a system based on market allocation with historically weak coordinating institutions, and public-private elite network system that connects policy-making, top universities and complex services but has weaker connections to manufacturing industries and is more porous than its French counterpart. This structure has delivered an approach to industrial policy that swung between state interventionism and market coordination. Following nationalisation of major industries in the 1940s and 50s, UK governments attempted French style-dirigisme, but failure led to the Thatcherite backlash and a shift toward markets. In the mid-1990s policymakers identified numerous failures in product and labor markets manifested in widening trade deficits in manufactured goods and the inability of UK firms to prosper in high-tech industries, and by 1997 Tony Blair's "New" Labor government appeared to herald a lurch towards a more active industrial policy. During the 2000s the main focus of industrial policy was on sector-neutral measures to foster innovation and R&D, support SMEs and reduce regional inequalities.

In short, the presence of strong public-private elite networks appears to be associated with more frequent and more intense policy swings regarding industrial policy, and strategic coordination institutions appear to curb the power of such private-public elites. Therefore, countries with pervasive coordination institutions correlate with highly consistent policy approaches over time, while those where coordination institutions are only present in a few areas are more prone to politically motivated swings over time.

3.2 Characteristics of the national productive industry

Large European countries differ significantly in terms of the size, specialization, and standing of their firms, all of which shape the character of economic policies. Germany's manufacturing sector accounts for approximately 20 per cent of its GDP, compared to only 9, 12 and 14 per cent in the United Kingdom, France and Spain respectively. Germany's specialization in high-quality manufacturing typically situates it at the top of the global value chains in which it participates. In addition to its large firms, Germany has a large population of competitive small and mid-sized firms in closely related manufacturing sectors.

By contrast, France has a two-headed productive structure composed of some large, world-leading manufacturing firms and a population of small and mid-sized firms that is not a competitive match for Germany's. Spain and United Kingdom have smaller manufacturing capacities that tend to cluster around fewer industries and globally competitive service sectors in complex industries such as finance and communications. Many of Spain's largest manufacturers are local subsidiaries of international firms, but the country also hosts a small population of internationally competitive mid-sized firms in relatively mature sectors such as automotive. These firms usually operate in the middle rungs of global divisions of labor.

Germany's large national and strategically-important manufacturing base translates into a greater number of adjacent sectoral specialisations. Together with its large population of "Mittlestand" firms, this structure maximises the benefits of having centrally coordinating institutions and favours strategies based on sector-neutral policies that may simultaneously benefit several adjacent industries.

The predominance of large firms in France, Spain and the UK, and the concentration of economic activities in fewer sectors has strengthened the case for sector-specific rather than general framework policies. The influence of large firms is evident in France's historical policies of "national champions", Spain's continuous support for large "strategic sectors" and in the UK, where policymakers have tended to target growth sectors such as biotech.

Countries' positions in the global division of labor has shaped the ambitiousness of national industrial policy goals. Germany's broad-base of world-class competitive firms is consistent with policies that concentrate on strengthening existing advantages through technology and innovation and have the broadest, most ambitious goals. France and the UK have identified specific competitive bottlenecks to their key industries and concentrate primarily on addressing those specific needs. Spain’s gap in innovation investment, together with a small manufacturing sector dominated by foreign invested firms, has compromised industrial policy goals.

3.3 State capacities

Effective industrial policy depends on the state’s coordination and financial capabilities. The size of individual firms also influences the channels through which industry interacts with the state; larger firms often have direct relationships, whereas SMEs rely more on intermediary representatives to articulate their needs.

Germany’s larger SME sector meshes well with the country’s decentralized governance structure and prevalence of sub-national institutions. The German Länder contribute organisationally and financially to the development of cluster policies for which organisation and spatial proximity with local firms and their networks is vital, in stark contrast to French regions which are involved in policy execution only. Indeed, the most notable feature of French industrial policy remains its extraordinary degree of centralisation, with 90% of financial support administered by the State and only 10% by regional or local authorities – a much lower proportion than the other three countries (Buiges and Sekkat 2009).

Establishing channels for communication with manufacturing firms is essential to ensure that industrial policies are fit for purpose and, again, we see considerable contrasts. Germany relies on self-governing organisations such as the Fraunhofen Institutes to undertake policy implementation in cooperation with firms. Lacking these institutions, industrial policy in France is conducted from the centre, with the main actors sitting together on a consultative body, Conférence Nationale de l'Industrie (CNI) while responsibility for the elaboration of tactical plans is allocated to the Comité de Copilotage.

Despite its centralised executive, the United Kingdom’s laissez faire attitude to industry since the 1970s resulted in a paucity of instruments for exercising industrial policy, although these are slowly being rebuilt – for example the creation of Regional Development Agencies tasked with promoting economic growth outside the rich southeast of the country, which were replaced by weaker and more voluntarist Local Enterprise Partnerships in 2012. In common with France, the thrust of UK policy prior to the Crisis was therefore to concentrate less on overarching future-looking goals and more on addressing the specific shortcomings of its industry. Prior to the crisis, Spain had no statutory mechanisms for government-firm dialogue and the preferences of large firms in strategic sectors loomed large.

4. Industrial Strategy in the post-crisis era

This section examines industrial policy strategies in the four countries in the Crisis and post-Crisis period (2008 to the present) in the light of the factors detailed above.

Germany's manufacturing industry was initially hit hard by the crisis, with industrial production plummeting by over 16% in 2009. The impact of the crisis would have been magnified by the huge importance of manufacturing to Germany's export-led economy, implying a significant political shock. And yet the immediate policy response was confined to a relatively modest €1.5bn financial aid package to the strategically important car industry, announced in November 2008, accompanied by large-scale bank bailouts. The auto sector bailout included subsidies for job protection which were extended to other sectors, with the result that German unemployment rose by much less than in other countries.

The muted policy response and absence of overheated crisis rhetoric is striking. The German government continued to maintain that the state has a strictly limited range of instruments at its disposal[i]. Accordingly, when Germany relaunched in 2010 its "High-tech Strategy", which is tasked with retooling industry for the digital age, it continued to rely primarily on sector-neutral initiatives. Admittedly, there was a new focus on so-called "selected forward-looking projects" but these were explicitly directed at tackling operational bottlenecks through technology in areas of existing strengths, rather than representing a pivot toward developing new industries per se[ii]. Indeed, the OECD criticised the German approach for focusing on established manufacturing firms and ignoring the importance of the business services sector in supporting industry[iii].

The 2010 relaunch also reaffirmed Germany's commitment to an ambitious set of clean energy goals pre-dating the crisis, the 'Energiewende'. This is noteworthy, as the policy had been opposed by manufacturing firms over its impact on energy costs, a battle they lost in the face of public alarm over the Fukushima disaster in Japan. The demand shock represented by the crisis would therefore have represented an ideal opportunity to relax its strictures, but this was a road not taken.

More recent iterations of the High-tech Strategy also demonstrate the continuity approach. An update to the Strategy in 2014 pledged to "strengthen economic growth and prosperity by means of a coherent innovation policy". The strategy also concentrated on scientific transfers. The "2012 Action Plan", devised to put the High-tech Strategy into effect, identified 10 "future projects" considered critical to address the strategy's innovation goals. The 2011 National Reform Programme (NRP), although not concerned explicitly with industrial policy, included a number of framework policy initiatives and commitments in related areas such as labour markets, education, and research and development that suggest no deviation from existing industrial policy goals. The Industrial Policy 2030 identifies cases in which direct state intervention can be justified to avert serious economic disadvantages for the country's economy. However, these cases remain exceptional, and they revolve known areas of German strength, such as innovation, SMEs, and timely value chains. A joint declaration with France in late 2018 calling for a strategy to foster European industrial champions could suggest a shift in policy emphasis at the supra-national level but without necessarily entailing wholesale changes to Germany's domestic policy regime.

For France, by contrast, the 2008 crisis exacerbated a deterioration of competitiveness which had taken place over the previous decade, pushing unemployment above 10% where it remained until late 2016. Once the structural nature of the crisis became evident the French government was under intense political pressure to act. Responses were piecemeal and chaotic, however. President Sarkozy's initial reaction was a lurch towards dirigisme. As in Germany, emergency state aid was made available to carmakers. The French government went much further however. A Strategic Investment Fund, modeled on sovereign wealth funds, was set up in 2008 with €20bn in capital. Other stop-gap measures included bonus caps for executives in industries receiving state aid and a "no-layoff" pledge in manufacturing firms in return for low-interest loans. Several large, and/or, politically-significant firms were bailed out, such as car parts maker Heuliez.[iv]

The direction of French industrial policy at the strategic level was uncertain. It was not until 2009 that Sarkozy convened a series of meetings of the Estates General of Industry to develop a coordinated approach. In 2010, the government commissioned a report from the CNI to examine the plight of French industry, which issued recommendations to foster industrial competitiveness. However, by the time the CNI report was published in February 2012 the country was already immersed in a presidential campaign. After the election, incoming president Hollande requested a new analysis by the former EADS executive, Louis Gallois. However, both reports were shelved by the Hollande government, which produced its own set of policies a year later.

The appointment of left-winger Arnaud Montebourg as industry minister in 2012 ensured that policy under Hollande would swing further towards dirigisme (Clift 2013). Montebourg set out a 10-year strategy across 34 industrial sectors, which included well-established industries and new technologies, intended to benefit from state-coordination, regulation and public contracts. The Pact, relaunched in 2015, reiterated the view that providing strategic direction and encouraging industry to move into promising growth markets was the responsibility of the state.[v] Considerable attention was also devoted to reforms to France's governance mechanisms, which strengthened the commitment to state-led direction of the economy through revamped public-private elite networks. Overall, therefore, France's response to the crisis represented, at least on the surface, a swing back towards dirigisme.

In Spain, the crisis resulted in the painful bursting of a real estate bubble, with serious repercussions for employment and financial stability. The manufacturing sector took a significant hit, which, unlike Germany's it was slow to recover from. The government initially responded with a public stimulus plan. But, as Spain's public accounts turned to deficit and unemployment climbed above 20%, the inadequacy of these initial policies forced Prime Minister Zapatero to backtrack and adopt austerity measures that destroyed his credibility, forcing him to resign.

Form late 2011, incoming conservative premier Rajoy adopted a comprehensive set of cost cutting policies in public services, welfare and wages. Intense global competition in the mid-level markets Spain competes in, a sharp drop in demand and credit constraints since the onset of the crisis resulted in numerous downsizings and closedowns. Although these circumstances called for a general overhaul of the Spanish economic model, strategic plans have fallen short in terms of goals and implementation. Innovation plans scaled down their pre-crisis goals and budgets for public research centres were slashed. The 2014 Industry Action Plan, established six broad priority areas but, rather than represent a pivot toward promotion of new industries, measures revolved instead around streamlining processes and reducing costs. Spain's capital commitment was also much more modest than the three other countries.

Despite its quasi-federal structure, Spain is an exception to the idea that decentralisation is correlated with greater involvement of sub-national institutions. The 2014 Action Plan attributed responsibility for plan development and implementation to ministers with little mention for Autonomous Regions. Arguably, high regional debts —and in some cases insufficient organisational resources - prevented most Spanish Autonomous Regions from being engaged more actively.

The meltdown of the United Kingdom's financial service industry and deep and prolonged recession after 2008 produced a keen sense of urgency among policymakers. The Labour government's initial response to the crisis was the publication of a major policy framework statement in 2009 envisaging a "strategic" role for the state in influencing market signals. [vi]

The 2009 plan set in train reforms that were largely maintained, and in many cases expanded, under the Conservative-Liberal Democrat coalition government from 2010. The government's overall approach was to "rebalance the UK economy away from financial services and toward manufacturing" by deepening New Labor's earlier swing towards a moderately interventionist, sector-specific industrial policy. The coalition government immediately announced an ongoing "growth review" to identify areas of industry ripe for government intervention and proposed an initial slate of reforms to promote high value manufacturing.

To that end, the UK government designated 12 key sectors for government support. However, the government was obliged to establish a number of new coordinating institutions for implementing policies. These included a network of Catapult centres, Innovate UK, a public body responsible for innovation policy, a major expansion of the apprenticeship system, a new "Business Bank" and some regional and sector level coordinating institutions such as the Local Enterprise Partnerships (LEPs) and the Automotive Council to develop supply chains in the automotive industry.

Similarly, the government identified four themes of cross-cutting relevance to industry: access to finance, procurement, skills and technologies, and much of the UK's institutional innovation zeroes in on these areas. Shortfalls in business financing were to be addressed by a new 'Business Bank', while there was also a major expansion of apprenticeships. At the end of 2015, the UK government announced its commitment to dedicate £4.7 billion in real terms to science and research for the 2016-2020 legislature[vii].

Concrete steps were also taken to address the paucity of government-industry linkages. Recognising the continued absence of regional institutional infrastructure, the Coalition government replaced Labour's RDAs with Local Enterprise Partnerships (LEPs). The LEPs are autonomous, business-run institutions tasked with drawing up local growth plans for their region that can access a centrally-administered pot of funding, the Single Growth Fund. The LEPs have functions for business coordination with responsibilities for training, product innovation and raising funds[viii].

Theresa May's Conservative government underlined the lurch towards sector by sector interventionism with its Industrial Strategy, launched in 2017, which detailed a set of 'grand challenges", such as robotics and digitalisation, to be tackled via public-private partnerships.[ix] On taking office, May had hinted at radical reforms to tackle the UK's notorious short-termism, including giving workers representation on company boards. Although this rhetoric was scaled back, the government expanded the range of state-business institutions, which now include a Cabinet-level committee coordinating policy across departments, and an independent Industrial Strategy Council linking government with market actors.

5. Analysis and Conclusions

This article examined the impact of the Crisis on recent European industrial policies in light of three factors: policy legacies; a country's position in global value chains; and differing state traditions and capacities.

In Spain, an institutional set up combining tight public-private elite relationships in a few industries, a concentration of large competitive firms in a few sectors and the deep impact of the crisis would have suggested a top-down shift in the policy paradigm and a focus on industry-specific initiatives. However, the Spanish government's 2014 Action Plan was long on rhetoric but short on ambition, with its main aspiration being to foster relatively modest improvements to industrial competitiveness that were actually accompanied by a *scaling back* of pre-Crisis goals. The reasons for this inaction can be laid at the door of Spain's very limited fiscal room for maneuver. Also striking was the paucity of debate about possibilities for using the Crisis to shift Spain onto a higher competitive plane. Policymakers in Spain, unlike France, appear to have adopted a pragmatic, view of their capabilities and room for maneuver and opted for measures that provide breathing room for industry but do not fundamentally eliminate longstanding obstacles to transformation.

Germany's broad-based industrial structure, lack of politically connected "national champion" firms, decentralized, "enabling" state, and the legacy of ordoliberalism, led us to expect a high degree of policy consistency and relatively few sector-specific policy changes. This is indeed what we found. The key elements of Germany's industrial strategy were all substantially in place prior to the onset of the crisis and, although the High-Tech strategy was updated in 2010, 2014, and 2019 these updates are mainly logical iterations of existing plans.

By contrast, policy debates in France and the UK were much more active. France's consistent support for dirigisme, concentration of large, competitive firms in a few sectors, and centralized institutions, strengthened the case for sector specific policies. But, as noted earlier, policy moves lacked a clear underlying strategy and have largely failed to reinvigorate French industry or increase business R&D intensity (European Commission 2013). One reason for the lack of policy impact may be that, while French governments reacted to the crisis with an apparent plan to restore dirigisme and direct the reinvigoration of industry from the centre, earlier reforms had deprived the government of the industrial, governance and fiscal capacity necessary to implement deep-seated reforms to industrial structures (Levy 2011). In addition, the promotion of national champions had been circumscribed by the internationalization of large French firms, which increasingly identify their interests with their conglomerate rather than their "home" country (Véron 2006).

In the UK, a legacy of radical changes in the direction of policy, an elite-based system, and the concentration of economic activities in a few highly competitive sectors, led us to expect state activism in the direction of sector-specific measures. The UK government was indeed active, but the crisis simply provided additional impetus for a selective approach already been in place since the later 2000 and focused on the promotion of innovation and knowledge dissemination in high-technology sectors. In addition, the UK was also willing to engage in institution-building to try to counter executive centralization and overcome the paucity of government-industry linkages necessary for a successful industrial strategy. As noted earlier, the UK manufacturing sector was the smallest of the four countries under consideration and was initially impacted the least by the crisis. Yet the UK saw a vigorous industrial policy response.

One reason may be that implosion of the City of London and hit to financial services exports concentrated policymakers' minds. The UK's industrial policy plans from 2009 onwards were littered with references to 'rebalancing' the UK economy away from finance and towards 'more sustainable' manufacturing. The 2017 Industrial Strategy focused on this while paying little more than lip-service to the arguably more immediate policy challenge of Brexit. But an unusual degree of institutional and policy experimentation took place as policymakers grappled with the crisis using an ad hoc and unfamiliar set of policy tools. Not all of the proposed institutional innovations have taken root in the UK system. A key problem is that the effective scope of the reforms is quite narrow, reflecting the UK's quite limited manufacturing base that is concentrated in a few high-technology industries producing a pronounced "science bias" in policy (Coulter 2017). Overall, though, particularly when set against its historic preference for market-based solutions, the UK's policy response probably comes closest to a critical juncture of all the four countries.

If so, this indicates the strength of path dependency even in the face of significant shocks like the Financial Crisis. Governments have clearly re-engaged anew with industrial policy and have been active, where circumstances allow, in re-equipping their economies to face *specific* underlying national challenges: Germany's need to prepare its manufacturing sector for the digital economy; the paucity of institutions for overcoming market failures in training and product development in the UK; France's weak SME sector and lackluster record on innovation; and Spain's fragmented and technology-dependent industrial structure, for example.

But many of the reactions to the crisis also quite clearly indicate the danger of mistaking activity for achievement. It is sometimes remarked that no good crisis should ever be allowed to go to waste: emergencies focus minds, galvanize responses and neuter opponents of change. Yet, equally, frenetic, politicized activity seldom results in good long-term policy. Few of the many panic-induced measures introduced in the wake of the crisis have stood the test of time. If anything, they have arguably presented a distraction from more deep-seated challenges countries face, such as digitalization and the management of global value chains in the face of emerging trade wars. Effective, long term-oriented policies, evident in Germany, and to a more mixed degree in the other three countries, address these issues but were quite likely to already have been in gestation long before the crisis struck, even if the turmoil of 2007-09 and its drawn-out aftermath lent them greater urgency. Where policy has been effective, therefore, it has generally been undertaken *over* the long term, and *for* the long term, not as a reaction to sudden shocks.

This suggests that the answer to the question posed in Section 1. is that any enduring policy response to the crisis is likely to have been one that was congruent with existing policy responses already underway in response to underlying structural change. Devastating though the crisis was, it does not appear to have represented a critical juncture in either the approach to policymaking evident in our four countries, nor a clean break with institutional structures inherited from the past. Policymakers would do well to heed this when faced with future crises, although perhaps also with an eye on how to use unexpected opportunities to 'sell' otherwise difficult and unfashionable policies to their various stakeholders in government, industry and politics.

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