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# The New EU Industrial Policy and Deepening Structural Asymmetries: Smart Specialisation Not So Smart

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In response to the 2008 financial crisis and rising competitive pressures from emerging markets, EU industrial policy has made a major comeback. One of the flagship policies is Smart Specialisation, which is located at the intersection of industrial and cohesion policy, and which serves the twin purpose of catalysing the transition of manufacturing sectors to innovative Industry 4.0-type technologies, as well as inducing social and territorial cohesion and upward economic convergence. Employing a critical political economy perspective that accounts for the interplay between state regulation and capitalism's general dynamic of uneven and combined development, the article argues that Smart Specialisation is unlikely to lead to the proclaimed and much-needed economic intra-EU convergence. Although individual Smart Specialisation projects undoubtedly can lead to a technological upgrading, narrowing the gap between advanced high-tech regions and rapidly de-industrializing regions, or regions locked into labour-intensive, low value-added and less knowledge-intensive production, remains a pipedream.

**Keywords:** Smart Specialisation; EU industrial and cohesion policy; uneven and combined development; economic convergence; competitiveness

## Introduction

Industrial policy at European Union (EU) level has made a remarkable comeback after decades of neoliberal restructuring, where active state intervention had been denounced as old-fashioned and inefficient, and criticized for rescuing mostly 'sunset industries' and 'lame ducks' from their inevitable decline. The idea that state institutions, including EU institutions, should take a prominent role in industrial development has been reinvigorated particularly since the 2008 financial crisis. Alongside 'America First', 'Made in China 2025' or 'Make in India', the European Commission heralded the 'European Industrial Renaissance' in 2014 to bolster the competitiveness of EU industries (European Commission, 2014a). Alarmed by a declining share of the manufacturing sector in the gross domestic product (GDP) of the EU, a growing trade deficit with China and, more generally, Chinese manufacturers catching up rapidly in the export of high value-added products, the European Commission launched various initiatives to backshore manufacturing capacity in key industries from emerging markets to the EU.

One of the flagship industrial policies is Smart Specialisation, an industrial upscaling strategy adopted in 2011 that seeks to close the innovation gap by integrating Industry 4.0 technologies into manufacturing, such as robotics, artificial intelligence, cloud computing, big data and data analytics, 3D printing and the internet of things (European Commission, 2011). Defined as a bottom-up, place-based, differentiated regional development policy, Smart Specialisation ideally brings together multiple stakeholders in so-called quadruple helix structures, consisting of businesses, national and regional governments,

universities and research institutes, and the wider civil society, who jointly identify competitive advantages of regional industries and R&D investment priorities. EU, national and/or regional co-financing should trigger a multiplier effect and leverage ever more private investments into the selected projects. Importantly, Smart Specialisation has been blended into EU cohesion policy and thus also serves the goal of facilitating 'economic, social and territorial cohesion, balanced economic growth and upward economic convergence' as enshrined in the Single European Act (SEA) of 1987. Through stimulating regional capacity building and networked learning, as well as facilitating cross-regional synergies, spill-overs and production complementarities, Smart Specialisation should induce a value chain industrialisation whereby manufacturers pull components from various regional industrial clusters, and ultimately close the gap in economic development within the EU. Although non-EU manufacturing clusters can also participate, Smart Specialisation is primarily a 'Europe First' strategy that seeks to strengthen intra-EU economic ties, following the rationale that manufacturing products can be exported with the label 'Made in Europe' (European Commission, 2017, 2020a).

Against the backdrop of longstanding asymmetries in intra-EU economic structures revolving around a north–south and west–east axis, which have intensified in the wake of the 2008 financial crisis, a selective innovation-driven policy approach to economic convergence may appear much needed, especially as EU crisis responses have prioritized internal devaluation strategies to enhance cost competitiveness, leaving the persistent structural disparities untouched (Mamede, 2017; Regan, 2017). And, as Medve-Bálint and Šćepanović (2019, p. 1066) have observed, the relationship between cohesion and industrial policy is yet to be explored. Therefore, this article examines whether Smart Specialisation indeed has the potential to facilitate upward economic convergence, whereby economically weaker EU Member States and regions can catch up and move ahead in transnational value chains. Adopting a critical political economy perspective, the article understands regulation, including EU industrial policy and therein, Smart Specialisation, in dialectical interplay with the inherent contradictions of the broader capitalist dynamics of uneven and combined development. Although such a perspective insists that the unevenness in capitalist development is a structural and recurring feature that cannot be overcome indefinitely, state regulation can temporarily mitigate asymmetries. As will be concluded here, whilst Smart Specialisation can lead to an upgrading in individual cases, the policy is unlikely to induce economic convergence across the EU, but rather consolidates disparities.

Smart Specialisation has hitherto sailed under the radar of political economists, or it is mentioned in passing only (Landesmann and Stöllinger, 2018), even though political economy analyses on the revival of industrial strategies have been gaining traction (Aiginger and Rodrik, 2020; Botta, 2014; Pianta and Lucchese, 2020; Sarra et al., 2019). In contrast, there are numerous analyses from the field of regional, innovation and management studies on what has been depicted as the 'largest and most ambitious programme of regional innovation policy anywhere in the world' (Marques and Morgan, 2018, p. 280). Not only have scholars from this field given the impetus for Smart Specialisation and been actively involved in shaping the policy (Foray et al., 2009), they also tend to endorse the policy as a win-win strategy for regional development, economic convergence and export-led growth, in particular because it does not rely on a one-size-fits-all approach to upgrading regional industrial structures to higher value-added

activities (Crescenzi et al., 2020; Fratesi et al., 2021, p. 7). Moreover, the competitive logic that underpins the access to funding, alongside the range of *ex-ante* and *ex-post* conditionalities, is also highlighted as key to pushing peripheral economies ahead in transnational value chains, most notably because it forces applicants to upgrade continuously their policy proposals and implementation strategies (Crescenzi et al., 2020; Medve-Bálint and Šćepanović, 2019; Tömmel, 2016, p. 111). To be fair, there are also analyses that conclude that the effectiveness and value-added of Smart Specialisation to economic convergence is negligible, if not entirely absent. The reasons for this usually tend to be ascribed to the reluctance, inertia or evasion of Member States to facilitate Smart Specialisation; low (regional) governance capacity and the absence of leadership; centralist government planning cultures; clientelist structures and corruption; or 'elites' lacking a genuine commitment to innovation and transparency that is needed for a bottom-up stakeholder involvement (Brunazzo, 2016; Di Cataldo et al., 2021; Kroll, 2015; Marques and Morgan, 2018; Morgan, 2017; Tömmel, 2016, 2021). The European Commission, in contrast, tends to be portrayed as a benign interlocutor, and its top-down strategic involvement is considered inevitable in the otherwise voluntary bottom-up collective social endeavour (Gianelle et al., 2020). While institutional idiosyncrasies certainly may play into the successful adoption of Smart Specialisation, it will be argued here that focusing only on the weak quality of domestic agents fails to account for how the policy interacts with unequal points of departure of industries in lagging regions.

The analysis draws on policy and evaluation documents of EU institutions, websites and information material of individual Smart Specialisation projects and position papers by organized interest groups, as well as scholarly insights on various implementation aspects of Smart Specialisation. Section I outlines the theoretical framework that informs the analysis and foregrounds the role of state regulation in core-periphery dynamics in the accumulation of capital. Section II locates the adoption of Smart Specialisation within the context of the historical evolution of industrial and cohesion policy. Section III probes the policy's pertinence for upward economic convergence, drawing on illustrative Smart Specialisation initiatives along the north–south divide, while Section IV reveals the political configuration in support of the EU industrial policy, and therein, Smart Specialisation. The conclusion summarizes why Smart Specialisation is unlikely to attenuate the uneven development patterns, and points to the contours of an alternative cohesion policy.

## I. Theorizing Industrial Policy in the Context of Uneven and Combined Capitalist Development

The critical political economy perspective adopted here is rooted in historical materialism, which understands political struggles and regulatory outcomes, the realm of ideas and agents articulating and acting upon such ideas, against the backdrop of how the material conditions of social life, or the modes of production, are being organized over time and space (Bieler et al., 2019; Morton, 2003). The contemporary mode of production is capitalist, and even though capitalism is dynamic, variegated and historically contingent, there are some transhistorical features. To be begin with, under capitalism, the majority of people sell their labour power in return for a wage (while social reproductive labour is often unwaged), and a minority, owning the means of production, extracts and accumulates surplus value from labour in the form of a non-compensation of labour time. The

subsequent accumulation of capital is never guaranteed, linear or unproblematic, nor does it occur in a geographically equal fashion. As a result of capitalist competition, the molecular processes of capital accumulation in space and time become manifest in an agglomeration of unevenly distributed regionalities (Harvey, 2003, p. 103), or what Trotsky (1977 [1932]) coined as 'uneven and combined development'. Whenever surplus capital cannot renew itself in the production sphere within the confines of a given market, or what Harvey (2006, p. xv) identified as the capital-surplus absorption problem, the spatial dispersion in the reinvestment of surplus capital can offer a profitable outlet, provided that the conditions for production are more favourable than those found at home, such as in the form of lower variable production costs, increased labour productivity, more favourable regulatory regimes, or the clustering of knowledge, skills and other industries. Through the continued redifferentiation of the conditions of production, capitalist competition concentrates advanced production and labour processes in some areas and diffuses less advanced ones in others (Botwinick, 1993, p. 131).

Capitalist dynamics are never autonomous but co-constituted by the state, including the emerging state apparatus of the EU. State regulation can open up new investment opportunities, stimulate or curb capitalist competition, and facilitate the concentration of advanced production and labour processes. State regulation can either legitimize and codify hierarchies in wealth and power within and across regions or then seek to alleviate and balance out such hierarchies, such as through state investments and/or attempts to channel surplus capital towards specific regional development paths. Similarly, the state can also seek to attenuate in-built rivalries between capital and labour over the distribution of surplus capital, or give labour a say in the control of investment and innovation. However, as capital accumulates in a dynamic fashion, state regulation can only temporarily mitigate unevenness. Importantly, state regulation is never a functionalist response to the needs of capitalism but always the result of political struggles. Despite the fundamentally skewed capitalist social relations of production, not all political struggles are consciously directed at class interests or class awareness, although such struggles may still have conjuncturally determined class relevance (Jessop, 2002, p. 32). Moreover, the broad categories of capital and labour are often internally fractionalized in multifaceted ways alongside various axes and stages in the capitalist cycle, with shifting hierarchies and power relations over time and space, which is why interests do not always correspond (Jessop, 1999; Poulantzas, 1978). Class fractions often have to move beyond their immediate interests and form strategic coalitions with others when seeking to influence the agenda setting, decision-making and implementation of regulations with the purpose of stabilizing particular accumulation patterns. The state is an asymmetrical institutional terrain to which not all organized interests have equal access; it is itself 'capitalist' as state institutional power is being reproduced through facilitating particular accumulation patterns. This implies that the state is never a neutral arbiter in interest intermediation but, at the same time, it is also not simply a transmission belt for dominant class interests. The state can strategically select and thus privilege specific interests and thereby it impinges on or eases different and often conflicting accumulation logics (Jessop, 1999, pp. 44–45).

Industrial policy rarely serves the exclusive interests of a single class (fraction). Rather than a singular policy, it usually comes in 'packages of interactive measures and strategic coordination that offer incentives or capabilities for economic development' (Andreoni

and Chang, 2019, p. 146). Such packages can entail regulations and funds that seek to bolster specific sectors or individual firms, technologies or the geographical structure of the production (vertical state intervention), or macroeconomic policies that seek to improve the conditions for all corporations equally, such as fiscal, monetary, innovation, education and labour policies (horizontal state intervention). Due to the political-strategic nature of EU regulation, components of industrial policy can thus cater to multiple and also contrasting interests, which in the context of uneven capitalist development can contribute to policy incoherencies.

## II. Historicizing Smart Specialisation within EU Industrial and Cohesion Policy

The Treaty of Rome did not mention industrial or cohesion policy as designated Community areas; yet, the preambles declared a high degree of competitiveness and the reduction of differences between the various regions and the backwardness of the less favoured regions, Community goals, which indirectly laid the foundations for supranational intervention. Although the European Commission observed only a few years after the Treaty of Rome that economic disparities among regions had worsened (European Commission, 1965), it did not initiate secondary legislation to level out regional differences until the adoption of the European Regional Development Fund (ERDF) in 1975. The ERDF offered funding for infrastructure projects such as rail, road, sea transport and telecommunications, as well as for the modernization of old industries. Importantly, the ERDF operated as a transfer of payments between Member States: although each Member State received something, roughly two-thirds of the funding was earmarked for infrastructure upgrades in the poorest regions.

Initially, national governments could determine eligible regions and decide which projects received funding, but when the ERDF was reformed in 1979, the European Commission could also choose its own regional development projects, while national co-financing became a prerequisite to receive funding (Brunazzo, 2016, pp. 20, 30). The Commission's role subsequently increased alongside a series of reforms in the 1980s up to the 2000s. When, in response to increased asymmetries that came with the accession of Spain and Portugal, the Single European Act (SEA) in 1987 enshrined the goal of 'social and territorial cohesion, balanced economic growth and upward economic convergence', regional policy officially became a Community competence. Moreover, when several regulations in the late 1980s stipulated development targets for regions lagging behind or affected by industrial decline and allocated one or more structural funds, the EU cohesion policy was born (Brunazzo, 2016, pp. 22–23; Tömmel, 2016, p. 111).

The Treaty on the Functioning of the European Union (TFEU) of 1992 for the first time set out an industrial policy, which had to be horizontal in nature by securing the framework conditions favourable to industrial competitiveness (see Article 173). In 1994, the EU cohesion fund was adopted to support transport and infrastructure projects, and to help trim the least-developed economies into the convergence criteria of the Economic and Monetary Union (EMU). The EU co-financing could take up to 85 per cent of the funding (and more under exceptional circumstances), allowing regional authorities to access the ERDF and the cohesion fund directly and to adapt programmes designed by the member governments to their priorities (see Article 159 TEC; Cohen, 2019, p. 53). National governments could also take up loans from the European Investment Bank (EIB),

which allocated more than 30 per cent of its loans to programmes fostering economic and social cohesion (Bubbico et al., 2016, p. 194).

With the adoption of the Lisbon Agenda of 2000, which sought to make the EU the world's most competitive and knowledge-based economy, bolstering the competitiveness of industries was high on the agenda, notably the competitiveness of industries that could not keep pace with the technologically more advanced US, Japanese and South Korean counterparts, and especially the ICT and related industries revolving around Silicon Valley in California, or Route 128 in Boston. In this context, EU cohesion policy was 'Lisbonized': regional competitiveness came to enjoy primacy over economic convergence, and all sorts of scoreboards and performance indexes, as well as benchmarking best practices, were extended to regions (Avdikos and Chardas, 2016, p. 98). In the spirit of the Lisbon Agenda, the European Commission pushed for the introduction of a competitive system in the allocation of cohesion funding rather than predefined quotas based on regional GDP and unemployment rates. Although the EU Council blocked such a radical change, some of the funding came to be exclusively reserved for best performers in competitiveness terms (Tömmel, 2016, p. 113). What marked the beginning of a gradual hollowing out of the transfer of payments logic, was in 2004, with the welcoming of ten new Member States, accompanied by a substantive decrease in the budget allocated to cohesion policy, if measured relative to the EU GDP (Brunazzo, 2016, p. 28).

Once it became clear that the Lisbon Agenda failed to meet its headline goals (Kok, 2004), the Commission set out a programme for sectoral and cross-sectoral industrial policies in 2005 whereby investments in high technology manufacturing and innovation were considered indispensable for an export-led EU growth strategy (European Commission, 2005). A high-level expert group, named Knowledge for Growth, consisting mostly of scholars specialized in economic growth and innovation, was entrusted with the task to 'reinvigorate the Lisbon Strategy' (European Commission, 2005). The work of Foray et al. (2009) subsequently gave the impetus for adopting Smart Specialisation as an economic development strategy (see also McCann and Ortega-Argilés, 2016). Once the concept was fleshed out after consultations with other academics, Barca (2009) advocated emulating Smart Specialisation as a bottom-up, place-based, differentiated economic development strategy within the existing EU cohesion policy. Rather than supporting infrastructure projects, cohesion policy had to be transformed into an industrial upscaling strategy based on knowledge and innovation. Moreover, rather than following a dirigiste approach whereby national and regional governments would determine innovation, pick winners or breed national champions, investment priorities had to be determined through an entrepreneurial discovery process, making use of the collective intelligentsia of a quadruple-helix structure, consisting of businesses, governments, universities and knowledge centres, as well as civil society representatives.

The European Commission followed suit in 2011 and announced in its Communication 'Regional Policy Contributing to Smart Growth in Europe 2020' that national and regional governments had to develop Smart Specialisation research and innovation strategies as a pathway to upgrading their economies (European Commission, 2011). Regions had to find a competitive niche in which they could become world leaders, and thus 'specialize smart' in a limited number of areas of core strength, rather than diffusing investments into multiple domains (European Commission, 2014b, p. 4). Importantly, Smart Specialisation was not confined to economic laggards but declared 'a policy

for all regions – with no region left behind' (European Commission, 2018a). EU enterprises, in particular small- and medium-sized enterprises, should be able 'wherever they are' to play the 'Champions League, instead of just local tournaments' (European Commission, 2017).

After a pilot in 2011, Smart Specialisation was officially launched at the start of the new budgetary period in 2014. Located at the interface of EU industrial, regional and cohesion policy, it came to span several of the Commission's Directorate Generals, which had to add a top-down strategic drive to an otherwise multi-stakeholder bottom-up process. The Commission saw its own role as a helpful companion in empowering national and regional authorities and turning 'their needs, strengths and comparative advantages into marketable goods and services' (European Commission, 2017, 2018a). The Smart Specialisation Platform was established to sustain capacity-building guidance in the formulation of regional priorities and the implementation process. Hosted by the Institute for Prospective Technological Studies in Seville, Spain, one of the European Commission's seven research centres, the platform was meant as a hub where stakeholders from the regional quadruple helices would interact, network, share knowledge and discuss their priorities and undergo peer review, ultimately leading to new collaborations within and across industrial value chains. As part of the centralized supervision of the decentralized Smart Specialisation strategies, a whole array of monitoring, data gathering and benchmarking tools and institutions were developed to identify strengths and weaknesses and compare regional performances (McCann and Ortega-Argilés, 2016, p. 1409).

Importantly, Smart Specialization was mainstreamed into the cohesion policy through the reform of the policy in 2013, which imposed that developing Smart Specialisation strategies was an *ex-ante* conditionality to access funding within the ERDF, while the ERDF declared Smart Specialisation a top investment priority (see Article 5, 1(b) EU Regulation 1301/2013). Further conditions were outlined in partnership agreements, which were agreed in advance to specify the design of submitted programmes, selected partners, budgetary resources, data provision, and the performance transparency of the programmes. Moreover, an *ex-post* conditionality was added: access to funding was made conditional upon compliance with the new EU public deficit and debt rules, and the macroeconomic adjustment measures of the European semester. Although there was some leniency for Member States facing fiscal limits, such as reducing co-financing requirements to 15 per cent, or by increasing cash flows, advancing lump-sum or flat-rate payments, partnership agreements still required minimum yearly national investment levels (Bubbico et al., 2016, p. 192). The suggestion by the European Parliament to exempt Member States facing financial hardship from the co-financing requirement remained unsuccessful. The European Commissioner for Regional Policy, Cretu, reasoned that Smart Specialisation would make 'the best of EU taxpayers' money, at a time where budget discussions at EU level are gaining momentum' (European Commission, 2017). By preserving the right to suspend funding for Member States under the excessive deficit or macroeconomic imbalance procedure, the European Commission could demand a reprogramming of the funding 'to maximise the growth and competitiveness impact' (European Union, 2013).

Smart Specialisation is not limited to the ERDF but cross-cuts multiple EU funding streams, all of which subjugate the access to funding to a competitive selection process.

For example, competitive funding for Smart Specialisation could also be obtained from the Stairway to Excellence programme, which reserved roughly €100 billion for Smart Specialisation, or Horizon 2020, now Horizon Europe and other research, innovation and competitiveness-related EU funding programmes. Importantly, the combined use of multiple funding streams and the increased financing of debt instruments should unleash private (venture) capital into manufacturing agglomerations within and across EU regions. The Commission expected that €100 billion of private funding could be leveraged on the basis of the €325 billion reserved for EU cohesion policy (European Commission, 2019a). The various scoreboards and performance indexes should signal a region's expertise in a specific knowledge domain or niche market, in addition to stimulating competition and increasing peer pressures among regions (European Commission, 2014b).

With Smart Specialisation also being key for achieving the fundamental objective to counter economic asymmetries, the next section probes the policy's potential to induce upward economic convergence.

## III. Smart Specialisation in Interplay with Intra-EU Asymmetries

As part of a combined development, the EU hosts one of the most integrated regional value chains in the world. At the same time, also part of a combined development, all EU economies have undergone a process of deindustrialization since the 1970s, whereby labour-intensive medium- and low-technology manufacturing had been outsourced and offshored to low-wage countries in the global south. With Asian, and in particular Chinese, manufacturers having climbed up the ladder in the export of capital- and skill-intensive manufacturing production, not only has the share of EU value-added exports to the world fallen, but so has the size of the intra-EU value chains, and thereby intra-EU trade (Bruegel, 2020, pp. 7, 16). These combined developments have affected EU economies unevenly, however. Deindustrialization, accompanied by a fall in investment, has hit the low-technology and low-knowledge-intensive branches of the weaker EU economies harder (Sarra et al., 2019). In particular the EU's south has seen a comparatively much larger contraction of manufacturing industries, with investment shortfalls ranging from 25 to 60 per cent since the 2008 financial crisis (European Commission, 2017). Crisis responses, such as fiscal austerity and internal devaluation through reduced corporate taxes and wage repression, have left the uneven industrial structures untouched (Mamede, 2017, p. 378; Regan, 2017).

Smart Specialisation has been adopted to counteract the Chinese challenge and to balance out intra-EU asymmetries of manufacturing growth patterns, industrial dependencies, investments and innovation capabilities. Throughout the budgetary cycle of 2014–2020, more than 200 Smart Specialisation strategies were developed, involving 18 EU Member States and 177 EU regions, as well as six non-EU countries and 16 non-EU regions (European Commission, 2020b). With respect to Europe's rapidly deindustrializing south, Smart Specialization has been employed amongst others in the agri-food and tourism sectors, such as in the Extremadura in Spain, a rural region with no noteworthy industrial development, which after the 2008 financial crisis has diverged drastically from EU and also Spanish averages over a range of economic indicators (Madeira et al., 2021, p. 8). In 2017, a consortium in Tajo-Salor-Almonte set up a strategy for the production of

the *La Torta del Casar*, a sheep cheese coagulated with thistle rennet, involving shepherds, cheesemakers, co-operatives and the Local Action Group for Rural Development. In addition to improving the cheese-making process and merchandising strategies, a Farmers and a Shepherding School was established to train 'highly professional shepherds embracing ICT and latest technological advances in the field' (European Commission, 2020c). The cheese is being marketed as 'a high-end product' through a dedicated website, and hotels serve samples at breakfast and also offer cheese excursions. According to the European Commission, the project has grown into a real Smart Specialisation asset and works as an 'economic catalyst for the Tajo-Salor-Almonte territory', 'structuring the entire economic activity of the area through connections with many other sectors' (European Commission, 2020c; TAGUS, 2019, p. 9). Similar agriculture-based tourism strategies can be found in other Spanish regions and in neighbouring Portugal. For example, the regions of Alentejo, Algarve, Azores and Madeira, which also have been categorized as lagging regions exhibiting low growth, have all identified the expansion of tourism services with spin-offs to the local agri-food production, gastronomy or the cultural and creative industries as trailblazing areas for industrial investment (European Commission, 2021a, 2021b; Laranja et al., 2020).

Although smart agri-food-tourism strategies have succeeded in integrating various regional sectors, making them more competitive and improving the visitor's tourism experience (Romaõ, 2020), they concern sectors with low technological intensity, low skill and low value-added, and importantly, contrast sharply with the Smart Specialisation strategies adopted in the medium and high technology-intensive export-led EU economies of the EU north. For example, the Artificial Intelligence & Human Machine Interface project set up in 2018 by the German state Baden-Württemberg and the regions of Lombardy, Navarre, North Brabant and Örebro aims at developing and promoting AI-based technologies for the improvement of mechatronics, robotics and human–machine interaction. Baden-Württemberg is one of Europe's most innovative regions: in addition to hosting global industrial players with high patenting capacity, and various SMEs considered 'hidden champions' in their respective markets, as well as more than 30 institutes of applied sciences, 80 per cent of R&D expenditure in this region stems from the private sector (Vanguard Initiative, 2020). Similarly, the Smart Specialisation project MoBiDiK developed by the German state of North-Rhine Westphalia and the company Bayer, as well as some other pharmaceutical companies, and universities, aims at developing the use of modular plug-and-produce technology to improve the biopharmaceutical production process. North-Rhine Westphalia is Germany's industrial powerhouse with industries like the automotive sector, biotechnology, chemical industries and mechanical engineering, hosting 37 of Germany's top 100 corporations and more than 20,000 foreign corporations, and 16 international offices that support and guide foreign investors in doing business (NRW.Invest, 2020). These regions not only exhibit higher productivity and employment levels, but corporations located in these economies also tend to be innovation leaders or frontrunners with higher R&D activities and a higher readiness to make the transition to Industry 4.0 production (European Commission, 2019b).

The above-mentioned Smart Specialisation initiatives embody the EU's north–south divide, or what is sometimes referred to as the German-centred economic core vis-à-vis the southern periphery (Bohle, 2018; Botta, 2014; Cutrini, 2019; Landesmann and Stöllinger, 2018; Mamede, 2017). To be sure, intra-EU economic asymmetries are not

as clear-cut and regions can combine industries with mixed degrees of economic developments. Larger southern economies, like Italy and Spain, also have more variegated productive and export structures compared to smaller members like Portugal or Greece (Botta, 2014; Cutrini, 2019). Notwithstanding this, and accounting for the fact that the transformative potential of individual Smart Specialisation initiatives cannot be denied (see also Di Cataldo et al., 2021), with respect to economic convergence, incremental technological upgrades in traditional sectors of lagging regions in the EU's south, like tourism and agri-food, are unlikely to narrow the gap, while technologically advanced economies simultaneously also upgrade their regional industrial structures with Smart Specialisation strategies. The European Commission is well aware that not every region can become the next Silicon Valley through the adoption of Smart Specialisation initiatives (European Commission, 2018a). However, the prominence of Smart Specialisation within cohesion policy necessitates a discussion of whether it is indeed the right strategy for alleviating structural disparities (see also Madeira et al., 2021, p. 6).

Smart Specialisation builds on the neoclassical idea of creating a 'comparative advantage in factor endowments as the main driver for structural change' (Andreoni and Chang, 2019, p. 142). As Smart Specialisation relies on a competitive selection, only strategic priority projects that have outcompeted other projects in a given region will receive financial support. While competition does not take place on an equal footing, and struggles around which agents are deemed to be appropriate 'entrepreneurial actors' can be intense (D'Adda et al., 2022, p. 156; Morgan, 2017, p. 572), it is also no foregone conclusion that specialization, as opposed to diversifying industrial activities, is an adequate strategy for all regions (Dzemydaitė, 2021). Importantly, the policy does not by definition forge new regional specializations. Upgrading existing industrial assets and building on the past, rather than breaking with the past, enjoys primacy. Smart Specialisation also does not necessarily lead to the integration of Industry 4.0-type technologies, and where it does, developed regions are better positioned to benefit from a research and innovation development strategy (Madeira et al., 2021, p. 15). More generally, technology collaboration and educational and skill hubs tend to be concentrated in the most advanced economies and regions, which is why Smart Specialisation may corroborate a 'winner takes all' phenomenon, whereby the agglomeration of industrial activity and the cumulation of technological advances can give rise to vicious circles that can deepen persistent disparities across European regions (Landesmann and Stöllinger, 2018, pp. 19, 21). Specifically, Industry 4.0 and smart factory technology tend to increase the advantages of industrial clustering in the vicinity of related services, with the result that high-value and high-skilled manufacturing tends to be regionally concentrated (Benanav, 2020, p. 43).

Regional clusters in knowledge-intensive high value-added sectors of the EU core economies, moreover, tend to attract larger and better funded Smart Specialisation projects, while they also tend to be far more successful in linking Smart Specialisation activities with the highly competitive Horizon 2020 programmes (McCann and Ortega-Argilés, 2016; Kroll, 2015). In contrast, success rates of southern and eastern European consortia have been below average, and projects also tend to be much smaller in scale (Souliotis and Alexandri, 2017, p. 232). In regions where the above-mentioned clustering synergies are absent, the multiplier effect of attracting private investments is also more difficult to achieve. Peripheral regions with lower knowledge-intensive industrial segments also face more difficulties to fulfil the quadruple helix composition, whereas

knowledge-intensive applications, which have universities and research centres on board, tend to enjoy a comparative advantage above projects with weak academic and research capacities (Crescenzi et al., 2020).

Less developed and poorer regions also face greater difficulties coping with the administrative workload that comes with the sheer complexity of submitting competitive funding applications, co-operating with the European Commission and complying with progress reports, as well as mid-term and final evaluations (Pellegrin et al., 2019, p. 74). Furthermore, due to the far-reaching austerity programmes adopted in the context of EU debt and fiscal deficit rules, regional budgets have shrunk in the most crisis-hit countries. Notably, those regions in Member States under excessive deficit and macroeconomic imbalance procedures are structurally disadvantaged in 'specializing smart': not only are similar stimulus programmes, such as those found in wealthier Member States, out of reach, borrowing money on financial markets or the EIB is also not a viable option as such borrowings count as public debt subject to EU deficit rules (Bubbico et al., 2016, p. 194). With the imposition of *ex-post* conditionalities, regions in Member States infringing the imposed structural adjustment measures also risk being confronted with the withdrawal of EU funding. Thus, regions confronted with rapid deindustrialization or low value-added, low knowledge- and low technology-intensive industries face multiple obstacles that may put them at a comparative disadvantage. Smart Specialisation, as an industrial policy within cohesion policy, seems to consolidate the status quo of structural asymmetries.

Although the redistributive nature of EU structural funds was never meant to induce economic convergence but merely to alleviate some of the underdevelopment (Becker et al., 2020; Cohen, 2019, p. 75), as Pellegrin et al. (2019, p. 76) observe, the fact that cohesion policy is being mobilized on different fronts contributes to diluting its original raison d'être. Hugenot-Noël et al. (2017, p. 7) speak of 'policy dilution' and 'policy overload', and Landesmann and Stöllinger (2018, pp. 19–20) reach a similar conclusion when arguing that the European Commission associated industrial policy almost exclusively with innovation policy directed towards economies at or close to the global technology frontier, without sufficiently taking into account the needs of economies and regions at lower or intermediate levels of technological capabilities.

## IV. Supporting Class Coalitions

Smart Specialisation, as part of the wider EU industrial strategy, has been widely endorsed by organized industrial capital and labour alike. United in a common concern about China catching up rapidly, national- and EU-level industry organizations have pushed the European Commission to use all instruments at its disposal to bolster industrial capabilities through research and innovation (BusinessEurope, 2018; BDI, 2019; ERT, 2019a, 2019b). A common fear was that the EU would fall significantly behind the Organisation for Economic Co-operation and Development (OECD) average in terms of R&D expenditures relative to GDP, and particularly behind China, the US, Japan and South Korea (BusinessEurope, 2018, p. 2; ERT, 2019b). Industry4Europe, a coalition of 156 associations from EU manufacturing sectors, therefore called for more public investments into technological innovation, notably by developing EU financing instruments to leverage private capital, facilitate industry

access to risk capital and enable inter-regional investment platforms and financing schemes tailored towards regional characteristics (Industry4Europe, 2018). The coalition, moreover, demanded an 'informed and permanent dialogue between the industry and policy decision-makers' (Industry4Europe, 2018, p. 3). Specifically with regard to cohesion policy, industrial capital demanded better adapted and coordinated place-based and place-sensitive policy initiatives to modernize all European regions (European Commission, 2018b). These demands have been echoed by national governments and EU bodies alike, such as in statements by the Council and individual member governments (Bundesministerium für Wirtschaft und Energie, 2019; EU Council, 2019). The competitiveness rhetoric and the necessity to invest has also been welcomed by organized labour. The European Trade Union Confederation (ETUC), for example, has been largely supportive of Smart Specialisation (ETUC, 2019). However, while organized industrial capital is mostly concerned about enhancing its external competitiveness, and levelling out the regional disparities is not being prioritized, ETUC foregrounds intra-EU asymmetries more and asked the Commission 'to intensify current efforts to support industrial regions', in particular 'less developed regions or regions damaged by economic desertification' (ETUC, 2019, p. 53).

The European Commission has been more responsive to the interests of industrial capital. In addition to organizing industry days, and more recently industry weeks, it established a high-level industrial roundtable, named Industry 2030, to advise on the future direction of EU industrial policy and discuss industrial challenges, and to co-develop policy responses (European Commission, 2018b; Industry 2030, 2019). Moreover, Smart Specialisation is first and foremost a neoliberal supply-side strategy, entrenched within new public management and private–public governance structures, which embodies an in-built hierarchy in favour of industrial capital. National and regional authorities, private businesses, universities and civil society are far from being equal partners in the decentralized entrepreneurial discovery process. Businesses enjoy a privileged position when selecting the areas and activities for regional specialization, while universities and research institutes are subordinated to private profit motives (D'Adda et al., 2022, p. 158; Fratesi et al., 2021, p. 28). As part of the decentralized policy design, regional and local state agents tend to be more prominently involved than national and EU representatives, while civil society, the fourth helix in the multiple stakeholder engagement, is not only vaguely defined, or depicted in terms of innovation users and consumers, but also marginally involved (Aranguren et al., 2019). In contrast, 'labour' is not even considered a separate collaborative agent, whether in the formulation, implementation or evaluation of Smart Specialisation strategies.

## Conclusion

The goal to reduce economic disparities across regions and Member States has a longstanding legacy in the process of European integration. In response to the failures of the Lisbon agenda and the financial crisis of 2008, Smart Specialisation was adopted in 2014 as a central pillar in the fulfilment of EU cohesion policy. The policy serves the dual purpose of enhancing the global competitiveness of EU industries and rebooting export-driven growth through integrating Industry 4.0 technological innovations, while at the same time inducing upward economic convergence across the EU. Building on the

assumption that specialization and not differentiation is the key to fulfilling these purposes, Smart Specialisation seeks to enable selected regional industrial clusters to climb the stairway to excellence, move ahead in transnational value chains and exploit new cross-regional synergies.

Although Smart Specialisation can certainly facilitate place-based, tailored industrial upgrades in individual projects, this article has challenged the policy's appropriateness for achieving the overarching goal of convergence. To be sure, no single policy can remedy the EU's uneven capitalist structures, and the analysis has highlighted only some contrasting examples out of 200 projects that have been adopted in a very short time span. The issue is, however, not that it is too early to tell or that an exhaustive analysis can indeed prove the policy's impact on convergence, but rather that Smart Specialisation has been primarily designed to win the global competitiveness race without accounting for, or seeking to remedy, structural asymmetries. As a knowledge-based innovation policy for all regions, Smart Specialisation seems to benefit more those regions that host technologically advanced, knowledge-intensive and high value-added industries, often industries that are already frontrunners or that can absorb Industry 4.0-type technologies more easily. Such regions also tend to profit from the agglomeration effect by hosting a critical mass of similar knowledge-intensive industries and skilled labour force, and are therefore more likely to stay ahead of regions that find themselves far from the technological frontier. With the introduction of a competitive logic in the EU cohesion schemes, alongside the range of *ex-ante* and *ex-post* conditionalities, the previously unconditional budget allocation for subsidizing collective goods has been abolished. Moreover, the financing of debt instruments and loan-based financing more generally, rather than outright grants, is gaining increased prominence (European Commission, 2021c). As Becker et al. (2020) have poignantly observed, solidarity ended where competition began. To obtain ERDF funding, regions must start an entrepreneurial discovery process to define priority investment areas. Not all industries have the capacity to bring forth a quadruple helix structure or to absorb Industry 4.0-type technologies, and leverage private investments on top of public investments. It remains an open question whether such technologies, alongside specialization rather than diversification, are indeed the drivers for industrial development, and suitable for regions with low knowledge-intensive, low value-added or no noteworthy industries to catch up.

Smart Specialisation will only become more important in the 2021–2027 budgetary period where the public financing of debt instruments, rather than outright grants, will be gaining further traction (European Commission, 2021c). The Commission's communications 'European Green Deal' in 2019 and 'A New Industrial Strategy for Europe' in 2020 have subsumed Smart Specialisation to the goal of achieving climate-neutrality by 2050. Although transforming industries with high carbon emissions into climate-neutral production units is undoubtedly an important challenge ahead, Smart Specialisation has to tick yet another box – without a discussion of whether it is indeed the policy to achieve its original raison d'être, and in extension, whether there might be better-placed policies to induce convergence. This article cannot offer a panacea but rather points to the contours of an alternative that can be subject to further discussions.

The neoliberal restructuring of capitalist production of the past four decades has led to a dramatic shift in power in favour of capital and at the expense of labour, leaving untouched the unevenness in economic development across the EU. Moreover, Smart

Specialisation comes with the air of being a bottom-up process where multiple stakeholders collaborate and jointly identify the most promising areas for funding. The industrial upscaling process is, however, mostly business-driven with government representatives acting as facilitators, while research institutes, labour and other societal interests are subordinate to private profit motives. EU cohesion policy could be a perfect terrain to reverse such inequalities and experiment with socially inclusive, ecologically sustainable and also more equitable and democratic forms of industrial production, and importantly, the creation of common goods that are accessible to society at large. The success of the project of an ever-closer union depends not only on social and economic cohesion and convergence but also on EU citizens having ownership of policies that affect their lives.

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